

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P633641

Luminaire Tested: GWS-SA2F-727-U-SLL-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633641  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-40)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2F-727-U-SLL-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND  
SPILL LIGHT ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (32) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8214.4 lumens  
Efficiency: N/A  
Efficacy: 66.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G2

Input Watts (W): 124.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

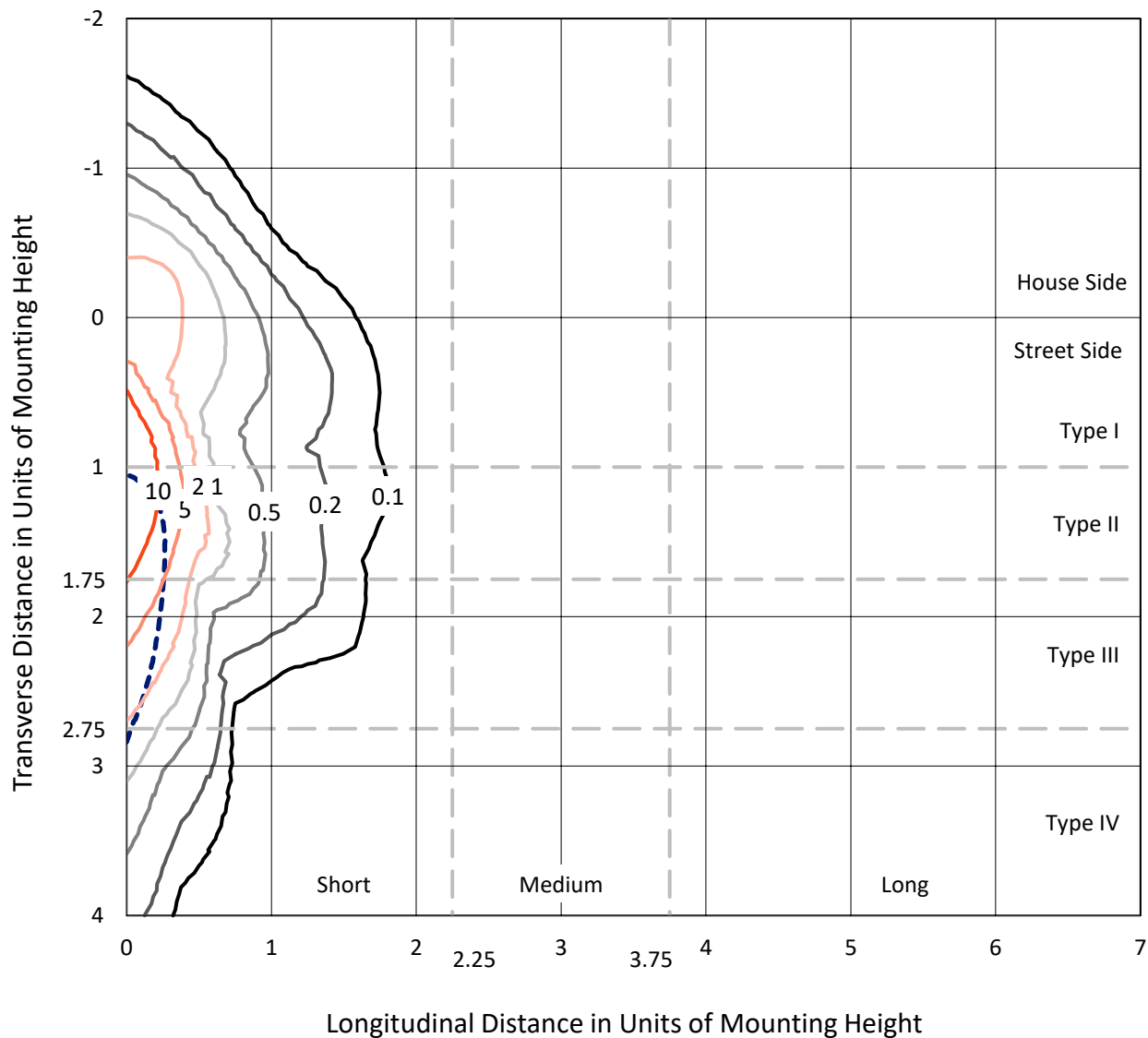


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

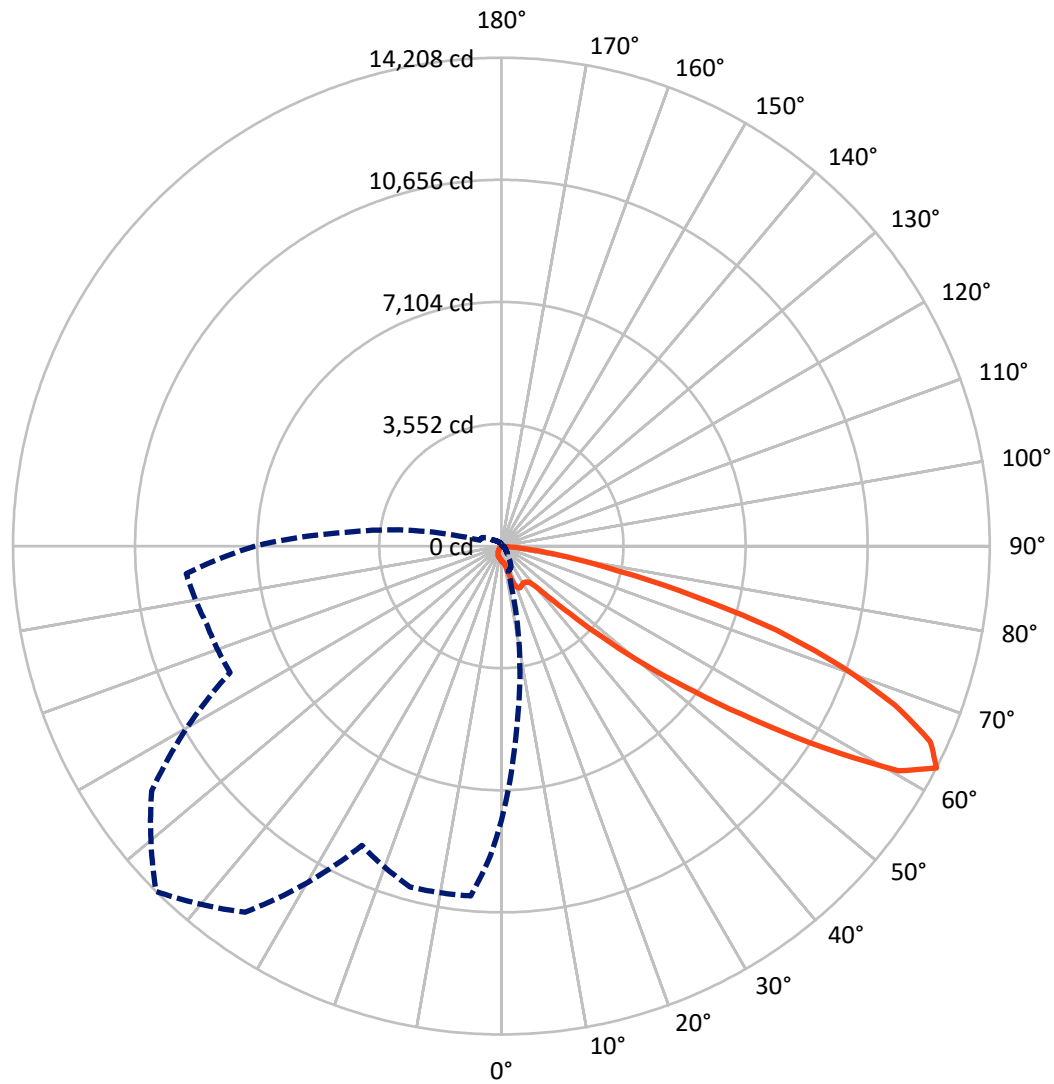


Based on 10 foot mounting height. Maximum calculated value = 14.6 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



— Vertical Plane Through 315-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical

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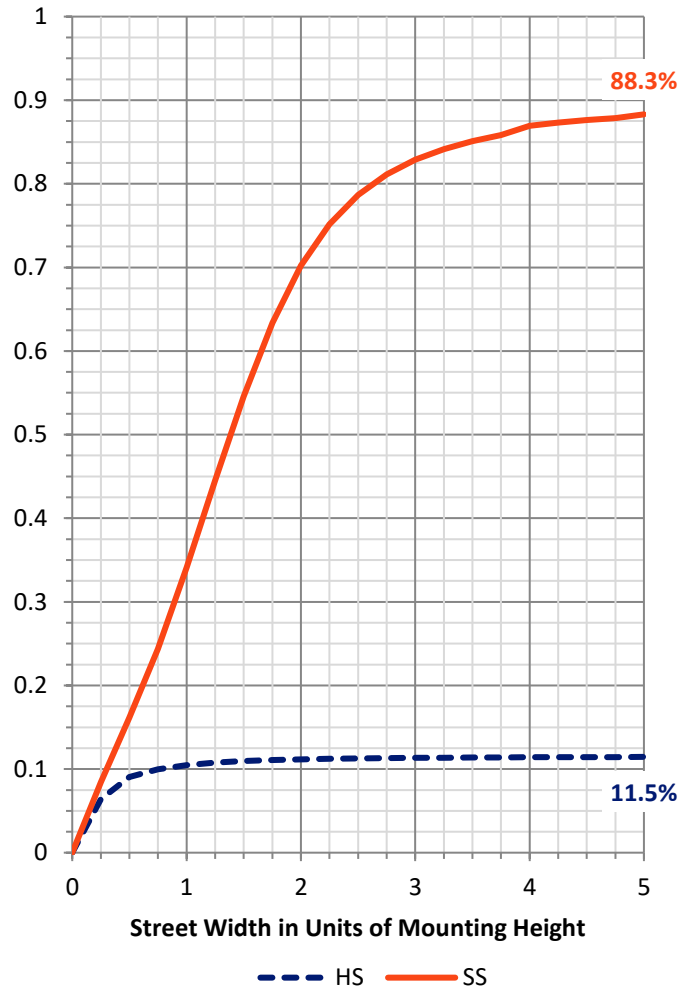
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 954.4    | 0.0    | 954.4  |
|                    | % Fixture | 11.6     | 0.0    | 11.6   |
| <b>Street Side</b> | Lumens    | 7260.0   | 0.0    | 7260.0 |
|                    | % Fixture | 88.4     | 0.0    | 88.4   |
| <b>Total</b>       | Lumens    | 8214.4   | 0.0    | 8214.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 36.8   | 0.4       |
| 10°-20°   | 126.1  | 1.5       |
| 20°-30°   | 284.9  | 3.5       |
| 30°-40°   | 490.7  | 6.0       |
| 40°-50°   | 925.7  | 11.3      |
| 50°-60°   | 2066.8 | 25.2      |
| 60°-70°   | 2764.3 | 33.7      |
| 70°-80°   | 1386.2 | 16.9      |
| 80°-90°   | 132.9  | 1.6       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 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°    | 8214.4 | 100.0     |
| 0°-180°   | 8214.4 | 100.0     |

