

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



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: INVUE

Report Number: P822717

Luminaire Tested: **MSA-SA1A-840-U-SLL**

Issue Date: 04/10/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P822717  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-24)  
Test Lab: INNOVATION CENTER  
Issue Date: 04/10/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1A-840-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS  
EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

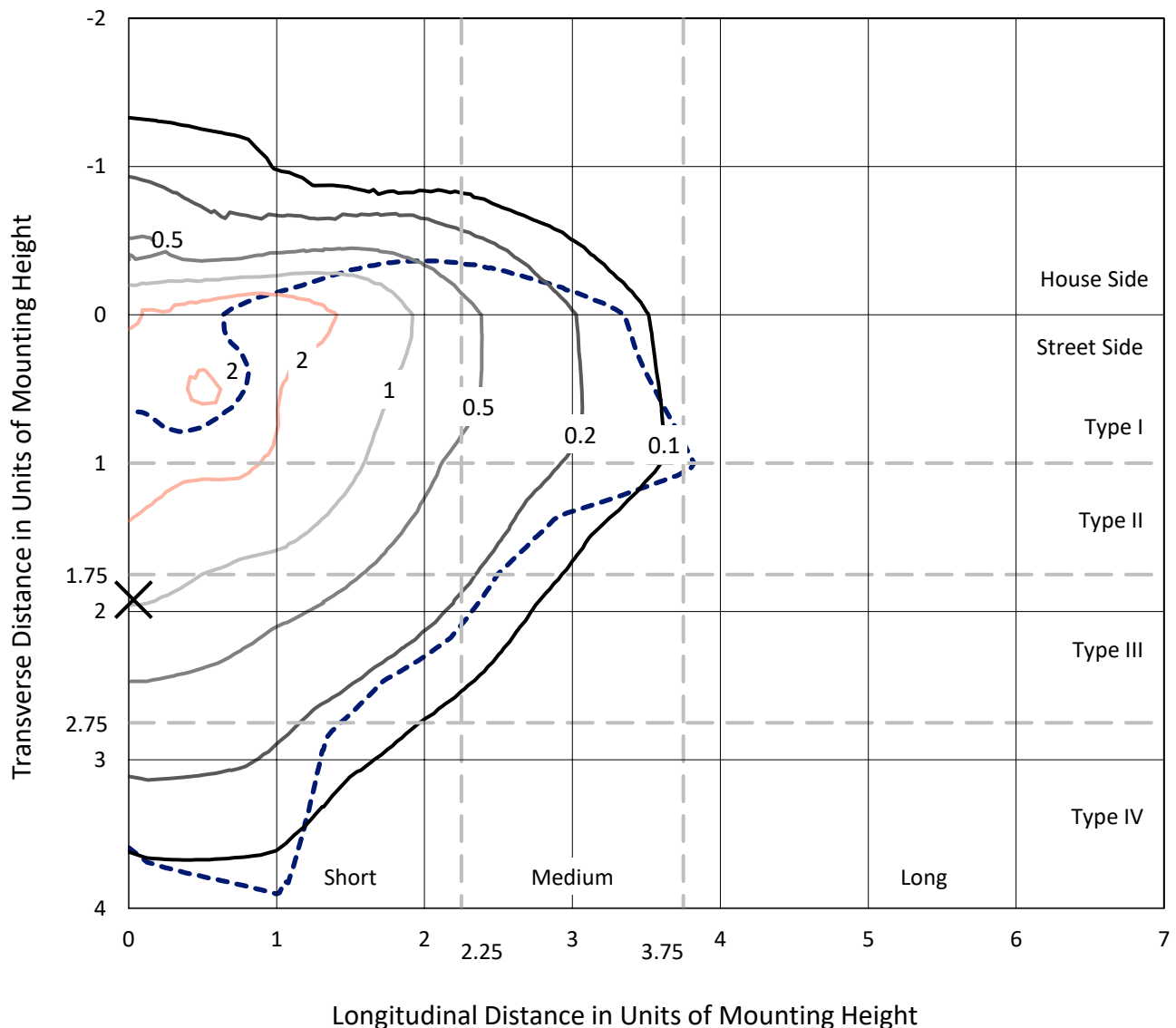
Lumens per Lamp: N/A  
Luminaire Lumens: 2911.2 lumens  
Efficiency: N/A  
Efficacy: 85.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G1

Input Watts (W): 34  
Input Voltage (V): NR  
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: 25 FT

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## Iso-Footcandle Lines of Horizontal Illumination

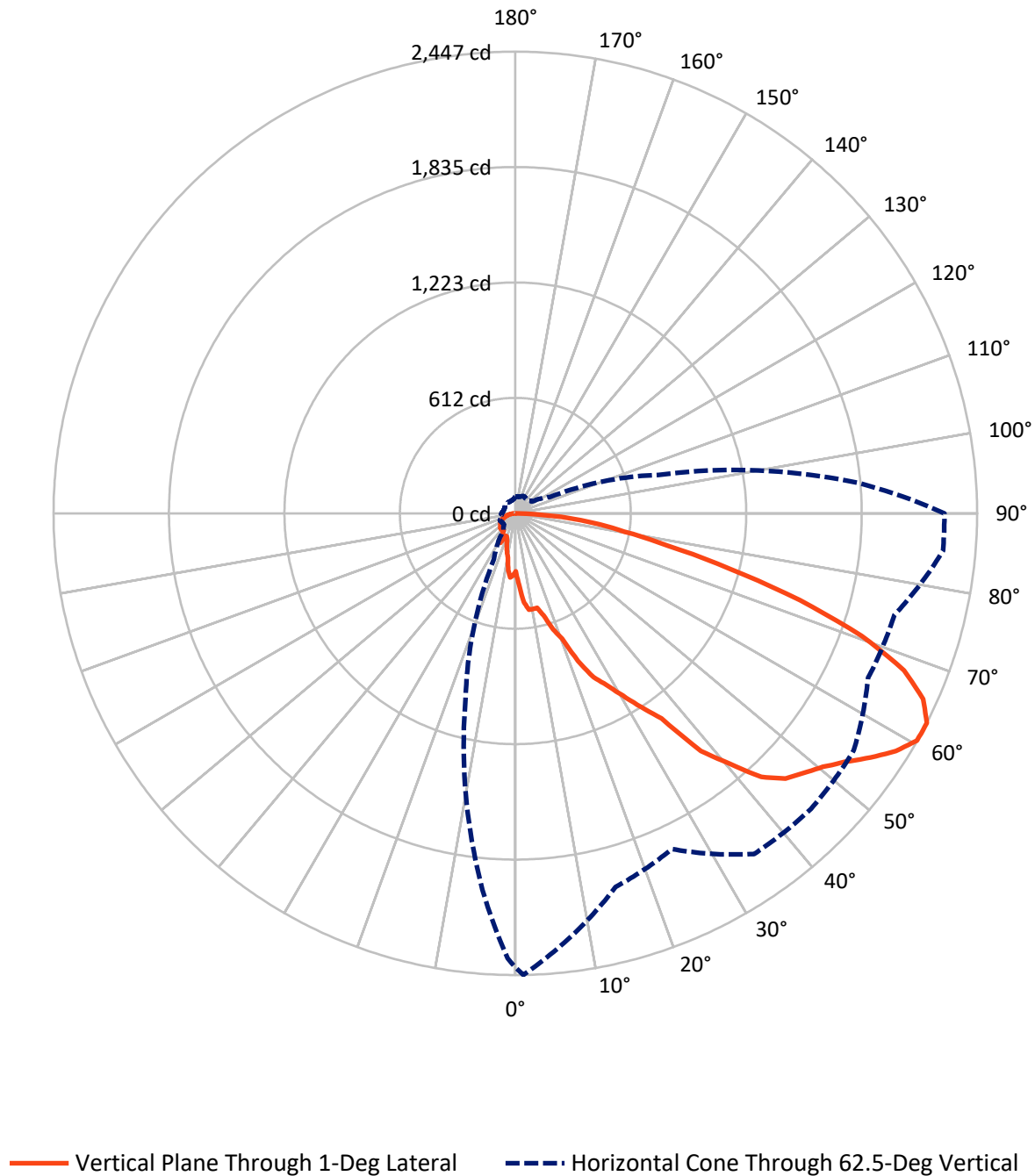
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 3.4 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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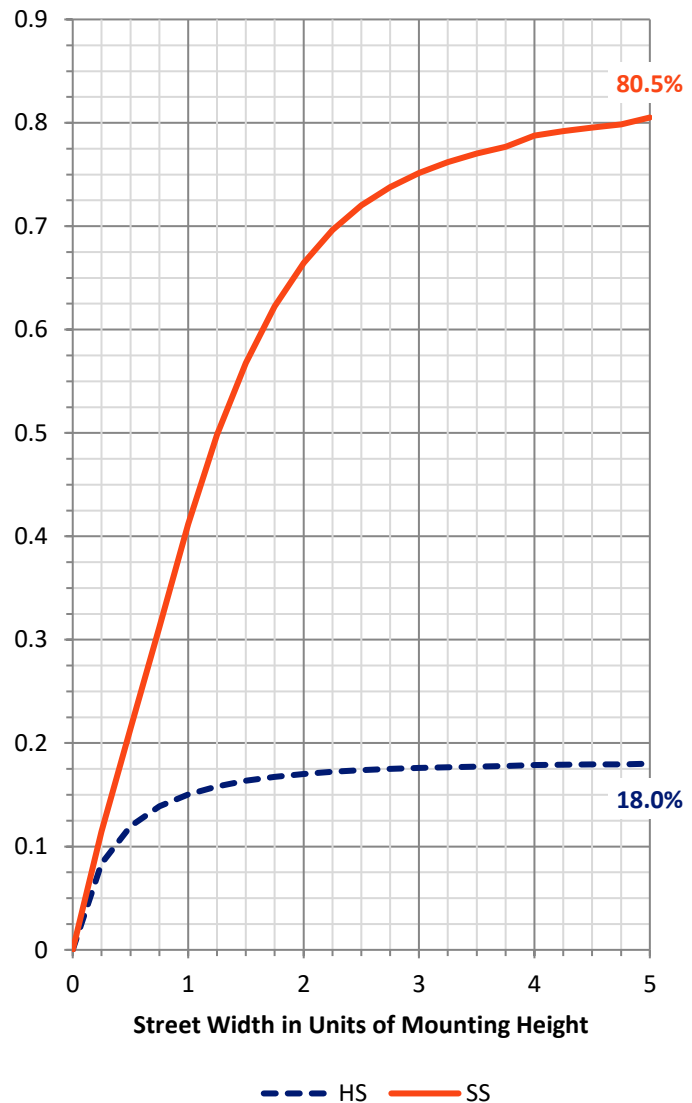
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 530.1    | 0.0    | 530.1  |
|                    | % Fixture | 18.2     | 0.0    | 18.2   |
| <b>Street Side</b> | Lumens    | 2381.1   | 0.0    | 2381.1 |
|                    | % Fixture | 81.8     | 0.0    | 81.8   |
| <b>Total</b>       | Lumens    | 2911.2   | 0.0    | 2911.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 35.2   | 1.2       |
| 10°-20°   | 102.3  | 3.5       |
| 20°-30°   | 180.5  | 6.2       |
| 30°-40°   | 281.2  | 9.7       |
| 40°-50°   | 463.1  | 15.9      |
| 50°-60°   | 660.9  | 22.7      |
| 60°-70°   | 700.8  | 24.1      |
| 70°-80°   | 387.1  | 13.3      |
| 80°-90°   | 100.1  | 3.4       |
| 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°    | 2911.2 | 100.0     |
| 0°-180°   | 2911.2 | 100.0     |