**Coefficient of Utilization**



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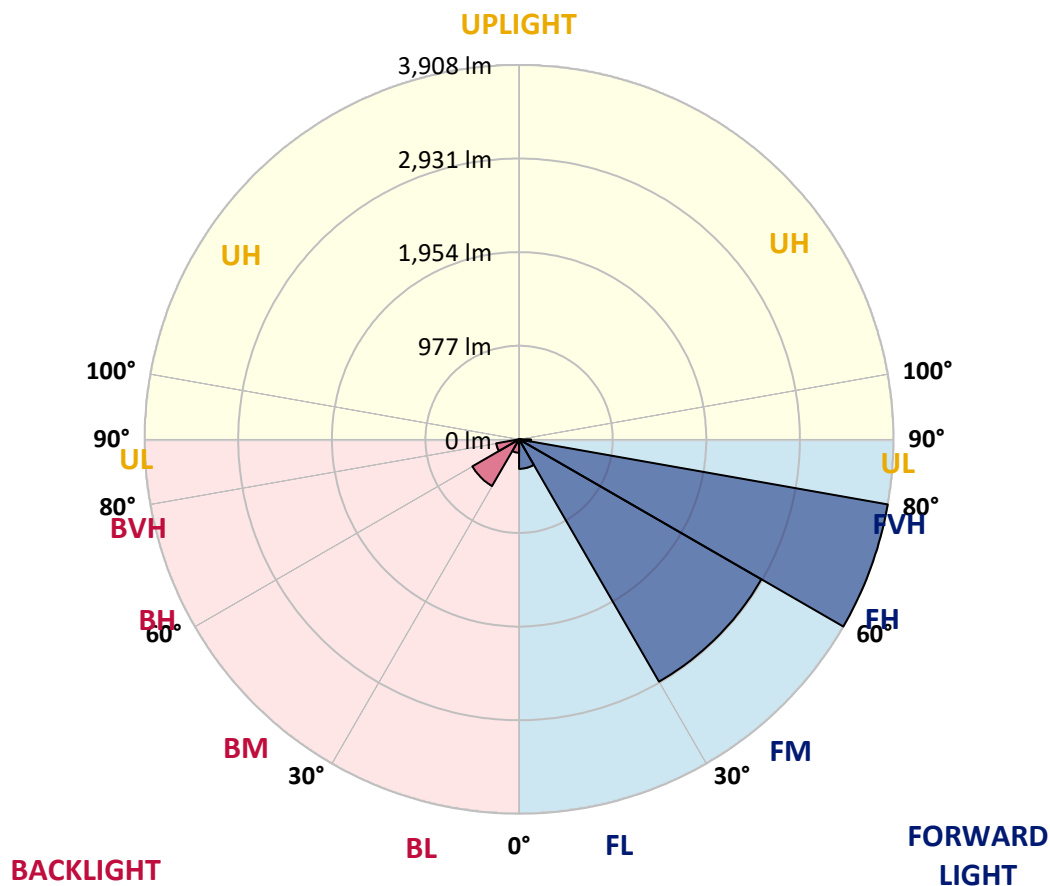
CATALOG NUMBER: GWS-SA2F-727-U-SLL-W-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 307.6  | 3.7       |                         |      |         |
| FM   | (30°-60°)   | 2920.5 | 35.6      |                         |      |         |
| FH   | (60°-80°)   | 3907.9 | 47.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 124.0  | 1.5       |                         |      | G2/225  |
| BL   | (0°-30°)    | 140.1  | 1.7       | B1/500                  |      |         |
| BM   | (30°-60°)   | 562.8  | 6.9       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 242.7  | 3.0       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 8.8    | 0.1       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 2°     | 5°     | 15°    | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   |
|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 426.0  | 426.0  | 426.0  | 426.0  | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 |
| 2.5°  | 421.1  | 420.2  | 418.2  | 412.4  | 407.5 | 404.6 | 398.8 | 398.8 | 397.8 | 395.9 | 392.0 |
| 5°    | 407.5  | 403.6  | 399.7  | 389.1  | 377.4 | 370.6 | 362.8 | 361.8 | 361.8 | 359.9 | 358.9 |
| 7.5°  | 386.1  | 382.2  | 377.4  | 359.9  | 349.2 | 342.4 | 335.6 | 334.6 | 331.7 | 331.7 | 331.7 |
| 10°   | 374.5  | 368.6  | 360.8  | 341.4  | 330.7 | 324.9 | 320.0 | 317.1 | 315.1 | 312.2 | 311.2 |
| 12.5° | 399.7  | 389.1  | 372.5  | 337.5  | 322.9 | 315.1 | 309.3 | 307.4 | 301.5 | 297.6 | 294.7 |
| 15°   | 478.5  | 452.3  | 419.2  | 346.3  | 320.0 | 308.3 | 300.5 | 296.7 | 291.8 | 285.0 | 280.1 |
| 17.5° | 607.9  | 570.0  | 514.5  | 374.5  | 317.1 | 302.5 | 292.8 | 286.0 | 279.1 | 271.4 | 265.5 |
| 20°   | 786.9  | 730.4  | 664.3  | 426.0  | 317.1 | 295.7 | 284.0 | 275.3 | 265.5 | 256.8 | 250.0 |
| 22.5° | 1014.4 | 958.0  | 845.2  | 513.5  | 321.0 | 286.9 | 273.3 | 261.6 | 250.0 | 242.2 | 234.4 |
| 25°   | 1269.3 | 1189.5 | 1084.5 | 619.6  | 331.7 | 275.3 | 260.7 | 249.0 | 238.3 | 228.6 | 219.8 |
| 27.5° | 1553.3 | 1466.7 | 1326.7 | 770.3  | 355.0 | 263.6 | 247.0 | 236.3 | 226.6 | 216.9 | 205.2 |
| 30°   | 1814.9 | 1763.4 | 1620.4 | 951.2  | 392.9 | 255.8 | 236.3 | 226.6 | 216.9 | 204.3 | 193.6 |
| 32.5° | 2129.1 | 2037.7 | 1920.0 | 1157.4 | 443.5 | 248.0 | 227.6 | 214.0 | 206.2 | 194.5 | 182.9 |
| 35°   | 2445.2 | 2367.4 | 2212.7 | 1411.3 | 499.9 | 240.2 | 216.9 | 204.3 | 197.4 | 183.8 | 171.2 |
| 37.5° | 2771.0 | 2753.5 | 2600.8 | 1692.4 | 555.4 | 231.5 | 204.3 | 196.5 | 189.7 | 174.1 | 159.5 |
| 40°   | 3092.0 | 3059.9 | 2918.9 | 2013.3 | 589.4 | 221.8 | 193.6 | 188.7 | 180.9 | 163.4 | 146.9 |
| 42.5° | 3399.3 | 3375.0 | 3237.9 | 2320.7 | 584.5 | 213.0 | 182.9 | 177.0 | 171.2 | 153.7 | 133.2 |
| 45°   | 3776.7 | 3736.8 | 3563.7 | 2548.3 | 534.9 | 222.7 | 172.2 | 162.4 | 161.5 | 144.9 | 119.6 |
| 47.5° | 4482.8 | 4351.5 | 4057.8 | 2723.4 | 485.3 | 248.0 | 160.5 | 148.8 | 155.6 | 136.2 | 106.0 |
| 50°   | 5472.0 | 5317.4 | 4892.3 | 2859.5 | 484.4 | 281.1 | 158.5 | 136.2 | 150.8 | 129.4 | 94.3  |
| 52.5° | 6466.0 | 6193.7 | 5677.2 | 2932.5 | 520.4 | 305.4 | 176.0 | 123.5 | 144.9 | 122.6 | 85.6  |
| 55°   | 7418.2 | 6853.1 | 6006.0 | 2691.3 | 548.6 | 331.7 | 208.1 | 116.7 | 134.2 | 114.8 | 80.7  |
| 57.5° | 8325.7 | 7383.2 | 6148.9 | 2129.1 | 642.9 | 342.4 | 227.6 | 119.6 | 118.7 | 105.0 | 76.8  |
| 60°   | 8450.2 | 7357.9 | 5860.1 | 1238.2 | 709.0 | 323.9 | 219.8 | 133.2 | 104.1 | 93.4  | 70.0  |
| 62.5° | 7979.4 | 6868.7 | 5201.6 | 772.3  | 658.5 | 317.1 | 195.5 | 151.7 | 94.3  | 82.7  | 61.3  |
| 65°   | 7264.6 | 6101.3 | 4336.9 | 498.0  | 499.0 | 352.1 | 171.2 | 148.8 | 88.5  | 72.9  | 52.5  |
| 67.5° | 6147.0 | 5106.3 | 3416.8 | 333.6  | 282.1 | 300.5 | 149.8 | 102.1 | 86.6  | 62.2  | 40.9  |
| 70°   | 4486.7 | 3634.7 | 2224.4 | 222.7  | 168.3 | 240.2 | 125.5 | 72.9  | 81.7  | 51.5  | 29.2  |
| 72.5° | 3279.7 | 2442.3 | 1242.0 | 145.9  | 95.3  | 140.1 | 92.4  | 52.5  | 63.2  | 37.9  | 20.4  |
| 75°   | 2360.6 | 1680.7 | 709.0  | 93.4   | 63.2  | 76.8  | 60.3  | 36.0  | 40.9  | 30.2  | 18.5  |
| 77.5° | 1136.0 | 819.0  | 321.9  | 51.5   | 42.8  | 38.9  | 32.1  | 22.4  | 25.3  | 27.2  | 16.5  |
| 80°   | 42.8   | 32.1   | 24.3   | 25.3   | 27.2  | 17.5  | 14.6  | 11.7  | 14.6  | 18.5  | 8.8   |
| 82.5° | 0.0    | 0.0    | 0.0    | 2.9    | 3.9   | 4.9   | 5.8   | 4.9   | 5.8   | 6.8   | 1.0   |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 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   | 0.0   |