**Coefficient of Utilization**



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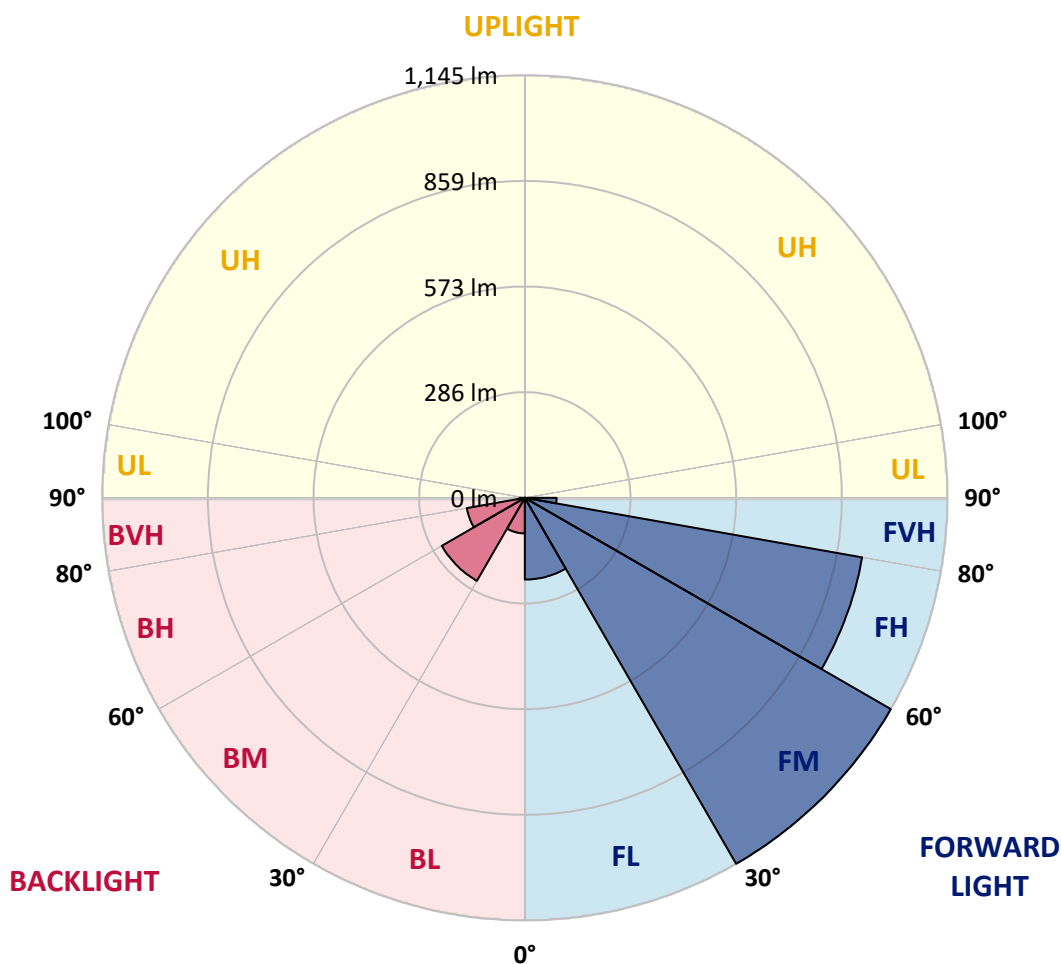
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 221.6  | 7.6       |                         |      |         |
| FM   | (30°-60°)   | 1145.3 | 39.3      |                         |      |         |
| FH   | (60°-80°)   | 928.2  | 31.9      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 86.0   | 3.0       |                         |      | G1/100  |
| BL   | (0°-30°)    | 96.4   | 3.3       | B0/110                  |      |         |
| BM   | (30°-60°)   | 259.9  | 8.9       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 159.7  | 5.5       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 14.1   | 0.5       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  | 307.0  |
| 2.5°  | 377.5  | 380.8  | 374.1  | 366.6  | 335.7  | 365.5  | 356.5  | 373.1  | 367.7  | 331.8  | 397.6  |
| 5°    | 466.4  | 472.4  | 465.9  | 488.4  | 489.8  | 495.5  | 442.1  | 475.4  | 463.8  | 460.8  | 494.0  |
| 7.5°  | 509.4  | 515.5  | 532.0  | 572.0  | 603.3  | 575.0  | 543.7  | 536.8  | 527.7  | 504.2  | 524.2  |
| 10°   | 512.1  | 515.5  | 537.7  | 622.4  | 637.6  | 657.6  | 637.4  | 589.8  | 570.1  | 518.9  | 503.6  |
| 12.5° | 504.0  | 514.6  | 543.3  | 646.6  | 691.6  | 713.4  | 718.4  | 665.4  | 617.2  | 558.7  | 551.0  |
| 15°   | 558.2  | 562.0  | 603.1  | 663.8  | 694.8  | 713.3  | 729.4  | 696.8  | 681.6  | 635.3  | 573.0  |
| 17.5° | 635.7  | 646.3  | 680.0  | 702.4  | 723.3  | 726.9  | 713.6  | 700.8  | 676.8  | 738.7  | 672.5  |
| 20°   | 688.3  | 708.8  | 750.0  | 754.3  | 710.3  | 718.0  | 716.3  | 717.1  | 703.4  | 817.9  | 781.4  |
| 22.5° | 827.3  | 849.5  | 855.1  | 830.6  | 747.7  | 712.3  | 719.4  | 739.8  | 793.8  | 891.9  | 933.1  |
| 25°   | 953.2  | 961.7  | 1013.4 | 950.0  | 818.1  | 740.8  | 729.2  | 782.2  | 870.2  | 1016.5 | 1045.8 |
| 27.5° | 1018.8 | 1030.0 | 1064.3 | 926.6  | 826.9  | 704.1  | 677.0  | 757.7  | 847.4  | 957.8  | 1086.8 |
| 30°   | 1102.9 | 1120.7 | 1167.5 | 950.0  | 853.3  | 728.1  | 668.1  | 745.2  | 844.3  | 996.2  | 1173.6 |
| 32.5° | 1189.5 | 1224.1 | 1258.8 | 1032.7 | 849.6  | 764.9  | 725.0  | 731.2  | 871.3  | 1076.8 | 1263.4 |
| 35°   | 1304.2 | 1334.8 | 1364.7 | 1080.5 | 923.6  | 795.5  | 756.0  | 821.8  | 940.1  | 1170.1 | 1388.7 |
| 37.5° | 1549.4 | 1597.8 | 1518.8 | 1216.4 | 1004.1 | 933.7  | 862.3  | 901.3  | 1013.0 | 1248.0 | 1593.4 |
| 40°   | 1705.7 | 1742.0 | 1665.7 | 1308.9 | 1146.0 | 1026.7 | 1015.1 | 1018.2 | 1113.5 | 1314.7 | 1731.2 |
| 42.5° | 1861.0 | 1910.1 | 1788.8 | 1435.9 | 1317.5 | 1219.1 | 1158.6 | 1154.5 | 1225.9 | 1434.5 | 1887.8 |
| 45°   | 1976.8 | 2005.8 | 1831.1 | 1543.0 | 1501.4 | 1428.4 | 1383.0 | 1311.1 | 1373.7 | 1517.4 | 1984.7 |
| 47.5° | 2031.9 | 2055.5 | 1899.0 | 1605.3 | 1620.7 | 1624.5 | 1706.3 | 1583.7 | 1502.9 | 1573.5 | 2035.6 |
| 50°   | 2100.7 | 2111.8 | 1938.9 | 1660.1 | 1733.9 | 1901.5 | 1921.1 | 1713.3 | 1628.6 | 1634.6 | 2065.7 |
| 52.5° | 2182.9 | 2187.6 | 1997.3 | 1723.3 | 1848.6 | 2083.8 | 2053.4 | 1933.1 | 1748.2 | 1746.4 | 2122.3 |
| 55°   | 2286.3 | 2283.5 | 2070.5 | 1808.5 | 1930.4 | 2192.1 | 2169.1 | 2081.5 | 1878.7 | 1839.0 | 2210.5 |
| 57.5° | 2378.3 | 2376.6 | 2167.5 | 1887.0 | 1999.2 | 2247.8 | 2254.5 | 2231.4 | 1967.4 | 1905.2 | 2306.0 |
| 60°   | 2423.4 | 2445.0 | 2278.0 | 1972.8 | 2003.5 | 2273.0 | 2275.5 | 2238.6 | 2066.5 | 1990.2 | 2331.4 |
| 62.5° | 2405.8 | 2446.9 | 2332.2 | 2049.9 | 1963.2 | 2204.3 | 2214.8 | 2189.5 | 2062.0 | 2079.5 | 2274.6 |
| 65°   | 2326.2 | 2373.6 | 2285.2 | 2091.0 | 1938.5 | 2089.3 | 2091.9 | 2027.7 | 1997.5 | 2138.7 | 2141.5 |
| 67.5° | 2176.7 | 2221.2 | 2135.5 | 2025.4 | 1769.3 | 1779.3 | 1839.2 | 1844.4 | 1800.4 | 2094.1 | 1954.7 |
| 70°   | 1915.1 | 1946.4 | 1892.8 | 1863.5 | 1478.8 | 1420.0 | 1485.0 | 1512.9 | 1533.0 | 1932.9 | 1730.3 |
| 72.5° | 1516.1 | 1576.8 | 1585.2 | 1604.3 | 1190.6 | 1092.7 | 1140.9 | 1099.6 | 1230.3 | 1645.1 | 1413.7 |
| 75°   | 1121.7 | 1172.8 | 1227.8 | 1334.2 | 938.4  | 818.1  | 812.1  | 791.1  | 913.2  | 1323.0 | 1048.5 |
| 77.5° | 792.6  | 825.3  | 867.6  | 1065.8 | 708.2  | 630.1  | 633.7  | 612.4  | 659.4  | 999.9  | 724.3  |
| 80°   | 568.2  | 585.3  | 604.9  | 702.2  | 522.5  | 543.6  | 544.1  | 524.0  | 490.3  | 679.1  | 483.4  |
| 82.5° | 404.9  | 418.2  | 440.6  | 463.1  | 389.5  | 445.6  | 445.2  | 443.9  | 388.7  | 459.0  | 302.5  |
| 85°   | 225.4  | 243.3  | 282.3  | 362.8  | 281.3  | 318.5  | 280.1  | 308.5  | 285.4  | 305.6  | 153.1  |
| 87.5° | 15.8   | 14.1   | 63.2   | 210.2  | 131.3  | 95.9   | 50.3   | 99.6   | 127.7  | 159.6  | 21.4   |
| 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°    | 307.0  | 307.0  | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 |
| 2.5°  | 411.1  | 416.1  | 396.7 | 367.6 | 375.5 | 366.9 | 356.0 | 339.1 | 304.2 | 325.8 | 325.9 |
| 5°    | 493.8  | 474.9  | 459.8 | 445.6 | 421.5 | 385.2 | 380.4 | 351.3 | 334.9 | 343.6 | 342.3 |
| 7.5°  | 519.6  | 492.9  | 470.1 | 419.2 | 374.6 | 318.3 | 301.3 | 284.1 | 276.9 | 297.8 | 306.2 |
| 10°   | 491.2  | 463.3  | 441.1 | 379.0 | 348.8 | 313.7 | 267.0 | 243.1 | 229.0 | 234.5 | 237.7 |
| 12.5° | 514.1  | 485.7  | 415.5 | 380.8 | 331.0 | 309.5 | 268.7 | 233.7 | 212.7 | 217.9 | 211.7 |
| 15°   | 536.2  | 497.8  | 427.6 | 358.7 | 318.3 | 287.2 | 254.1 | 218.0 | 193.4 | 184.7 | 180.0 |
| 17.5° | 616.6  | 553.1  | 426.3 | 346.3 | 299.9 | 264.2 | 224.4 | 184.7 | 168.4 | 159.4 | 151.6 |
| 20°   | 714.8  | 626.2  | 433.8 | 333.4 | 280.4 | 235.4 | 192.0 | 155.2 | 143.8 | 137.9 | 135.7 |
| 22.5° | 831.7  | 720.1  | 477.5 | 331.6 | 262.0 | 214.3 | 174.2 | 151.3 | 138.4 | 131.9 | 129.2 |
| 25°   | 924.5  | 817.1  | 509.7 | 344.0 | 261.1 | 196.9 | 163.5 | 168.1 | 162.2 | 164.1 | 148.5 |
| 27.5° | 1014.6 | 843.5  | 491.6 | 338.5 | 234.8 | 166.2 | 160.9 | 170.6 | 175.7 | 177.3 | 176.8 |
| 30°   | 1090.7 | 955.1  | 495.5 | 307.4 | 198.4 | 135.3 | 123.2 | 128.0 | 141.9 | 164.1 | 168.4 |
| 32.5° | 1202.2 | 1008.6 | 529.3 | 288.6 | 177.3 | 121.1 | 107.5 | 105.7 | 108.9 | 117.0 | 123.9 |
| 35°   | 1332.6 | 1131.4 | 538.8 | 283.6 | 162.7 | 114.7 | 105.3 | 101.0 | 102.7 | 108.8 | 110.2 |
| 37.5° | 1575.8 | 1221.0 | 573.8 | 277.6 | 157.4 | 110.9 | 103.5 | 102.0 | 105.7 | 110.6 | 113.4 |
| 40°   | 1709.8 | 1382.0 | 575.5 | 272.4 | 150.4 | 109.3 | 104.7 | 103.9 | 106.2 | 113.0 | 114.7 |
| 42.5° | 1888.5 | 1473.8 | 602.1 | 266.3 | 148.1 | 111.5 | 107.0 | 106.6 | 108.6 | 112.6 | 115.7 |
| 45°   | 1997.5 | 1535.3 | 603.5 | 262.8 | 147.5 | 120.8 | 109.9 | 108.9 | 108.5 | 110.9 | 113.7 |
| 47.5° | 2067.7 | 1623.9 | 620.8 | 258.8 | 150.9 | 123.2 | 113.4 | 109.2 | 107.8 | 108.8 | 110.9 |
| 50°   | 2134.2 | 1694.7 | 653.4 | 258.2 | 154.4 | 120.8 | 119.7 | 109.1 | 106.2 | 105.8 | 107.4 |
| 52.5° | 2215.9 | 1811.1 | 693.7 | 263.6 | 153.5 | 117.2 | 124.3 | 108.5 | 103.4 | 102.4 | 103.9 |
| 55°   | 2334.7 | 1935.8 | 736.5 | 259.1 | 144.8 | 110.5 | 119.8 | 108.1 | 100.4 | 98.6  | 100.0 |
| 57.5° | 2411.6 | 2007.3 | 784.3 | 255.3 | 131.5 | 105.4 | 115.7 | 108.4 | 100.7 | 96.6  | 97.5  |
| 60°   | 2386.1 | 1968.9 | 803.1 | 232.0 | 119.0 | 101.4 | 106.0 | 106.1 | 98.2  | 94.3  | 95.1  |
| 62.5° | 2273.0 | 1829.7 | 785.6 | 204.8 | 109.7 | 95.8  | 95.9  | 101.8 | 90.8  | 88.1  | 89.3  |
| 65°   | 2115.1 | 1656.7 | 714.7 | 187.2 | 105.3 | 89.8  | 87.6  | 89.4  | 81.0  | 79.0  | 81.2  |
| 67.5° | 1921.3 | 1443.4 | 609.1 | 168.5 | 103.7 | 81.8  | 79.1  | 78.4  | 73.1  | 70.8  | 73.1  |
| 70°   | 1678.2 | 1208.5 | 487.0 | 155.4 | 97.8  | 73.1  | 70.9  | 70.2  | 65.7  | 64.0  | 66.0  |
| 72.5° | 1348.9 | 943.7  | 375.8 | 145.4 | 91.2  | 65.0  | 63.2  | 62.3  | 58.5  | 56.1  | 58.5  |
| 75°   | 959.4  | 721.2  | 279.2 | 130.0 | 82.1  | 56.8  | 54.7  | 53.6  | 50.0  | 47.8  | 49.9  |
| 77.5° | 681.8  | 541.4  | 194.9 | 107.5 | 67.7  | 48.0  | 46.8  | 44.9  | 41.8  | 39.1  | 41.3  |