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**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 |
| 2.5°  | 394.9 | 392.9 | 394.9 | 396.8 | 398.8 | 400.7 | 397.8 | 399.7 | 401.7 | 396.8 | 398.8 |
| 5°    | 363.8 | 362.8 | 368.6 | 371.5 | 375.4 | 377.4 | 375.4 | 375.4 | 374.5 | 368.6 | 368.6 |
| 7.5°  | 336.5 | 337.5 | 342.4 | 349.2 | 354.0 | 357.0 | 355.0 | 354.0 | 351.1 | 342.4 | 342.4 |
| 10°   | 316.1 | 316.1 | 323.9 | 329.7 | 336.5 | 339.4 | 337.5 | 334.6 | 331.7 | 322.9 | 321.9 |
| 12.5° | 299.6 | 299.6 | 305.4 | 315.1 | 322.9 | 326.8 | 325.8 | 321.9 | 317.1 | 308.3 | 307.4 |
| 15°   | 284.0 | 283.0 | 291.8 | 300.5 | 311.2 | 316.1 | 314.2 | 311.2 | 302.5 | 294.7 | 292.8 |
| 17.5° | 268.4 | 267.5 | 275.3 | 286.9 | 298.6 | 305.4 | 304.4 | 297.6 | 289.8 | 280.1 | 278.2 |
| 20°   | 252.9 | 250.9 | 260.7 | 272.3 | 284.0 | 290.8 | 288.9 | 283.0 | 273.3 | 263.6 | 261.6 |
| 22.5° | 237.3 | 236.3 | 243.2 | 252.9 | 263.6 | 269.4 | 268.4 | 263.6 | 253.9 | 245.1 | 245.1 |
| 25°   | 219.8 | 219.8 | 224.7 | 231.5 | 239.3 | 242.2 | 243.2 | 241.2 | 235.4 | 230.5 | 230.5 |
| 27.5° | 205.2 | 202.3 | 204.3 | 206.2 | 210.1 | 215.0 | 215.0 | 216.9 | 217.9 | 215.9 | 216.9 |
| 30°   | 193.6 | 188.7 | 185.8 | 181.9 | 179.9 | 181.9 | 183.8 | 190.6 | 197.4 | 201.3 | 203.3 |
| 32.5° | 179.9 | 174.1 | 166.3 | 155.6 | 148.8 | 146.9 | 152.7 | 165.3 | 178.0 | 186.7 | 191.6 |
| 35°   | 166.3 | 158.5 | 143.9 | 128.4 | 119.6 | 116.7 | 123.5 | 138.1 | 156.6 | 172.2 | 179.0 |
| 37.5° | 152.7 | 142.0 | 121.6 | 103.1 | 93.4  | 91.4  | 98.2  | 113.8 | 135.2 | 156.6 | 165.3 |
| 40°   | 137.1 | 124.5 | 100.2 | 80.7  | 72.9  | 71.0  | 76.8  | 92.4  | 114.8 | 139.1 | 152.7 |
| 42.5° | 121.6 | 106.0 | 80.7  | 64.2  | 56.4  | 56.4  | 64.2  | 75.9  | 96.3  | 122.6 | 139.1 |
| 45°   | 106.0 | 89.5  | 66.1  | 51.5  | 46.7  | 47.7  | 52.5  | 64.2  | 80.7  | 108.0 | 123.5 |
| 47.5° | 91.4  | 76.8  | 54.5  | 42.8  | 38.9  | 39.9  | 45.7  | 55.4  | 69.1  | 93.4  | 109.9 |
| 50°   | 78.8  | 65.2  | 47.7  | 36.0  | 33.1  | 35.0  | 40.9  | 49.6  | 61.3  | 82.7  | 96.3  |
| 52.5° | 71.0  | 58.4  | 43.8  | 31.1  | 29.2  | 31.1  | 37.0  | 44.7  | 55.4  | 72.9  | 86.6  |
| 55°   | 67.1  | 57.4  | 43.8  | 28.2  | 25.3  | 27.2  | 33.1  | 40.9  | 49.6  | 66.1  | 77.8  |
| 57.5° | 66.1  | 59.3  | 46.7  | 25.3  | 21.4  | 23.3  | 29.2  | 37.0  | 45.7  | 60.3  | 70.0  |
| 60°   | 62.2  | 56.4  | 45.7  | 20.4  | 16.5  | 19.5  | 24.3  | 32.1  | 41.8  | 56.4  | 65.2  |
| 62.5° | 54.5  | 49.6  | 39.9  | 16.5  | 12.6  | 14.6  | 20.4  | 28.2  | 37.9  | 51.5  | 61.3  |
| 65°   | 44.7  | 39.9  | 31.1  | 10.7  | 7.8   | 9.7   | 15.6  | 24.3  | 33.1  | 46.7  | 55.4  |
| 67.5° | 33.1  | 28.2  | 21.4  | 6.8   | 3.9   | 6.8   | 12.6  | 20.4  | 30.2  | 41.8  | 50.6  |
| 70°   | 20.4  | 16.5  | 11.7  | 3.9   | 2.9   | 5.8   | 11.7  | 19.5  | 27.2  | 38.9  | 47.7  |
| 72.5° | 11.7  | 7.8   | 4.9   | 1.9   | 2.9   | 5.8   | 11.7  | 19.5  | 26.3  | 37.0  | 44.7  |
| 75°   | 8.8   | 4.9   | 1.9   | 1.0   | 1.9   | 4.9   | 10.7  | 17.5  | 25.3  | 35.0  | 42.8  |
| 77.5° | 5.8   | 2.9   | 1.0   | 0.0   | 1.0   | 3.9   | 9.7   | 16.5  | 23.3  | 33.1  | 40.9  |
| 80°   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 2.9   | 8.8   | 14.6  | 21.4  | 29.2  | 36.0  |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 1.0   | 6.8   | 12.6  | 18.5  | 24.3  | 29.2  |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 3.9   | 9.7   | 14.6  | 18.5  | 20.4  |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 4.9   | 9.7   | 11.7  | 13.6  |
| 90°   | 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):**

|       | 185°  | 195°  | 205°  | 215°  | 225°  | 235°  | 245°  | 255°   | 265°   | 270°   | 275°   |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0°    | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0 | 426.0  | 426.0  | 426.0  | 426.0  |
| 2.5°  | 397.8 | 403.6 | 403.6 | 407.5 | 412.4 | 421.1 | 426.0 | 432.8  | 437.7  | 442.5  | 444.5  |
| 5°    | 367.7 | 368.6 | 369.6 | 371.5 | 377.4 | 387.1 | 395.9 | 406.6  | 419.2  | 428.9  | 434.8  |
| 7.5°  | 342.4 | 342.4 | 342.4 | 345.3 | 351.1 | 357.9 | 366.7 | 381.3  | 395.9  | 407.5  | 417.3  |
| 10°   | 321.0 | 323.9 | 324.9 | 329.7 | 336.5 | 345.3 | 355.0 | 367.7  | 384.2  | 399.7  | 417.3  |
| 12.5° | 307.4 | 310.3 | 315.1 | 320.0 | 326.8 | 336.5 | 347.2 | 363.8  | 397.8  | 429.9  | 466.9  |
| 15°   | 294.7 | 298.6 | 304.4 | 311.2 | 319.0 | 329.7 | 341.4 | 375.4  | 455.2  | 515.5  | 573.8  |
| 17.5° | 281.1 | 286.9 | 294.7 | 301.5 | 311.2 | 322.9 | 337.5 | 403.6  | 560.2  | 660.4  | 759.6  |
| 20°   | 263.6 | 271.4 | 280.1 | 290.8 | 302.5 | 316.1 | 337.5 | 462.0  | 712.0  | 855.9  | 987.2  |
| 22.5° | 247.0 | 254.8 | 265.5 | 279.1 | 292.8 | 306.4 | 342.4 | 550.5  | 907.5  | 1089.3 | 1255.7 |
| 25°   | 233.4 | 243.2 | 253.9 | 265.5 | 281.1 | 296.7 | 354.0 | 675.0  | 1142.8 | 1377.2 | 1494.9 |
| 27.5° | 220.8 | 232.5 | 243.2 | 252.9 | 266.5 | 284.0 | 380.3 | 841.3  | 1421.0 | 1659.3 | 1751.7 |
| 30°   | 208.1 | 221.8 | 232.5 | 242.2 | 255.8 | 274.3 | 420.2 | 1053.4 | 1730.3 | 1961.8 | 1971.5 |
| 32.5° | 197.4 | 210.1 | 222.7 | 232.5 | 245.1 | 266.5 | 475.6 | 1301.4 | 2047.4 | 2271.1 | 2179.7 |
| 35°   | 185.8 | 200.4 | 212.0 | 222.7 | 236.3 | 259.7 | 539.8 | 1568.8 | 2367.4 | 2555.1 | 2386.8 |
| 37.5° | 174.1 | 190.6 | 205.2 | 213.0 | 226.6 | 252.9 | 586.5 | 1848.0 | 2694.2 | 2832.3 | 2568.7 |
| 40°   | 163.4 | 181.9 | 198.4 | 206.2 | 213.0 | 244.1 | 593.3 | 2133.9 | 3025.8 | 3105.6 | 2739.9 |
| 42.5° | 151.7 | 172.2 | 186.7 | 197.4 | 203.3 | 238.3 | 552.5 | 2375.2 | 3304.0 | 3377.9 | 2963.6 |
| 45°   | 139.1 | 163.4 | 175.1 | 182.9 | 194.5 | 242.2 | 499.9 | 2561.9 | 3622.1 | 3749.5 | 3332.2 |
| 47.5° | 126.4 | 153.7 | 163.4 | 169.2 | 184.8 | 265.5 | 480.5 | 2686.4 | 4146.3 | 4410.9 | 3953.7 |
| 50°   | 114.8 | 144.9 | 155.6 | 154.6 | 182.9 | 295.7 | 501.9 | 2780.7 | 4934.1 | 5245.4 | 4805.7 |
| 52.5° | 102.1 | 135.2 | 147.8 | 143.9 | 197.4 | 319.0 | 544.7 | 2855.6 | 5540.1 | 6223.8 | 5950.5 |
| 55°   | 91.4  | 124.5 | 136.2 | 135.2 | 224.7 | 336.5 | 577.7 | 2460.7 | 5791.0 | 7133.2 | 7240.2 |
| 57.5° | 83.6  | 112.8 | 122.6 | 139.1 | 242.2 | 336.5 | 668.2 | 1746.8 | 5795.9 | 7802.4 | 8952.1 |
| 60°   | 76.8  | 102.1 | 108.9 | 152.7 | 235.4 | 319.0 | 661.4 | 1069.9 | 5341.7 | 7756.7 | 9862.4 |
| 62.5° | 71.0  | 92.4  | 101.2 | 156.6 | 208.1 | 316.1 | 597.2 | 663.3  | 4555.8 | 7166.3 | 9202.0 |
| 65°   | 66.1  | 84.6  | 97.3  | 143.9 | 188.7 | 338.5 | 402.7 | 476.6  | 3695.0 | 6493.3 | 8444.3 |
| 67.5° | 61.3  | 77.8  | 103.1 | 117.7 | 171.2 | 302.5 | 290.8 | 338.5  | 2900.4 | 5755.0 | 7748.9 |
| 70°   | 57.4  | 73.9  | 108.9 | 96.3  | 149.8 | 236.3 | 206.2 | 256.8  | 2220.5 | 4801.9 | 6769.5 |
| 72.5° | 54.5  | 69.1  | 91.4  | 75.9  | 121.6 | 182.9 | 143.9 | 186.7  | 1451.2 | 3748.5 | 5518.7 |
| 75°   | 51.5  | 63.2  | 67.1  | 61.3  | 90.5  | 119.6 | 108.9 | 125.5  | 864.7  | 2739.9 | 4187.2 |
| 77.5° | 50.6  | 59.3  | 54.5  | 49.6  | 61.3  | 71.0  | 82.7  | 84.6   | 422.1  | 1370.4 | 2194.2 |
| 80°   | 44.7  | 53.5  | 46.7  | 40.9  | 41.8  | 46.7  | 61.3  | 56.4   | 96.3   | 348.2  | 585.5  |
| 82.5° | 35.0  | 41.8  | 38.9  | 34.0  | 34.0  | 34.0  | 40.9  | 37.9   | 31.1   | 156.6  | 264.6  |
| 85°   | 24.3  | 29.2  | 29.2  | 27.2  | 26.3  | 26.3  | 25.3  | 24.3   | 8.8    | 9.7    | 14.6   |
| 87.5° | 16.5  | 20.4  | 21.4  | 20.4  | 17.5  | 15.6  | 13.6  | 11.7   | 3.9    | 0.0    | 1.9    |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    |

REPORT NUMBER: P633641

CATALOG NUMBER: GWS-SA2F-727-U-SLL-W-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°    | 315°    | 325°    | 335°   | 345°    | 355°    | 358°   | 360°   |
|-------|--------|--------|---------|---------|---------|--------|---------|---------|--------|--------|
| 0°    | 426.0  | 426.0  | 426.0   | 426.0   | 426.0   | 426.0  | 426.0   | 426.0   | 426.0  | 426.0  |
| 2.5°  | 451.3  | 454.2  | 454.2   | 450.3   | 447.4   | 439.6  | 431.8   | 424.1   | 422.1  | 421.1  |
| 5°    | 451.3  | 463.0  | 468.8   | 467.8   | 461.0   | 448.4  | 431.8   | 414.3   | 409.5  | 407.5  |
| 7.5°  | 444.5  | 466.9  | 484.4   | 487.3   | 474.6   | 452.3  | 422.1   | 395.9   | 389.1  | 386.1  |
| 10°   | 460.1  | 503.8  | 538.8   | 543.7   | 529.1   | 485.3  | 436.7   | 392.0   | 381.3  | 374.5  |
| 12.5° | 543.7  | 615.7  | 658.5   | 678.9   | 650.7   | 595.2  | 514.5   | 434.8   | 410.4  | 399.7  |
| 15°   | 712.9  | 815.1  | 896.8   | 896.8   | 870.5   | 772.3  | 670.1   | 540.8   | 507.7  | 478.5  |
| 17.5° | 929.8  | 1058.2 | 1130.2  | 1122.4  | 1082.5  | 1013.5 | 890.9   | 705.2   | 638.0  | 607.9  |
| 20°   | 1176.9 | 1253.7 | 1270.3  | 1265.4  | 1247.9  | 1208.0 | 1123.4  | 924.0   | 833.5  | 786.9  |
| 22.5° | 1390.9 | 1370.4 | 1346.1  | 1326.7  | 1321.8  | 1333.5 | 1321.8  | 1168.1  | 1097.1 | 1014.4 |
| 25°   | 1535.8 | 1420.0 | 1347.1  | 1312.1  | 1328.6  | 1395.7 | 1468.7  | 1411.3  | 1354.9 | 1269.3 |
| 27.5° | 1614.6 | 1414.2 | 1309.2  | 1273.2  | 1301.4  | 1396.7 | 1555.2  | 1652.5  | 1594.1 | 1553.3 |
| 30°   | 1657.4 | 1409.3 | 1284.8  | 1249.8  | 1292.6  | 1412.3 | 1615.5  | 1878.1  | 1880.1 | 1814.9 |
| 32.5° | 1718.6 | 1440.5 | 1289.7  | 1257.6  | 1315.0  | 1458.9 | 1691.4  | 2107.7  | 2164.1 | 2129.1 |
| 35°   | 1787.7 | 1488.1 | 1312.1  | 1282.9  | 1353.9  | 1521.2 | 1776.0  | 2339.2  | 2456.9 | 2445.2 |
| 37.5° | 1852.9 | 1541.6 | 1364.6  | 1336.4  | 1413.2  | 1574.7 | 1857.7  | 2566.8  | 2730.2 | 2771.0 |
| 40°   | 1920.9 | 1616.5 | 1526.1  | 1553.3  | 1596.1  | 1659.3 | 1930.7  | 2764.2  | 3030.7 | 3092.0 |
| 42.5° | 2081.4 | 1876.2 | 2014.3  | 2065.9  | 2071.7  | 1941.4 | 2090.2  | 3017.1  | 3326.4 | 3399.3 |
| 45°   | 2439.3 | 2338.2 | 2734.1  | 2807.0  | 2769.1  | 2374.2 | 2474.4  | 3381.8  | 3739.8 | 3776.7 |
| 47.5° | 2891.6 | 2938.3 | 3719.3  | 3971.2  | 3743.6  | 2884.8 | 2940.3  | 4149.2  | 4496.5 | 4482.8 |
| 50°   | 3418.8 | 3639.6 | 4837.8  | 5432.1  | 4887.5  | 3548.1 | 3477.1  | 5092.7  | 5513.8 | 5472.0 |
| 52.5° | 4042.2 | 4454.6 | 6182.0  | 7026.3  | 6510.8  | 4294.1 | 4265.0  | 6342.5  | 6599.3 | 6466.0 |
| 55°   | 4827.1 | 5241.5 | 7728.5  | 8908.3  | 8174.9  | 5204.5 | 5304.7  | 7791.7  | 7841.3 | 7418.2 |
| 57.5° | 5998.2 | 6267.6 | 9551.2  | 11066.5 | 9912.0  | 6441.7 | 7168.3  | 9720.4  | 9127.1 | 8325.7 |
| 60°   | 8124.4 | 7587.5 | 11312.6 | 13274.4 | 11760.0 | 8181.7 | 9626.1  | 10863.3 | 9555.1 | 8450.2 |
| 62.5° | 8864.5 | 8707.9 | 12415.6 | 14208.1 | 13003.0 | 9610.5 | 10265.1 | 10215.5 | 9000.7 | 7979.4 |
| 65°   | 7743.1 | 8428.8 | 12218.1 | 13715.0 | 12843.5 | 9375.2 | 9211.7  | 9500.6  | 8376.3 | 7264.6 |
| 67.5° | 7152.7 | 7773.2 | 11470.2 | 12354.3 | 11959.4 | 8576.6 | 8210.9  | 8132.1  | 7032.1 | 6147.0 |
| 70°   | 6557.5 | 7172.2 | 10385.7 | 10495.6 | 10311.8 | 7275.2 | 6794.8  | 6266.6  | 5256.1 | 4486.7 |
| 72.5° | 5841.6 | 6180.1 | 8881.1  | 8359.7  | 8151.6  | 5714.2 | 5613.0  | 4719.2  | 3940.1 | 3279.7 |
| 75°   | 5094.6 | 4996.4 | 6924.1  | 5737.5  | 5893.1  | 4445.9 | 4740.6  | 3465.5  | 2886.8 | 2360.6 |
| 77.5° | 3705.7 | 3632.8 | 4637.5  | 3484.9  | 3859.4  | 2912.0 | 2616.4  | 1383.1  | 1316.9 | 1136.0 |
| 80°   | 2067.8 | 2492.8 | 2504.5  | 1953.0  | 2436.4  | 1898.6 | 654.6   | 45.7    | 29.2   | 42.8   |
| 82.5° | 961.0  | 1071.8 | 1357.8  | 905.5   | 1389.9  | 940.5  | 135.2   | 0.0     | 0.0    | 0.0    |
| 85°   | 311.2  | 455.2  | 381.3   | 133.2   | 336.5   | 318.0  | 22.4    | 0.0     | 0.0    | 0.0    |
| 87.5° | 18.5   | 37.9   | 9.7     | 0.0     | 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    |

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-1-R4

Test Date: 08/20/2019

Luminaire Tested: SA1C-727-U-5WQ

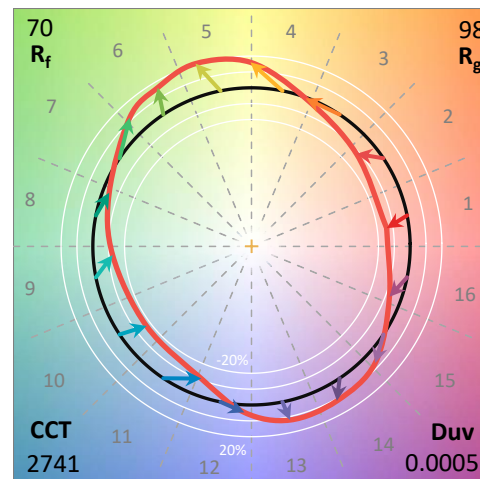
### Test Information

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-1-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-727-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

\*\*\*THIS IS A REVISION OF SP1-1908-441-1-R3. TO UPDATE THE CATALOG NUMBER. \*\*\*TESTED IN SITU. (1) 70 CRI, 2700K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

### Spectral Parameters

|                           |        |           |      |      |       |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K):                  | 2741   | CRI (Ra): | 71.5 |      |       |
| CIE u':                   | 0.2605 | R1:       | 69.2 | R9:  | -16.1 |
| CIE v':                   | 0.5272 | R2:       | 79.4 | R10: | 51.4  |
| Duv:                      | 0.0005 | R3:       | 87.8 | R11: | 63.1  |
| CIE x:                    | 0.4573 | R4:       | 69.4 | R12: | 42.0  |
| CIE y:                    | 0.4113 | R5:       | 66.4 | R13: | 70.2  |
| CIE z:                    | 0.1313 | R6:       | 69.8 | R14: | 92.4  |
| Peak Wavelength (nm):     | 602    | R7:       | 79.8 |      |       |
| Dominant Wavelength (nm): | 583    | R8:       | 50.1 |      |       |
| Purity:                   | 61.2   |           |      |      |       |
| Rf:                       | 69.9   |           |      |      |       |
| Rg:                       | 98.3   |           |      |      |       |