| 80°   | 504.0  | 386.8  | 125.7 | 82.9  | 51.7  | 38.4  | 37.8  | 36.4  | 33.5  | 30.3  | 31.8  |
| 82.5° | 331.8  | 278.8  | 72.1  | 56.3  | 37.6  | 27.7  | 28.3  | 27.4  | 24.6  | 21.2  | 22.0  |
| 85°   | 148.6  | 165.2  | 38.3  | 30.9  | 24.5  | 16.6  | 18.2  | 17.7  | 15.6  | 12.3  | 12.6  |
| 87.5° | 14.3   | 27.8   | 11.7  | 11.3  | 9.1   | 5.2   | 6.5   | 5.5   | 4.6   | 2.9   | 2.3   |
| 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°    | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 |
| 2.5°  | 330.9 | 311.0 | 291.0 | 303.1 | 303.5 | 306.7 | 307.1 | 295.2 | 304.7 | 312.1 | 319.7 |
| 5°    | 336.1 | 323.1 | 323.8 | 312.1 | 305.8 | 313.9 | 312.2 | 308.9 | 314.7 | 322.8 | 332.6 |
| 7.5°  | 298.2 | 289.8 | 288.3 | 277.0 | 249.7 | 243.5 | 248.7 | 250.8 | 258.5 | 270.9 | 281.4 |
| 10°   | 232.8 | 249.7 | 230.7 | 226.3 | 219.1 | 205.0 | 196.8 | 195.8 | 212.3 | 222.3 | 231.1 |
| 12.5° | 209.8 | 205.5 | 203.3 | 191.3 | 191.3 | 176.3 | 171.5 | 175.9 | 201.3 | 208.5 | 219.8 |
| 15°   | 178.7 | 175.6 | 165.2 | 159.2 | 156.4 | 150.4 | 155.4 | 159.6 | 183.4 | 183.9 | 195.8 |
| 17.5° | 148.3 | 146.5 | 136.6 | 135.5 | 132.7 | 130.0 | 134.6 | 144.8 | 157.7 | 155.4 | 160.9 |
| 20°   | 132.7 | 126.3 | 117.2 | 120.5 | 117.6 | 115.5 | 113.4 | 127.8 | 136.9 | 139.8 | 143.1 |
| 22.5° | 128.7 | 117.1 | 111.8 | 108.8 | 108.9 | 105.5 | 106.0 | 118.0 | 131.7 | 133.5 | 131.5 |
| 25°   | 147.1 | 126.5 | 109.1 | 100.4 | 97.2  | 96.0  | 99.3  | 109.9 | 126.5 | 130.4 | 131.9 |
| 27.5° | 172.0 | 137.3 | 112.3 | 97.6  | 91.2  | 91.7  | 96.4  | 103.7 | 123.2 | 130.3 | 132.1 |
| 30°   | 165.2 | 129.2 | 112.4 | 95.5  | 87.5  | 90.4  | 92.1  | 99.1  | 120.7 | 131.3 | 140.4 |
| 32.5° | 127.4 | 116.1 | 113.2 | 97.2  | 93.9  | 89.3  | 91.7  | 98.5  | 113.2 | 119.8 | 120.2 |
| 35°   | 108.0 | 99.3  | 97.4  | 93.3  | 88.9  | 86.9  | 89.6  | 95.5  | 105.1 | 109.2 | 108.6 |
| 37.5° | 107.0 | 97.6  | 89.8  | 88.1  | 86.3  | 85.8  | 87.3  | 92.8  | 102.6 | 109.7 | 108.2 |
| 40°   | 108.5 | 96.8  | 88.9  | 85.9  | 86.6  | 84.1  | 85.6  | 92.4  | 103.0 | 109.7 | 108.4 |
| 42.5° | 106.8 | 95.8  | 87.6  | 85.4  | 86.0  | 82.5  | 84.3  | 91.4  | 101.8 | 109.9 | 107.2 |
| 45°   | 103.4 | 93.5  | 86.9  | 83.1  | 86.3  | 81.1  | 83.3  | 88.9  | 98.5  | 107.2 | 104.1 |
| 47.5° | 100.0 | 90.8  | 83.9  | 81.5  | 84.8  | 79.7  | 80.6  | 85.4  | 95.1  | 103.7 | 101.0 |
| 50°   | 96.4  | 87.5  | 81.5  | 80.8  | 83.1  | 79.4  | 77.9  | 81.8  | 91.0  | 99.6  | 97.4  |
| 52.5° | 92.4  | 84.6  | 79.8  | 79.5  | 81.7  | 77.5  | 75.3  | 78.4  | 86.6  | 95.2  | 93.3  |
| 55°   | 88.5  | 81.5  | 77.7  | 78.4  | 80.8  | 76.0  | 73.2  | 75.2  | 81.9  | 90.4  | 87.9  |
| 57.5° | 84.8  | 78.0  | 74.8  | 76.9  | 78.7  | 74.0  | 70.5  | 71.6  | 77.1  | 85.4  | 82.5  |
| 60°   | 81.4  | 74.8  | 71.7  | 74.2  | 75.8  | 71.1  | 66.9  | 67.7  | 72.7  | 80.1  | 77.4  |
| 62.5° | 77.0  | 71.5  | 67.4  | 70.5  | 71.7  | 67.1  | 62.7  | 63.6  | 67.5  | 74.6  | 72.7  |
| 65°   | 70.8  | 67.3  | 63.4  | 65.6  | 67.3  | 62.5  | 58.4  | 59.4  | 62.3  | 69.0  | 67.5  |
| 67.5° | 65.4  | 62.1  | 59.5  | 61.1  | 61.5  | 57.8  | 54.1  | 54.7  | 57.1  | 63.3  | 61.7  |
| 70°   | 59.5  | 56.3  | 54.2  | 55.5  | 55.4  | 52.3  | 49.4  | 49.6  | 51.5  | 57.2  | 55.1  |
| 72.5° | 53.0  | 49.9  | 48.9  | 49.6  | 49.0  | 46.2  | 43.5  | 44.5  | 45.7  | 50.0  | 48.4  |
| 75°   | 46.1  | 43.2  | 42.6  | 43.4  | 42.5  | 39.9  | 37.4  | 38.4  | 39.5  | 43.1  | 41.0  |
| 77.5° | 38.8  | 36.3  | 36.4  | 36.6  | 35.5  | 33.6  | 31.2  | 32.2  | 32.9  | 35.3  | 33.2  |
| 80°   | 30.9  | 28.9  | 29.5  | 29.5  | 28.3  | 27.0  | 24.7  | 25.0  | 25.4  | 26.2  | 24.7  |
| 82.5° | 22.6  | 22.6  | 22.6  | 22.7  | 20.1  | 20.5  | 18.5  | 18.3  | 17.9  | 17.8  | 16.8  |
| 85°   | 13.5  | 14.0  | 14.3  | 14.7  | 10.8  | 12.7  | 11.0  | 10.6  | 9.8   | 8.9   | 8.6   |
| 87.5° | 2.9   | 3.8   | 3.8   | 3.7   | 0.0   | 1.4   | 0.7   | 1.1   | 0.3   | 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   |

REPORT NUMBER: P822717

CATALOG NUMBER: MSA-SA1A-840-U-SLL

**CANDELA DISTRIBUTION (continued):**

|       | 285°  | 295°  | 305°  | 315°  | 325°  | 335°  | 345°   | 355°   | 359°   | 360°   |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0°    | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0 | 307.0  | 307.0  | 307.0  | 307.0  |
| 2.5°  | 311.0 | 302.5 | 318.3 | 332.4 | 330.1 | 338.4 | 319.3  | 347.5  | 377.5  | 377.5  |
| 5°    | 330.0 | 322.8 | 326.9 | 335.1 | 341.3 | 369.8 | 393.5  | 417.2  | 465.9  | 466.4  |
| 7.5°  | 278.3 | 293.8 | 297.5 | 295.2 | 321.8 | 358.6 | 397.7  | 464.9  | 506.1  | 509.4  |
| 10°   | 260.3 | 267.3 | 278.4 | 284.6 | 295.6 | 331.7 | 380.3  | 460.1  | 504.0  | 512.1  |
| 12.5° | 235.8 | 261.9 | 278.8 | 313.7 | 322.2 | 329.5 | 406.7  | 475.8  | 506.1  | 504.0  |
| 15°   | 209.0 | 228.9 | 253.3 | 291.7 | 313.7 | 368.7 | 422.4  | 526.1  | 543.2  | 558.2  |
| 17.5° | 166.7 | 181.2 | 213.8 | 257.6 | 311.8 | 362.5 | 461.1  | 588.3  | 620.2  | 635.7  |
| 20°   | 137.2 | 137.3 | 169.8 | 227.9 | 286.9 | 336.5 | 475.8  | 639.8  | 680.4  | 688.3  |
| 22.5° | 129.7 | 123.2 | 140.3 | 187.4 | 259.5 | 351.9 | 505.5  | 722.8  | 807.3  | 827.3  |
| 25°   | 125.6 | 117.6 | 128.4 | 165.4 | 239.9 | 360.0 | 565.3  | 836.8  | 945.4  | 953.2  |
| 27.5° | 127.3 | 130.9 | 134.4 | 147.5 | 215.0 | 344.9 | 551.4  | 887.7  | 1004.1 | 1018.8 |
| 30°   | 138.7 | 144.6 | 136.9 | 141.4 | 194.5 | 322.9 | 576.1  | 970.6  | 1078.2 | 1102.9 |
| 32.5° | 115.5 | 113.2 | 112.4 | 122.4 | 174.1 | 303.1 | 628.0  | 1087.1 | 1158.4 | 1189.5 |
| 35°   | 104.1 | 100.6 | 102.0 | 113.3 | 164.0 | 300.4 | 657.1  | 1183.6 | 1285.1 | 1304.2 |
| 37.5° | 103.7 | 99.6  | 101.4 | 109.9 | 167.5 | 305.4 | 703.7  | 1338.4 | 1508.7 | 1549.4 |
| 40°   | 102.7 | 100.4 | 101.4 | 107.8 | 163.9 | 308.3 | 730.5  | 1468.5 | 1664.3 | 1705.7 |
| 42.5° | 102.6 | 101.4 | 102.4 | 109.5 | 160.0 | 309.5 | 767.7  | 1586.0 | 1828.4 | 1861.0 |
| 45°   | 102.2 | 103.3 | 103.3 | 110.9 | 158.3 | 318.0 | 789.6  | 1643.7 | 1936.5 | 1976.8 |
| 47.5° | 100.2 | 103.5 | 109.1 | 110.5 | 151.4 | 314.1 | 820.5  | 1731.2 | 1994.0 | 2031.9 |
| 50°   | 97.6  | 103.1 | 116.4 | 107.6 | 150.4 | 304.4 | 856.7  | 1800.5 | 2067.8 | 2100.7 |
| 52.5° | 94.3  | 102.4 | 114.7 | 102.2 | 148.3 | 302.7 | 907.4  | 1890.6 | 2153.8 | 2182.9 |
| 55°   | 89.4  | 99.9  | 109.5 | 96.6  | 143.5 | 297.3 | 984.9  | 2002.4 | 2266.4 | 2286.3 |
| 57.5° | 85.0  | 96.0  | 101.8 | 93.5  | 132.1 | 298.5 | 1038.9 | 2093.5 | 2360.9 | 2378.3 |
| 60°   | 81.1  | 95.6  | 91.0  | 90.3  | 120.3 | 283.4 | 1056.4 | 2092.5 | 2396.1 | 2423.4 |
| 62.5° | 76.9  | 90.3  | 83.3  | 85.9  | 110.1 | 267.8 | 1019.3 | 2002.8 | 2358.1 | 2405.8 |
| 65°   | 71.3  | 77.4  | 77.0  | 82.7  | 110.3 | 242.6 | 934.1  | 1844.6 | 2263.3 | 2326.2 |
| 67.5° | 64.8  | 68.5  | 70.9  | 77.7  | 113.9 | 222.9 | 797.1  | 1654.3 | 2102.0 | 2176.7 |
| 70°   | 58.2  | 61.9  | 64.6  | 71.1  | 117.1 | 213.9 | 634.5  | 1387.0 | 1839.2 | 1915.1 |
| 72.5° | 51.5  | 55.2  | 57.3  | 63.0  | 112.8 | 194.5 | 469.6  | 1079.2 | 1476.3 | 1516.1 |
| 75°   | 44.4  | 48.0  | 49.7  | 55.0  | 97.9  | 160.9 | 324.3  | 817.4  | 1081.3 | 1121.7 |
| 77.5° | 37.2  | 41.1  | 41.7  | 45.9  | 74.8  | 123.0 | 207.8  | 627.0  | 765.7  | 792.6  |
| 80°   | 29.7  | 33.6  | 33.6  | 35.9  | 52.6  | 84.6  | 124.5  | 473.0  | 557.6  | 568.2  |
| 82.5° | 21.4  | 25.6  | 25.3  | 25.4  | 36.3  | 52.4  | 72.1   | 354.4  | 402.9  | 404.9  |
| 85°   | 12.6  | 15.6  | 15.4  | 14.1  | 21.4  | 28.3  | 39.0   | 220.1  | 224.9  | 225.4  |
| 87.5° | 2.4   | 3.7   | 3.3   | 1.4   | 6.0   | 8.3   | 11.3   | 40.9   | 16.2   | 15.8   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-2309-178-2

Test Date: 09/22/2023

Luminaire Tested: GALN-SA2A-840-U-T4W

Data in this report applies to families of products including GALN-SA2A-840-U-T4W.

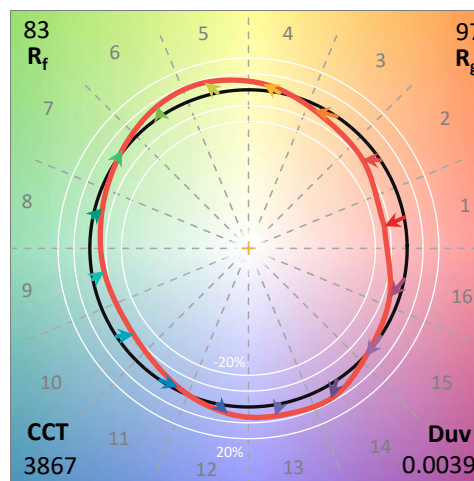
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2309-178-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 09/22/2023  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **GALN-SA2A-840-U-T4W**  
 Description: GALLEON 2 AREA AND ROADWAY LUMINAIRE. (2) 80 CRI, 4000K, 615MA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS

LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS

### Spectral Parameters

|                           |        |           |      |      |      |
|---------------------------|--------|-----------|------|------|------|
| CCT (K):                  | 3867   | CRI (Ra): | 79.8 |      |      |
| CIE u':                   | 0.2254 | R1:       | 76.6 | R9:  | -8.6 |
| CIE v':                   | 0.5090 | R2:       | 84.7 | R10: | 66.3 |
| Duv:                      | 0.0039 | R3:       | 93.7 | R11: | 80.5 |
| CIE x:                    | 0.3895 | R4:       | 80.6 | R12: | 67.3 |
| CIE y:                    | 0.3908 | R5:       | 77.9 | R13: | 77.9 |
| CIE z:                    | 0.2197 | R6:       | 81.2 | R14: | 96.6 |
| Peak Wavelength (nm):     | 593    | R7:       | 84.2 |      |      |
| Dominant Wavelength (nm): | 577    | R8:       | 59.0 |      |      |
| Purity:                   | 34.3   |           |      |      |      |
| Rf:                       | 82.7   |           |      |      |      |
| Rg:                       | 96.5   |           |      |      |      |



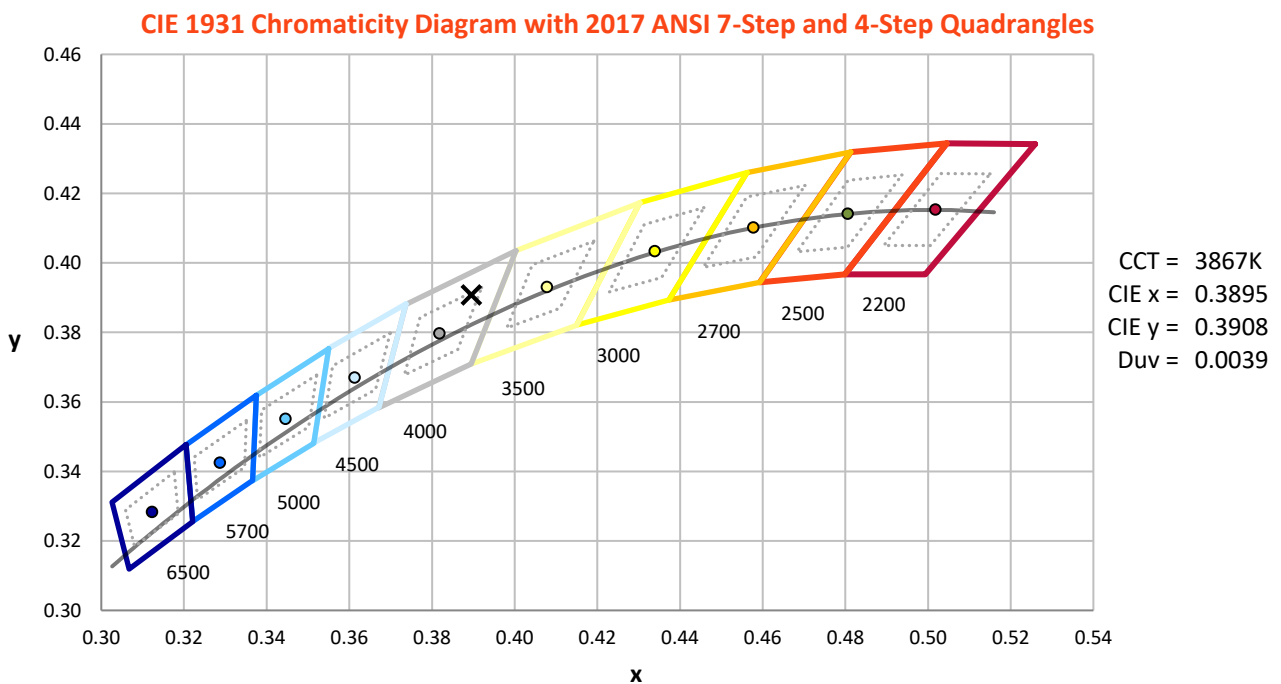
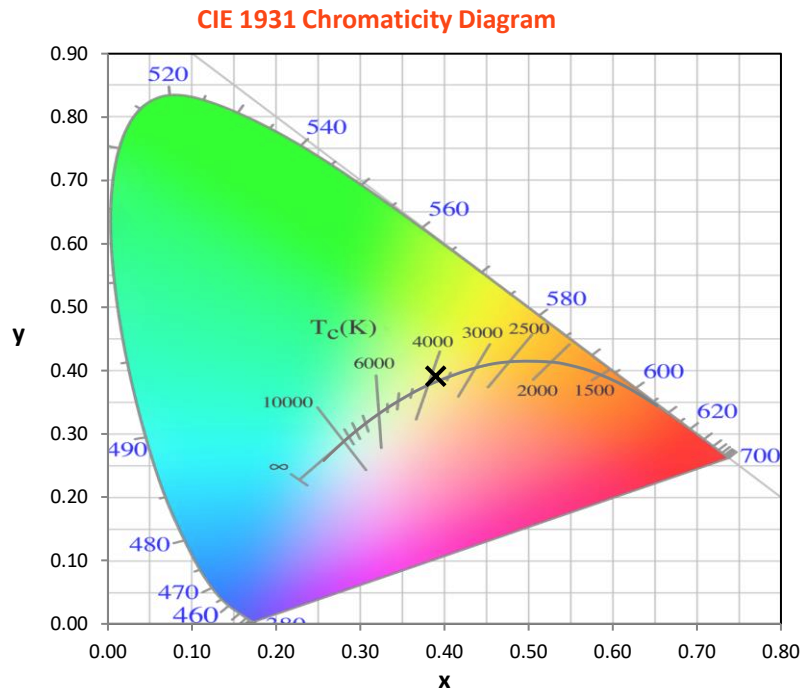
### Test Conditions