### Test Conditions

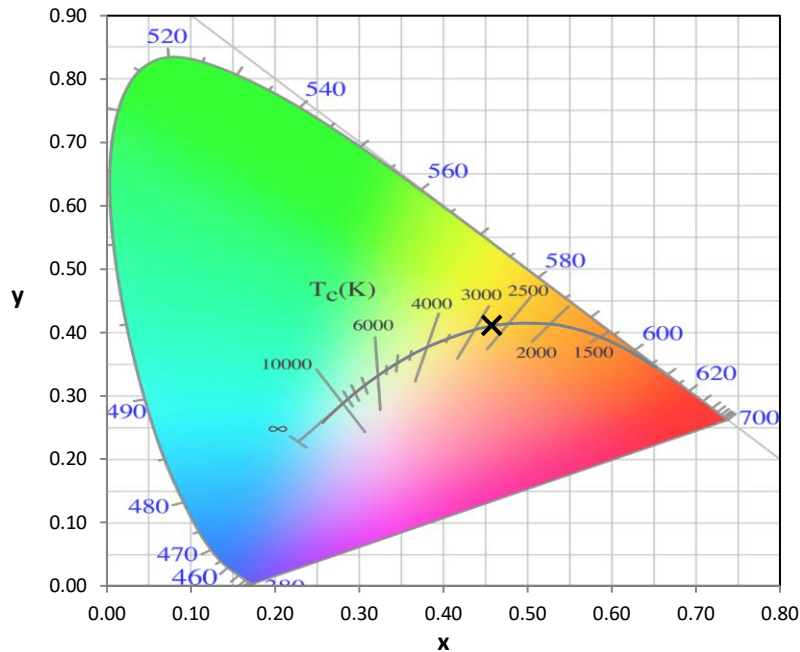
Stabilization Time: 56M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.3./42%  
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-1-R4

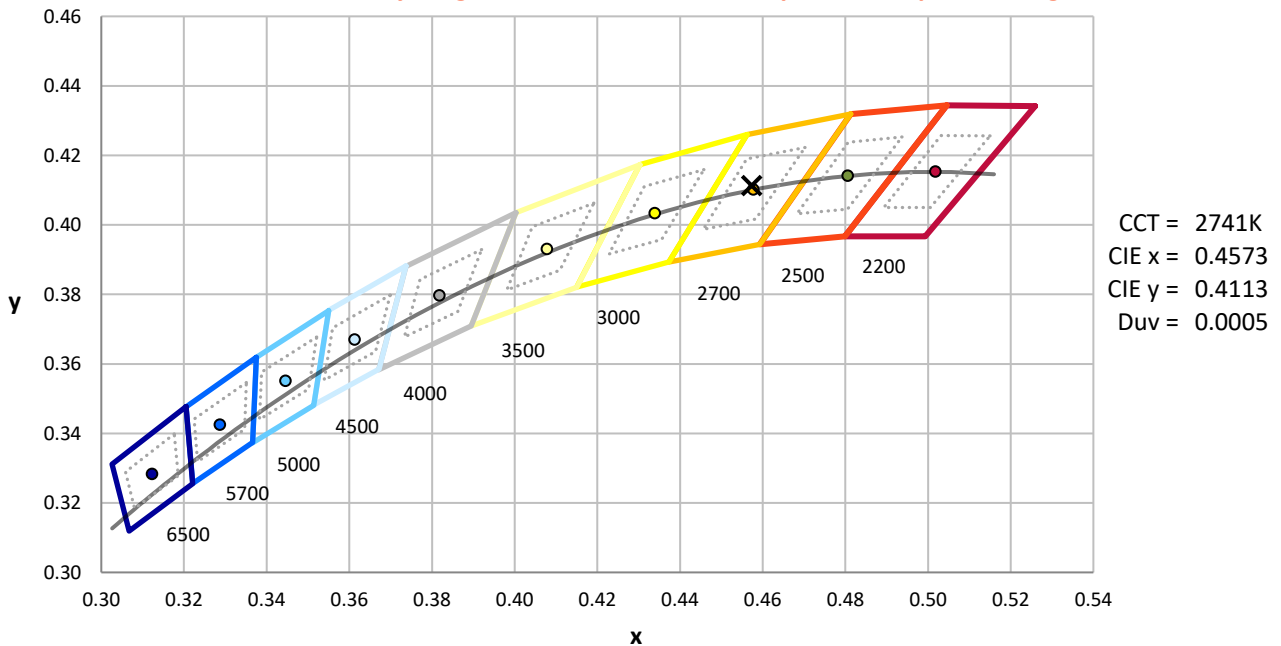
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/28/2019        | 12/28/2019           |
| Power Meter                    | IN0071                | 12/5/2018        | 12/5/2019            |
| AC Power Source                | IN0063                | 12/5/2018        | 12/5/2019            |
| DC Power Source                | IN0208                | 12/5/2018        | 12/5/2019            |
| Sphere Thermometer             | IN0085                | 12/5/2018        | 12/5/2019            |
| Room Thermometer               | IN0046                | 12/5/2018        | 12/5/2019            |

REPORT NUMBER: SP1-1908-441-1-R4

CIE 1931 Chromaticity Diagram



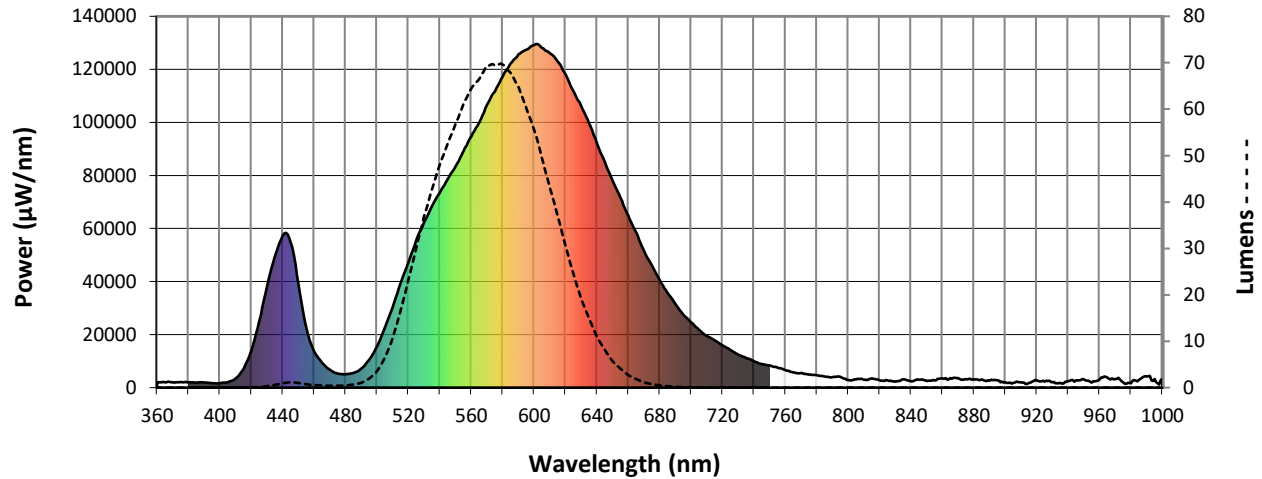
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-1-R4