Stabilization Time: 25M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/46%  
 Sphere Temperature (°C): 24.7

REPORT NUMBER: SP1-2309-178-2

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 8/9/2023         | 2/9/2024             |
| Power Meter                    | XITRON 2801 IN0071    | 11/29/2022       | 11/29/2023           |
| AC Power Source                | CHROMA 61603 IN0063   | 11/28/2022       | 11/28/2023           |
| DC Power Source                | AGILENT E3634A IN0208 | 11/28/2022       | 11/28/2023           |
| Sphere Thermometer             | ONSET IN0085          | 11/28/2022       | 11/28/2023           |
| Room Thermometer               | ONSET IN0046          | 11/28/2022       | 11/28/2023           |

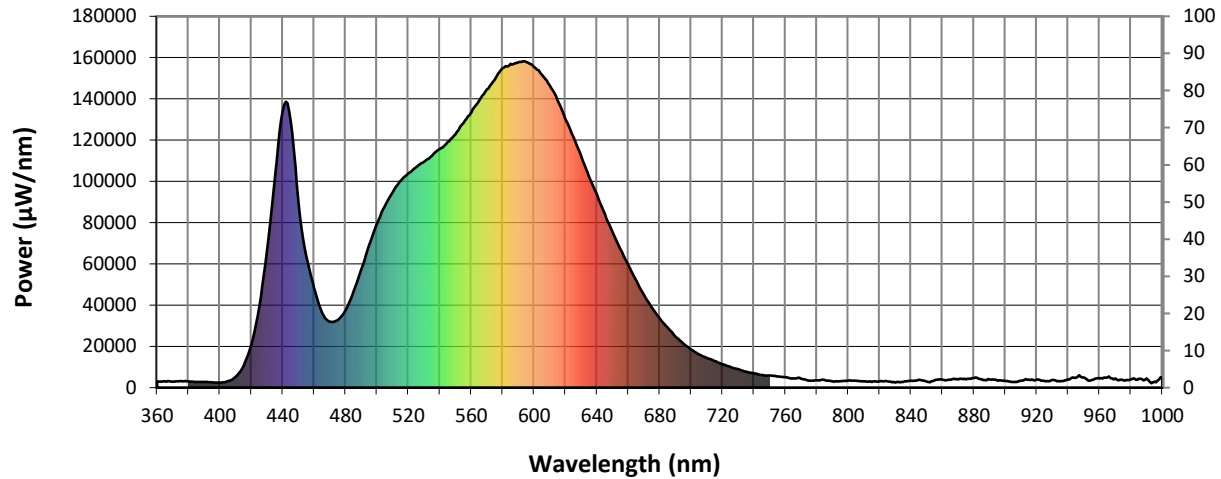
REPORT NUMBER: SP1-2309-178-2



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2309-178-2

**Photopic Flux vs. Wavelength**

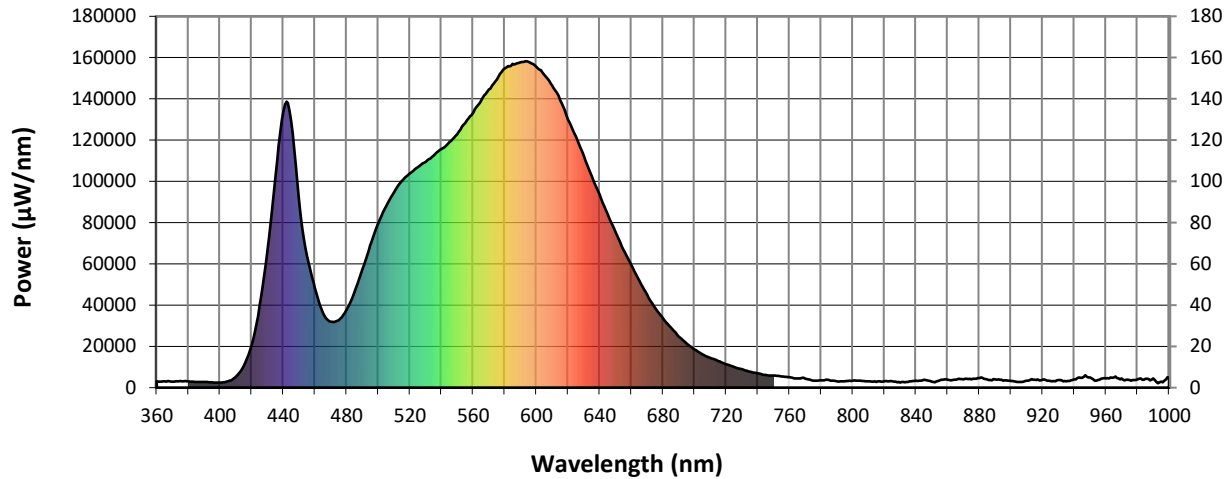


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| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 3123             | NR               | 490       | 57459            | NR               | 620       | 129941           | NR               | 750       | 5858             | NR               | 880       | 4622             | NR               |
| 365       | 3041             | NR               | 495       | 69038            | NR               | 625       | 121678           | NR               | 755       | 5395             | NR               | 885       | 3949             | NR               |
| 370       | 2965             | NR               | 500       | 79493            | NR               | 630       | 112252           | NR               | 760       | 5011             | NR               | 890       | 4035             | NR               |
| 375       | 3195             | NR               | 505       | 87950            | NR               | 635       | 102369           | NR               | 765       | 4514             | NR               | 895       | 3391             | NR               |
| 380       | 3028             | NR               | 510       | 94704            | NR               | 640       | 93616            | NR               | 770       | 4375             | NR               | 900       | 3268             | NR               |
| 385       | 2738             | NR               | 515       | 100214           | NR               | 645       | 84211            | NR               | 775       | 3450             | NR               | 905       | 2767             | NR               |
| 390       | 2690             | NR               | 520       | 103961           | NR               | 650       | 75380            | NR               | 780       | 3547             | NR               | 910       | 3391             | NR               |
| 395       | 2604             | NR               | 525       | 106854           | NR               | 655       | 66946            | NR               | 785       | 3648             | NR               | 915       | 3784             | NR               |
| 400       | 2384             | NR               | 530       | 109533           | NR               | 660       | 59483            | NR               | 790       | 3081             | NR               | 920       | 3790             | NR               |
| 405       | 3031             | NR               | 535       | 112417           | NR               | 665       | 51858            | NR               | 795       | 3104             | NR               | 925       | 3175             | NR               |
| 410       | 5239             | NR               | 540       | 115725           | NR               | 670       | 44882            | NR               | 800       | 3444             | NR               | 930       | 3642             | NR               |
| 415       | 10499            | NR               | 545       | 119091           | NR               | 675       | 38742            | NR               | 805       | 3315             | NR               | 935       | 3040             | NR               |
| 420       | 20790            | NR               | 550       | 122884           | NR               | 680       | 33597            | NR               | 810       | 3022             | NR               | 940       | 4039             | NR               |
| 425       | 39276            | NR               | 555       | 128300           | NR               | 685       | 29101            | NR               | 815       | 2832             | NR               | 945       | 4797             | NR               |
| 430       | 66418            | NR               | 560       | 133274           | NR               | 690       | 24855            | NR               | 820       | 3142             | NR               | 950       | 4945             | NR               |
| 435       | 101961           | NR               | 565       | 139112           | NR               | 695       | 21367            | NR               | 825       | 3115             | NR               | 955       | 3757             | NR               |
| 440       | 134023           | NR               | 570       | 144467           | NR               | 700       | 18479            | NR               | 830       | 2520             | NR               | 960       | 4539             | NR               |
| 445       | 129385           | NR               | 575       | 149331           | NR               | 705       | 16131            | NR               | 835       | 2783             | NR               | 965       | 4857             | NR               |
| 450       | 90434            | NR               | 580       | 154784           | NR               | 710       | 14388            | NR               | 840       | 3364             | NR               | 970       | 4463             | NR               |
| 455       | 63521            | NR               | 585       | 156899           | NR               | 715       | 12865            | NR               | 845       | 3807             | NR               | 975       | 3718             | NR               |
| 460       | 48429            | NR               | 590       | 157796           | NR               | 720       | 11277            | NR               | 850       | 2907             | NR               | 980       | 3955             | NR               |
| 465       | 36445            | NR               | 595       | 157849           | NR               | 725       | 10063            | NR               | 855       | 3470             | NR               | 985       | 4314             | NR               |
| 470       | 31953            | NR               | 600       | 155418           | NR               | 730       | 8942             | NR               | 860       | 3820             | NR               | 990       | 4478             | NR               |
| 475       | 32768            | NR               | 605       | 151601           | NR               | 735       | 7722             | NR               | 865       | 3922             | NR               | 995       | 2959             | NR               |
| 480       | 37631            | NR               | 610       | 146416           | NR               | 740       | 6964             | NR               | 870       | 4061             | NR               | 1000      | 4570             | NR               |
| 485       | 46354            | NR               | 615       | 139241           | NR               | 745       | 6117             | NR               | 875       | 3975             | NR               |           |                  |                  |