**Photopic Flux vs. Wavelength**

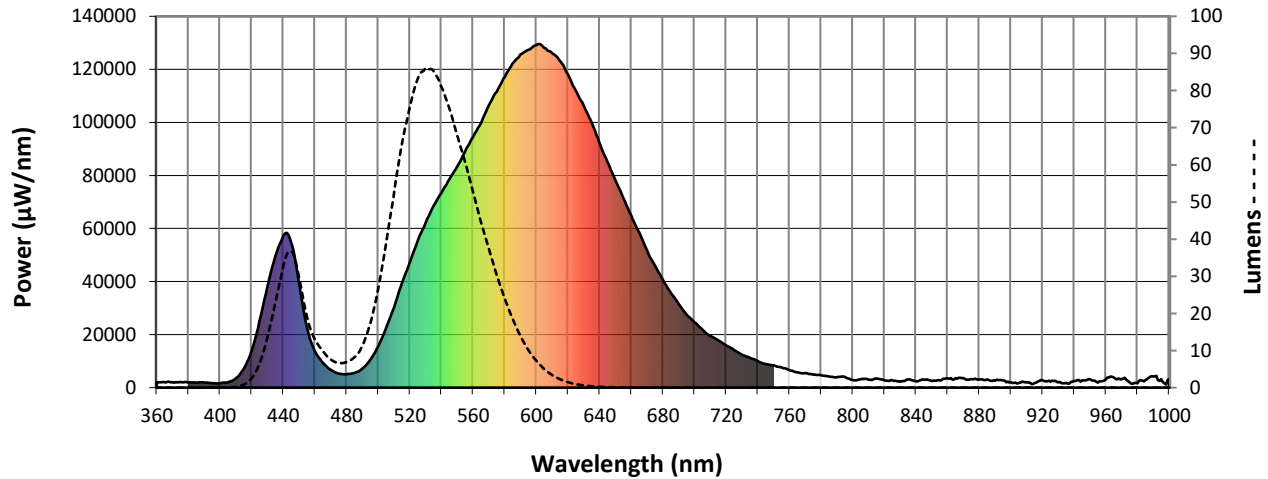


**Photopic Lumens: 6211.7**

| 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       | 2044             | 0.0              | 490       | 7179             | 1.0              | 620       | 118034           | 30.7             | 750       | 8362             | 0.0              | 880       | 3128             | 0.0              |
| 365       | 2016             | 0.0              | 495       | 10476            | 1.9              | 625       | 111884           | 24.7             | 755       | 7635             | 0.0              | 885       | 3110             | 0.0              |
| 370       | 2020             | 0.0              | 500       | 15549            | 3.4              | 630       | 106119           | 19.2             | 760       | 6582             | 0.0              | 890       | 2632             | 0.0              |
| 375       | 2137             | 0.0              | 505       | 22477            | 6.3              | 635       | 99706            | 15.0             | 765       | 5777             | 0.0              | 895       | 2709             | 0.0              |
| 380       | 2046             | 0.0              | 510       | 30417            | 10.4             | 640       | 92142            | 11.0             | 770       | 5474             | 0.0              | 900       | 2016             | 0.0              |
| 385       | 1925             | 0.0              | 515       | 39274            | 16.3             | 645       | 84987            | 8.2              | 775       | 4977             | 0.0              | 905       | 1748             | 0.0              |
| 390       | 1893             | 0.0              | 520       | 47282            | 22.9             | 650       | 78016            | 5.7              | 780       | 4723             | 0.0              | 910       | 2046             | 0.0              |
| 395       | 1695             | 0.0              | 525       | 55413            | 29.7             | 655       | 71541            | 4.1              | 785       | 4219             | 0.0              | 915       | 1844             | 0.0              |
| 400       | 1633             | 0.0              | 530       | 62377            | 36.7             | 660       | 64863            | 2.7              | 790       | 3969             | 0.0              | 920       | 2734             | 0.0              |
| 405       | 2065             | 0.0              | 535       | 68520            | 42.5             | 665       | 58485            | 1.9              | 795       | 4122             | 0.0              | 925       | 2307             | 0.0              |
| 410       | 3449             | 0.0              | 540       | 73435            | 47.8             | 670       | 51641            | 1.1              | 800       | 2864             | 0.0              | 930       | 2039             | 0.0              |
| 415       | 7117             | 0.0              | 545       | 78677            | 52.4             | 675       | 46030            | 0.8              | 805       | 3151             | 0.0              | 935       | 1784             | 0.0              |
| 420       | 13992            | 0.0              | 550       | 83331            | 56.6             | 680       | 40590            | 0.5              | 810       | 3022             | 0.0              | 940       | 2464             | 0.0              |
| 425       | 25176            | 0.1              | 555       | 89120            | 60.9             | 685       | 35691            | 0.3              | 815       | 3471             | 0.0              | 945       | 2794             | 0.0              |
| 430       | 38151            | 0.3              | 560       | 94613            | 64.3             | 690       | 31631            | 0.2              | 820       | 2749             | 0.0              | 950       | 3090             | 0.0              |
| 435       | 49673            | 0.6              | 565       | 99818            | 66.4             | 695       | 27437            | 0.1              | 825       | 2729             | 0.0              | 955       | 1866             | 0.0              |
| 440       | 57273            | 0.9              | 570       | 106526           | 69.3             | 700       | 24589            | 0.1              | 830       | 2282             | 0.0              | 960       | 3110             | 0.0              |
| 445       | 54802            | 1.1              | 575       | 111610           | 69.4             | 705       | 21832            | 0.0              | 835       | 3140             | 0.0              | 965       | 3880             | 0.0              |
| 450       | 39184            | 1.0              | 580       | 117163           | 69.6             | 710       | 19500            | 0.0              | 840       | 2365             | 0.0              | 970       | 3243             | 0.0              |
| 455       | 22506            | 0.8              | 585       | 122201           | 67.9             | 715       | 17870            | 0.0              | 845       | 3024             | 0.0              | 975       | 2014             | 0.0              |
| 460       | 13692            | 0.6              | 590       | 125662           | 65.0             | 720       | 15924            | 0.0              | 850       | 2510             | 0.0              | 980       | 1688             | 0.0              |
| 465       | 9446             | 0.5              | 595       | 127415           | 60.4             | 725       | 14268            | 0.0              | 855       | 2739             | 0.0              | 985       | 2827             | 0.0              |
| 470       | 6698             | 0.4              | 600       | 129155           | 55.7             | 730       | 12438            | 0.0              | 860       | 3515             | 0.0              | 990       | 4172             | 0.0              |
| 475       | 5328             | 0.4              | 605       | 128057           | 49.6             | 735       | 11255            | 0.0              | 865       | 3600             | 0.0              | 995       | 3177             | 0.0              |
| 480       | 5081             | 0.5              | 610       | 126031           | 43.3             | 740       | 9951             | 0.0              | 870       | 3609             | 0.0              | 1000      | 3241             | 0.0              |
| 485       | 5579             | 0.7              | 615       | 123059           | 37.1             | 745       | 8870             | 0.0              | 875       | 3208             | 0.0              |           |                  |                  |

REPORT NUMBER: SP1-1908-441-1-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 6474.3

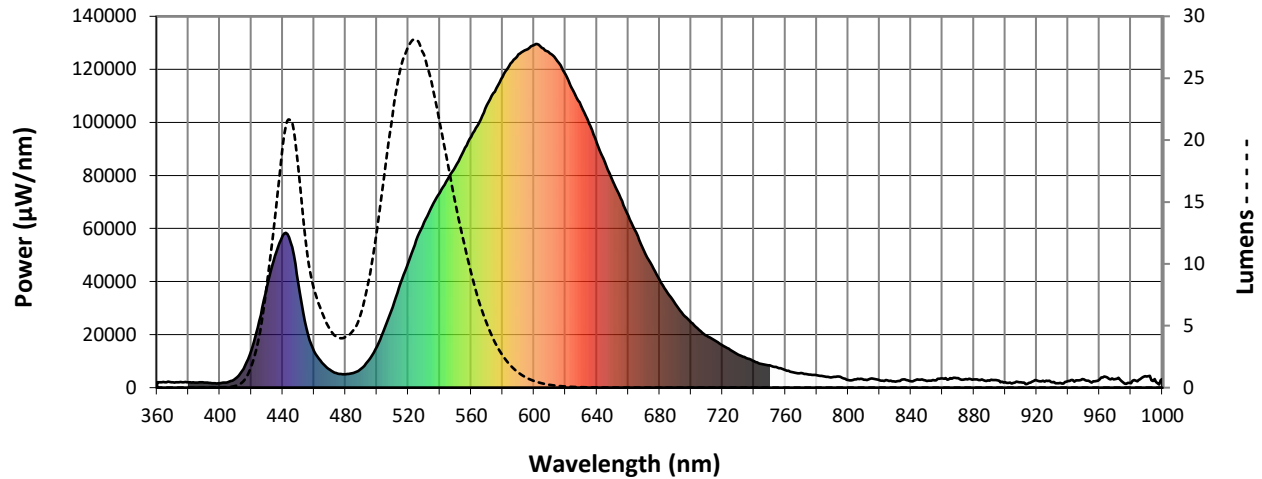
S/P: 1.04

| 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       | 2044             | 0.0              | 490       | 7179             | 6.0              | 620       | 118034           | 0.1              | 750       | 8362             | 0.0              | 880       | 3128             | 0.0              |
| 365       | 2016             | 0.0              | 495       | 10476            | 8.6              | 625       | 111884           | 0.1              | 755       | 7635             | 0.0              | 885       | 3110             | 0.0              |
| 370       | 2020             | 0.0              | 500       | 15549            | 12.5             | 630       | 106119           | 0.0              | 760       | 6582             | 0.0              | 890       | 2632             | 0.0              |
| 375       | 2137             | 0.0              | 505       | 22477            | 17.3             | 635       | 99706            | 0.0              | 765       | 5777             | 0.0              | 895       | 2709             | 0.0              |
| 380       | 2046             | 0.0              | 510       | 30417            | 21.8             | 640       | 92142            | 0.0              | 770       | 5474             | 0.0              | 900       | 2016             | 0.0              |
| 385       | 1925             | 0.0              | 515       | 39274            | 25.7             | 645       | 84987            | 0.0              | 775       | 4977             | 0.0              | 905       | 1748             | 0.0              |
| 390       | 1893             | 0.0              | 520       | 47282            | 27.5             | 650       | 78016            | 0.0              | 780       | 4723             | 0.0              | 910       | 2046             | 0.0              |
| 395       | 1695             | 0.0              | 525       | 55413            | 28.1             | 655       | 71541            | 0.0              | 785       | 4219             | 0.0              | 915       | 1844             | 0.0              |
| 400       | 1633             | 0.0              | 530       | 62377            | 27.0             | 660       | 64863            | 0.0              | 790       | 3969             | 0.0              | 920       | 2734             | 0.0              |
| 405       | 2065             | 0.0              | 535       | 68520            | 24.7             | 665       | 58485            | 0.0              | 795       | 4122             | 0.0              | 925       | 2307             | 0.0              |
| 410       | 3449             | 0.1              | 540       | 73435            | 21.5             | 670       | 51641            | 0.0              | 800       | 2864             | 0.0              | 930       | 2039             | 0.0              |
| 415       | 7117             | 0.5              | 545       | 78677            | 18.3             | 675       | 46030            | 0.0              | 805       | 3151             | 0.0              | 935       | 1784             | 0.0              |
| 420       | 13992            | 1.6              | 550       | 83331            | 15.0             | 680       | 40590            | 0.0              | 810       | 3022             | 0.0              | 940       | 2464             | 0.0              |
| 425       | 25176            | 3.9              | 555       | 89120            | 12.0             | 685       | 35691            | 0.0              | 815       | 3471             | 0.0              | 945       | 2794             | 0.0              |
| 430       | 38151            | 8.1              | 560       | 94613            | 9.3              | 690       | 31631            | 0.0              | 820       | 2749             | 0.0              | 950       | 3090             | 0.0              |
| 435       | 49673            | 13.3             | 565       | 99818            | 7.0              | 695       | 27437            | 0.0              | 825       | 2729             | 0.0              | 955       | 1866             | 0.0              |
| 440       | 57273            | 19.1             | 570       | 106526           | 5.2              | 700       | 24589            | 0.0              | 830       | 2282             | 0.0              | 960       | 3110             | 0.0              |
| 445       | 54802            | 21.6             | 575       | 111610           | 3.7              | 705       | 21832            | 0.0              | 835       | 3140             | 0.0              | 965       | 3880             | 0.0              |
| 450       | 39184            | 18.1             | 580       | 117163           | 2.6              | 710       | 19500            | 0.0              | 840       | 2365             | 0.0              | 970       | 3243             | 0.0              |
| 455       | 22506            | 11.8             | 585       | 122201           | 1.8              | 715       | 17870            | 0.0              | 845       | 3024             | 0.0              | 975       | 2014             | 0.0              |
| 460       | 13692            | 8.1              | 590       | 125662           | 1.2              | 720       | 15924            | 0.0              | 850       | 2510             | 0.0              | 980       | 1688             | 0.0              |
| 465       | 9446             | 6.2              | 595       | 127415           | 0.8              | 725       | 14268            | 0.0              | 855       | 2739             | 0.0              | 985       | 2827             | 0.0              |
| 470       | 6698             | 4.8              | 600       | 129155           | 0.5              | 730       | 12438            | 0.0              | 860       | 3515             | 0.0              | 990       | 4172             | 0.0              |
| 475       | 5328             | 4.1              | 605       | 128057           | 0.4              | 735       | 11255            | 0.0              | 865       | 3600             | 0.0              | 995       | 3177             | 0.0              |
| 480       | 5081             | 4.1              | 610       | 126031           | 0.2              | 740       | 9951             | 0.0              | 870       | 3609             | 0.0              | 1000      | 3241             | 0.0              |
| 485       | 5579             | 4.6              | 615       | 123059           | 0.1              | 745       | 8870             | 0.0              | 875       | 3208             | 0.0              |           |                  |                  |



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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 2145.7 M/P: 0.35**

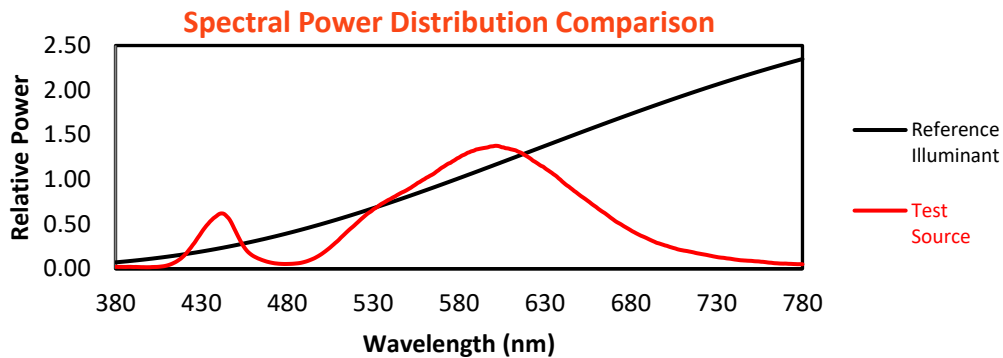
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 2044             | 0.0              | 490       | 7179             | 11.1             | 620       | 118034           | 1.5              | 750       | 8362             | 0.0              | 880       | 3128             | 0.0              |
| 365       | 2016             | 0.0              | 495       | 10476            | 16.9             | 625       | 111884           | 0.9              | 755       | 7635             | 0.0              | 885       | 3110             | 0.0              |
| 370       | 2020             | 0.0              | 500       | 15549            | 26.0             | 630       | 106119           | 0.6              | 760       | 6582             | 0.0              | 890       | 2632             | 0.0              |
| 375       | 2137             | 0.0              | 505       | 22477            | 38.2             | 635       | 99706            | 0.4              | 765       | 5777             | 0.0              | 895       | 2709             | 0.0              |
| 380       | 2046             | 0.0              | 510       | 30417            | 51.6             | 640       | 92142            | 0.2              | 770       | 5474             | 0.0              | 900       | 2016             | 0.0              |
| 385       | 1925             | 0.0              | 515       | 39274            | 65.1             | 645       | 84987            | 0.1              | 775       | 4977             | 0.0              | 905       | 1748             | 0.0              |
| 390       | 1893             | 0.0              | 520       | 47282            | 75.2             | 650       | 78016            | 0.1              | 780       | 4723             | 0.0              | 910       | 2046             | 0.0              |
| 395       | 1695             | 0.0              | 525       | 55413            | 82.9             | 655       | 71541            | 0.1              | 785       | 4219             | 0.0              | 915       | 1844             | 0.0              |
| 400       | 1633             | 0.0              | 530       | 62377            | 86.0             | 660       | 64863            | 0.0              | 790       | 3969             | 0.0              | 920       | 2734             | 0.0              |
| 405       | 2065             | 0.1              | 535       | 68520            | 85.4             | 665       | 58485            | 0.0              | 795       | 4122             | 0.0              | 925       | 2307             | 0.0              |
| 410       | 3449             | 0.2              | 540       | 73435            | 81.1             | 670       | 51641            | 0.0              | 800       | 2864             | 0.0              | 930       | 2039             | 0.0              |
| 415       | 7117             | 0.7              | 545       | 78677            | 75.4             | 675       | 46030            | 0.0              | 805       | 3151             | 0.0              | 935       | 1784             | 0.0              |
| 420       | 13992            | 2.3              | 550       | 83331            | 68.1             | 680       | 40590            | 0.0              | 810       | 3022             | 0.0              | 940       | 2464             | 0.0              |
| 425       | 25176            | 6.2              | 555       | 89120            | 60.9             | 685       | 35691            | 0.0              | 815       | 3471             | 0.0              | 945       | 2794             | 0.0              |
| 430       | 38151            | 13.0             | 560       | 94613            | 52.9             | 690       | 31631            | 0.0              | 820       | 2749             | 0.0              | 950       | 3090             | 0.0              |
| 435       | 49673            | 22.2             | 565       | 99818            | 44.8             | 695       | 27437            | 0.0              | 825       | 2729             | 0.0              | 955       | 1866             | 0.0              |
| 440       | 57273            | 32.0             | 570       | 106526           | 37.6             | 700       | 24589            | 0.0              | 830       | 2282             | 0.0              | 960       | 3110             | 0.0              |
| 445       | 54802            | 36.7             | 575       | 111610           | 30.4             | 705       | 21832            | 0.0              | 835       | 3140             | 0.0              | 965       | 3880             | 0.0              |
| 450       | 39184            | 30.4             | 580       | 117163           | 24.1             | 710       | 19500            | 0.0              | 840       | 2365             | 0.0              | 970       | 3243             | 0.0              |
| 455       | 22506            | 19.7             | 585       | 122201           | 18.7             | 715       | 17870            | 0.0              | 845       | 3024             | 0.0              | 975       | 2014             | 0.0              |
| 460       | 13692            | 13.2             | 590       | 125662           | 14.0             | 720       | 15924            | 0.0              | 850       | 2510             | 0.0              | 980       | 1688             | 0.0              |
| 465       | 9446             | 10.0             | 595       | 127415           | 10.2             | 725       | 14268            | 0.0              | 855       | 2739             | 0.0              | 985       | 2827             | 0.0              |
| 470       | 6698             | 7.7              | 600       | 129155           | 7.3              | 730       | 12438            | 0.0              | 860       | 3515             | 0.0              | 990       | 4172             | 0.0              |
| 475       | 5328             | 6.7              | 605       | 128057           | 5.0              | 735       | 11255            | 0.0              | 865       | 3600             | 0.0              | 995       | 3177             | 0.0              |
| 480       | 5081             | 6.9              | 610       | 126031           | 3.4              | 740       | 9951             | 0.0              | 870       | 3609             | 0.0              | 1000      | 3241             | 0.0              |
| 485       | 5579             | 8.1              | 615       | 123059           | 2.3              | 745       | 8870             | 0.0              | 875       | 3208             | 0.0              |           |                  |                  |

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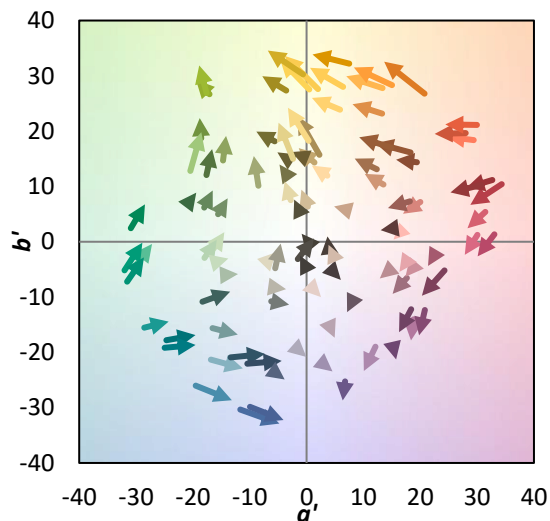
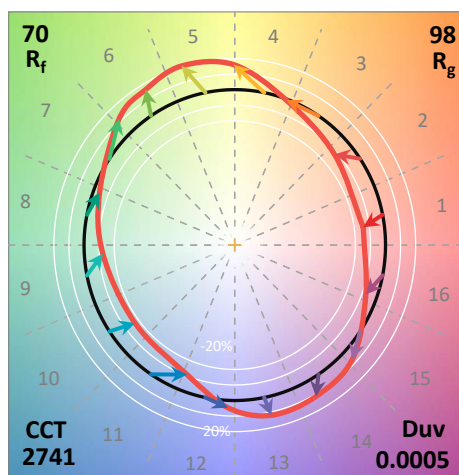
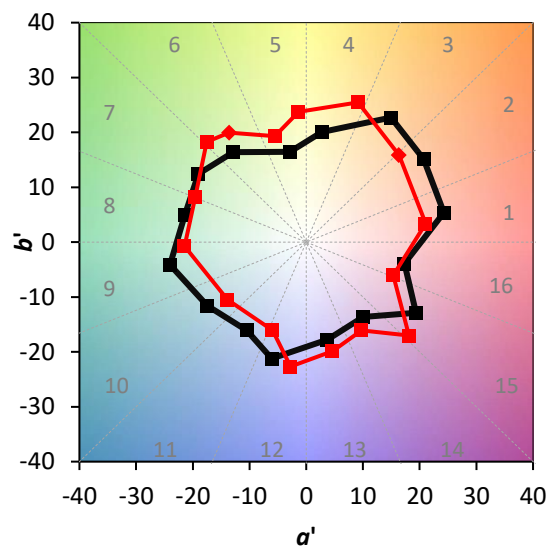
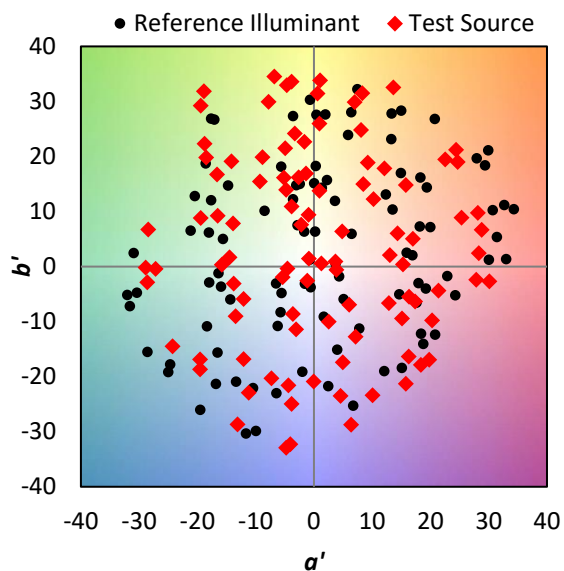
**TM-30-18**