REPORT NUMBER: SP1-2309-178-2

Scotopic Flux vs. Wavelength



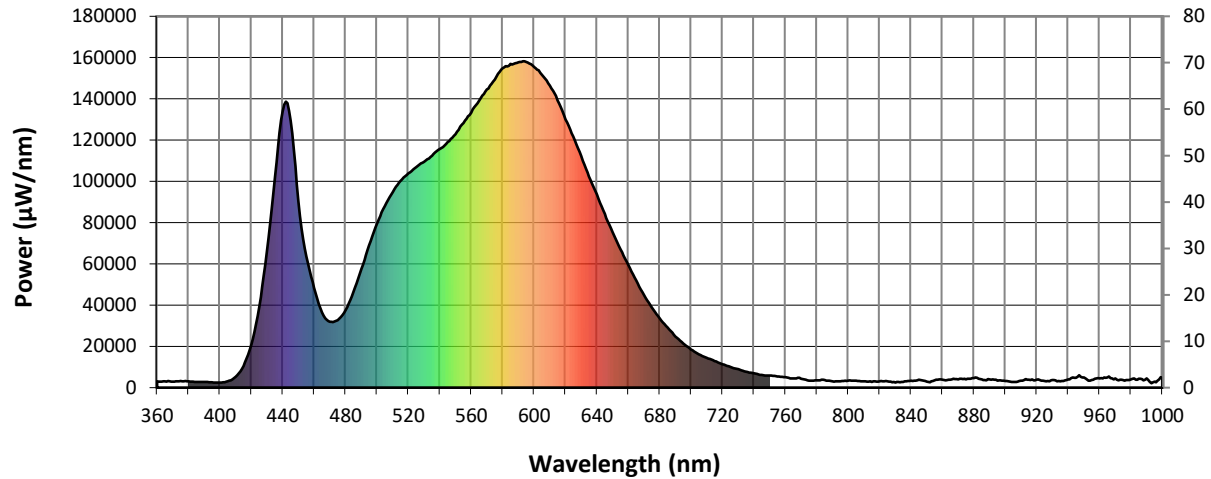
Scotopic Lumens: 14236

S/P: 1.59

| 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       | 3123             | NR               | 490       | 57459            | NR               | 620       | 129941           | NR               | 750       | 5858             | NR               | 880       | 4622             | NR               |
| 365       | 3041             | NR               | 495       | 69038            | NR               | 625       | 121678           | NR               | 755       | 5395             | NR               | 885       | 3949             | NR               |
| 370       | 2965             | NR               | 500       | 79493            | NR               | 630       | 112252           | NR               | 760       | 5011             | NR               | 890       | 4035             | NR               |
| 375       | 3195             | NR               | 505       | 87950            | NR               | 635       | 102369           | NR               | 765       | 4514             | NR               | 895       | 3391             | NR               |
| 380       | 3028             | NR               | 510       | 94704            | NR               | 640       | 93616            | NR               | 770       | 4375             | NR               | 900       | 3268             | NR               |
| 385       | 2738             | NR               | 515       | 100214           | NR               | 645       | 84211            | NR               | 775       | 3450             | NR               | 905       | 2767             | NR               |
| 390       | 2690             | NR               | 520       | 103961           | NR               | 650       | 75380            | NR               | 780       | 3547             | NR               | 910       | 3391             | NR               |
| 395       | 2604             | NR               | 525       | 106854           | NR               | 655       | 66946            | NR               | 785       | 3648             | NR               | 915       | 3784             | NR               |
| 400       | 2384             | NR               | 530       | 109533           | NR               | 660       | 59483            | NR               | 790       | 3081             | NR               | 920       | 3790             | NR               |
| 405       | 3031             | NR               | 535       | 112417           | NR               | 665       | 51858            | NR               | 795       | 3104             | NR               | 925       | 3175             | NR               |
| 410       | 5239             | NR               | 540       | 115725           | NR               | 670       | 44882            | NR               | 800       | 3444             | NR               | 930       | 3642             | NR               |
| 415       | 10499            | NR               | 545       | 119091           | NR               | 675       | 38742            | NR               | 805       | 3315             | NR               | 935       | 3040             | NR               |
| 420       | 20790            | NR               | 550       | 122884           | NR               | 680       | 33597            | NR               | 810       | 3022             | NR               | 940       | 4039             | NR               |
| 425       | 39276            | NR               | 555       | 128300           | NR               | 685       | 29101            | NR               | 815       | 2832             | NR               | 945       | 4797             | NR               |
| 430       | 66418            | NR               | 560       | 133274           | NR               | 690       | 24855            | NR               | 820       | 3142             | NR               | 950       | 4945             | NR               |
| 435       | 101961           | NR               | 565       | 139112           | NR               | 695       | 21367            | NR               | 825       | 3115             | NR               | 955       | 3757             | NR               |
| 440       | 134023           | NR               | 570       | 144467           | NR               | 700       | 18479            | NR               | 830       | 2520             | NR               | 960       | 4539             | NR               |
| 445       | 129385           | NR               | 575       | 149331           | NR               | 705       | 16131            | NR               | 835       | 2783             | NR               | 965       | 4857             | NR               |
| 450       | 90434            | NR               | 580       | 154784           | NR               | 710       | 14388            | NR               | 840       | 3364             | NR               | 970       | 4463             | NR               |
| 455       | 63521            | NR               | 585       | 156899           | NR               | 715       | 12865            | NR               | 845       | 3807             | NR               | 975       | 3718             | NR               |
| 460       | 48429            | NR               | 590       | 157796           | NR               | 720       | 11277            | NR               | 850       | 2907             | NR               | 980       | 3955             | NR               |
| 465       | 36445            | NR               | 595       | 157849           | NR               | 725       | 10063            | NR               | 855       | 3470             | NR               | 985       | 4314             | NR               |
| 470       | 31953            | NR               | 600       | 155418           | NR               | 730       | 8942             | NR               | 860       | 3820             | NR               | 990       | 4478             | NR               |
| 475       | 32768            | NR               | 605       | 151601           | NR               | 735       | 7722             | NR               | 865       | 3922             | NR               | 995       | 2959             | NR               |
| 480       | 37631            | NR               | 610       | 146416           | NR               | 740       | 6964             | NR               | 870       | 4061             | NR               | 1000      | 4570             | NR               |
| 485       | 46354            | NR               | 615       | 139241           | NR               | 745       | 6117             | NR               | 875       | 3975             | NR               |           |                  |                  |