### Summary

$R_f = 69.9$   
 $R_g = 98.3$   
 $CIE R_a = 71.5$   
 $R_g = -16.1$



### Color Vector Graphics

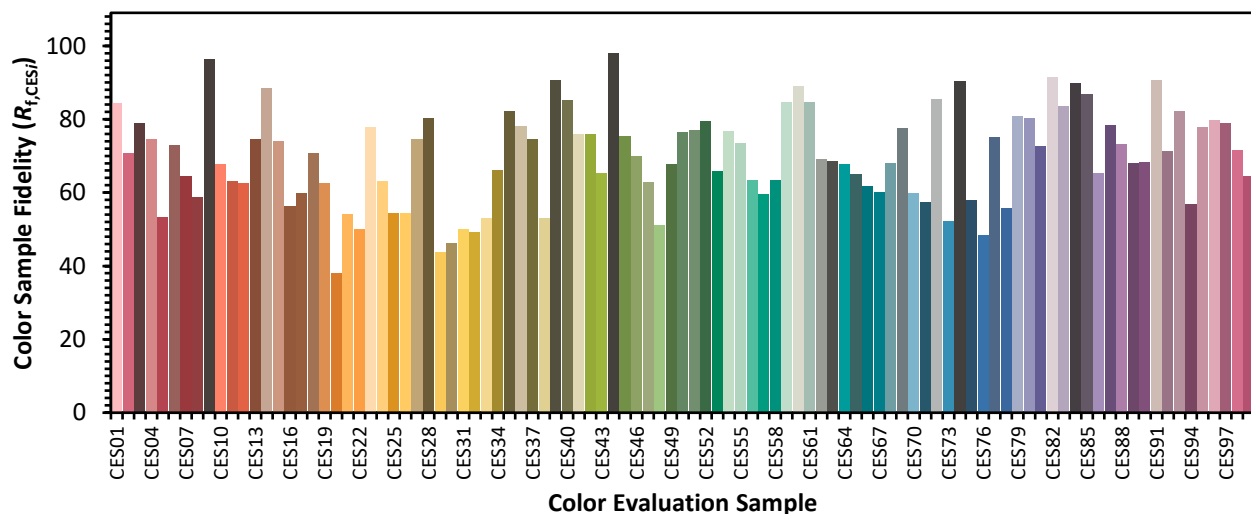


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

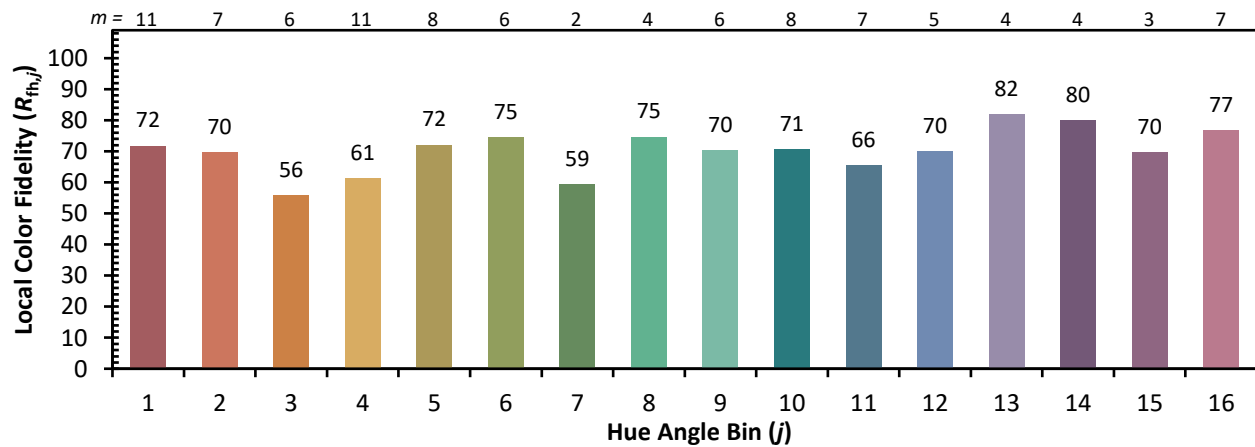
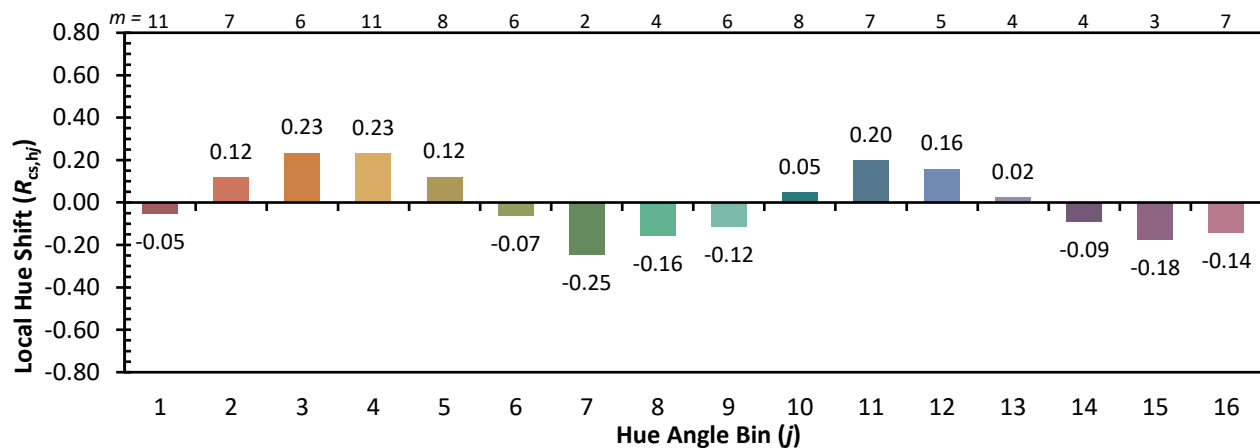
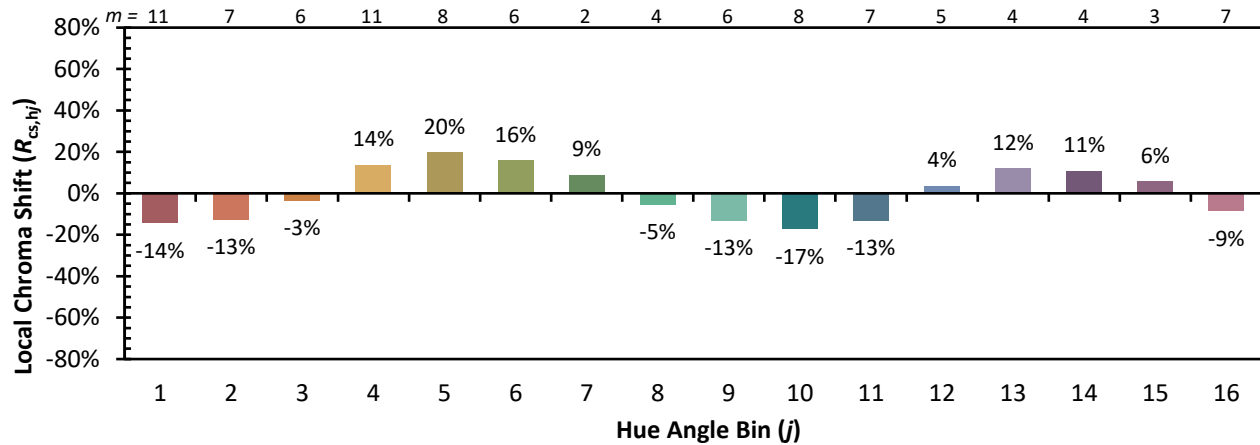
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 54 | CES51 = 77 | CES76 = 48 |
| CES02 = 63 | CES27 = 74 | CES52 = 80 | CES77 = 75 |
| CES03 = 31 | CES28 = 80 | CES53 = 66 | CES78 = 56 |
| CES04 = 71 | CES29 = 44 | CES54 = 77 | CES79 = 81 |
| CES05 = 50 | CES30 = 46 | CES55 = 74 | CES80 = 80 |
| CES06 = 52 | CES31 = 50 | CES56 = 63 | CES81 = 73 |
| CES07 = 42 | CES32 = 49 | CES57 = 60 | CES82 = 91 |
| CES08 = 41 | CES33 = 53 | CES58 = 63 | CES83 = 84 |
| CES09 = 29 | CES34 = 66 | CES59 = 85 | CES84 = 90 |
| CES10 = 77 | CES35 = 82 | CES60 = 89 | CES85 = 87 |
| CES11 = 60 | CES36 = 78 | CES61 = 85 | CES86 = 65 |
| CES12 = 66 | CES37 = 75 | CES62 = 69 | CES87 = 78 |
| CES13 = 43 | CES38 = 53 | CES63 = 68 | CES88 = 73 |
| CES14 = 74 | CES39 = 91 | CES64 = 68 | CES89 = 68 |
| CES15 = 71 | CES40 = 85 | CES65 = 65 | CES90 = 68 |
| CES16 = 48 | CES41 = 76 | CES66 = 62 | CES91 = 91 |
| CES17 = 50 | CES42 = 76 | CES67 = 60 | CES92 = 71 |
| CES18 = 57 | CES43 = 65 | CES68 = 68 | CES93 = 82 |
| CES19 = 73 | CES44 = 98 | CES69 = 77 | CES94 = 57 |
| CES20 = 67 | CES45 = 75 | CES70 = 60 | CES95 = 78 |
| CES21 = 88 | CES46 = 70 | CES71 = 57 | CES96 = 80 |
| CES22 = 80 | CES47 = 63 | CES72 = 86 | CES97 = 79 |
| CES23 = 92 | CES48 = 51 | CES73 = 52 | CES98 = 71 |
| CES24 = 91 | CES49 = 68 | CES74 = 90 | CES99 = 64 |
| CES25 = 73 | CES50 = 77 | CES75 = 58 |            |



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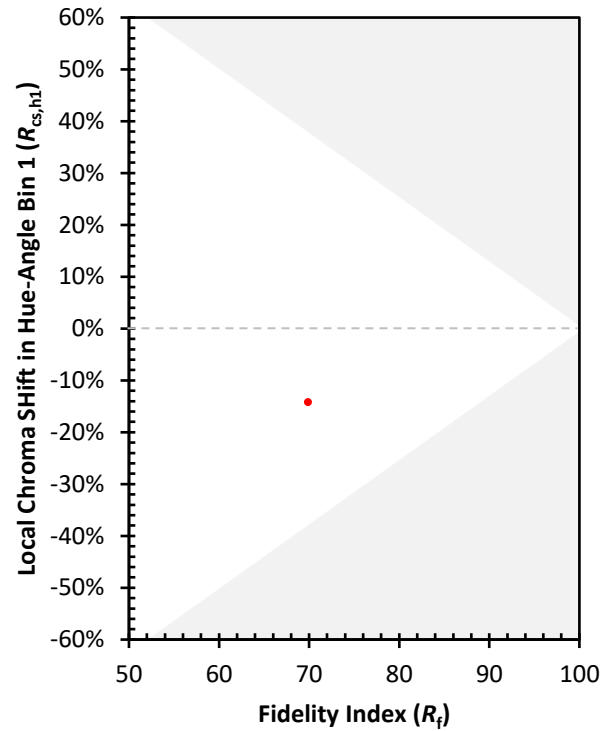
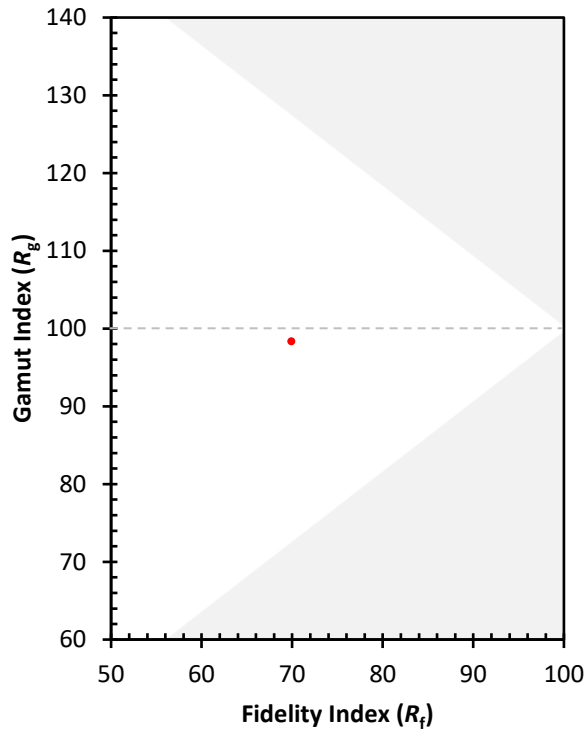
Color Rendition by Hue-Angle Bin



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**Measure Comparisons**



(END OF REPORT)