REPORT NUMBER: SP1-2309-178-2

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5542.6 M/P: 0.62**

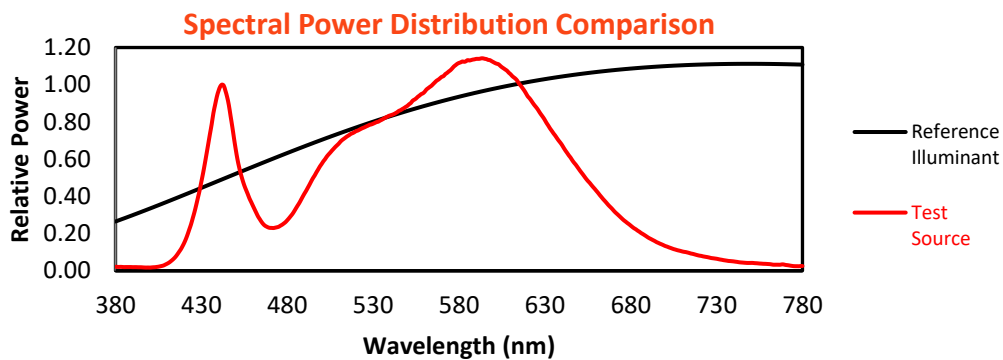
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 3123             | NR               | 490       | 57459            | NR               | 620       | 129941           | NR               | 750       | 5858             | NR               | 880       | 4622             | NR               |
| 365       | 3041             | NR               | 495       | 69038            | NR               | 625       | 121678           | NR               | 755       | 5395             | NR               | 885       | 3949             | NR               |
| 370       | 2965             | NR               | 500       | 79493            | NR               | 630       | 112252           | NR               | 760       | 5011             | NR               | 890       | 4035             | NR               |
| 375       | 3195             | NR               | 505       | 87950            | NR               | 635       | 102369           | NR               | 765       | 4514             | NR               | 895       | 3391             | NR               |
| 380       | 3028             | NR               | 510       | 94704            | NR               | 640       | 93616            | NR               | 770       | 4375             | NR               | 900       | 3268             | NR               |
| 385       | 2738             | NR               | 515       | 100214           | NR               | 645       | 84211            | NR               | 775       | 3450             | NR               | 905       | 2767             | NR               |
| 390       | 2690             | NR               | 520       | 103961           | NR               | 650       | 75380            | NR               | 780       | 3547             | NR               | 910       | 3391             | NR               |
| 395       | 2604             | NR               | 525       | 106854           | NR               | 655       | 66946            | NR               | 785       | 3648             | NR               | 915       | 3784             | NR               |
| 400       | 2384             | NR               | 530       | 109533           | NR               | 660       | 59483            | NR               | 790       | 3081             | NR               | 920       | 3790             | NR               |
| 405       | 3031             | NR               | 535       | 112417           | NR               | 665       | 51858            | NR               | 795       | 3104             | NR               | 925       | 3175             | NR               |
| 410       | 5239             | NR               | 540       | 115725           | NR               | 670       | 44882            | NR               | 800       | 3444             | NR               | 930       | 3642             | NR               |
| 415       | 10499            | NR               | 545       | 119091           | NR               | 675       | 38742            | NR               | 805       | 3315             | NR               | 935       | 3040             | NR               |
| 420       | 20790            | NR               | 550       | 122884           | NR               | 680       | 33597            | NR               | 810       | 3022             | NR               | 940       | 4039             | NR               |
| 425       | 39276            | NR               | 555       | 128300           | NR               | 685       | 29101            | NR               | 815       | 2832             | NR               | 945       | 4797             | NR               |
| 430       | 66418            | NR               | 560       | 133274           | NR               | 690       | 24855            | NR               | 820       | 3142             | NR               | 950       | 4945             | NR               |
| 435       | 101961           | NR               | 565       | 139112           | NR               | 695       | 21367            | NR               | 825       | 3115             | NR               | 955       | 3757             | NR               |
| 440       | 134023           | NR               | 570       | 144467           | NR               | 700       | 18479            | NR               | 830       | 2520             | NR               | 960       | 4539             | NR               |
| 445       | 129385           | NR               | 575       | 149331           | NR               | 705       | 16131            | NR               | 835       | 2783             | NR               | 965       | 4857             | NR               |
| 450       | 90434            | NR               | 580       | 154784           | NR               | 710       | 14388            | NR               | 840       | 3364             | NR               | 970       | 4463             | NR               |
| 455       | 63521            | NR               | 585       | 156899           | NR               | 715       | 12865            | NR               | 845       | 3807             | NR               | 975       | 3718             | NR               |
| 460       | 48429            | NR               | 590       | 157796           | NR               | 720       | 11277            | NR               | 850       | 2907             | NR               | 980       | 3955             | NR               |
| 465       | 36445            | NR               | 595       | 157849           | NR               | 725       | 10063            | NR               | 855       | 3470             | NR               | 985       | 4314             | NR               |
| 470       | 31953            | NR               | 600       | 155418           | NR               | 730       | 8942             | NR               | 860       | 3820             | NR               | 990       | 4478             | NR               |
| 475       | 32768            | NR               | 605       | 151601           | NR               | 735       | 7722             | NR               | 865       | 3922             | NR               | 995       | 2959             | NR               |
| 480       | 37631            | NR               | 610       | 146416           | NR               | 740       | 6964             | NR               | 870       | 4061             | NR               | 1000      | 4570             | NR               |
| 485       | 46354            | NR               | 615       | 139241           | NR               | 745       | 6117             | NR               | 875       | 3975             | NR               |           |                  |                  |

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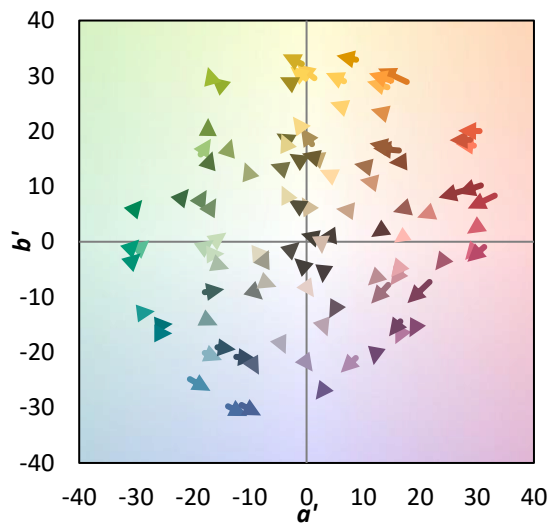
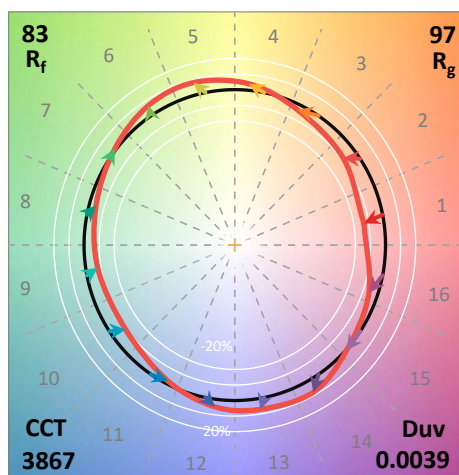
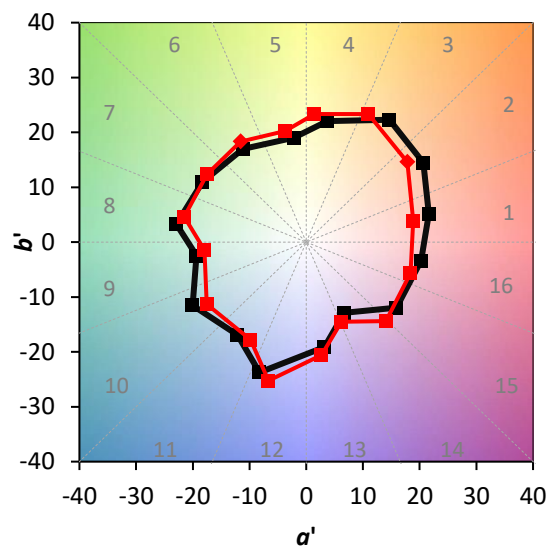
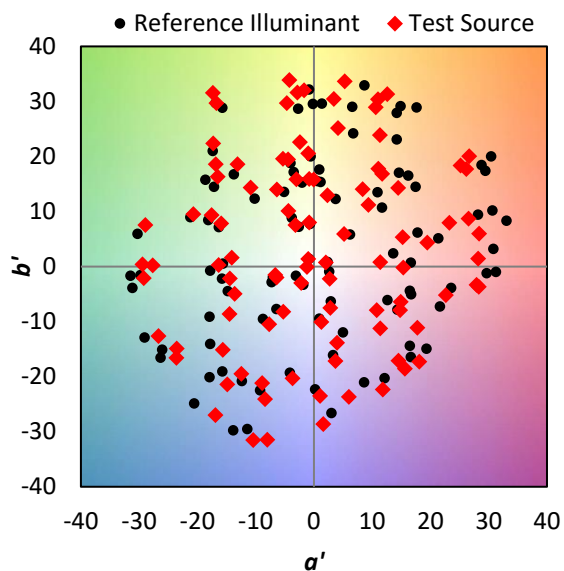
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**Summary**

$R_f = 82.7$   
 $R_g = 96.5$   
 $CIE R_a = 79.8$   
 $R_g = -8.6$



**Color Vector Graphics**

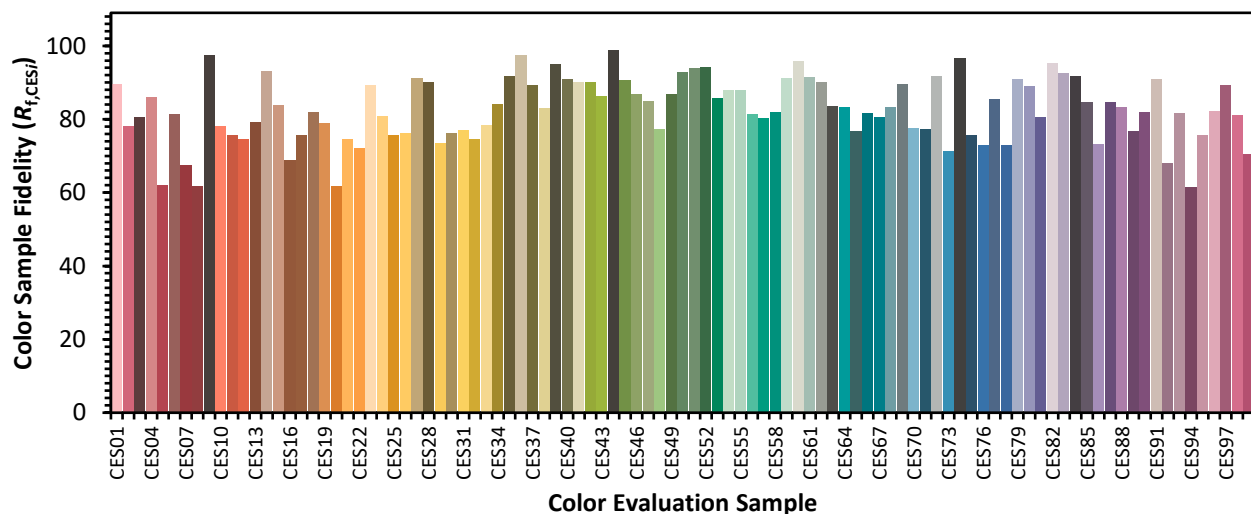


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

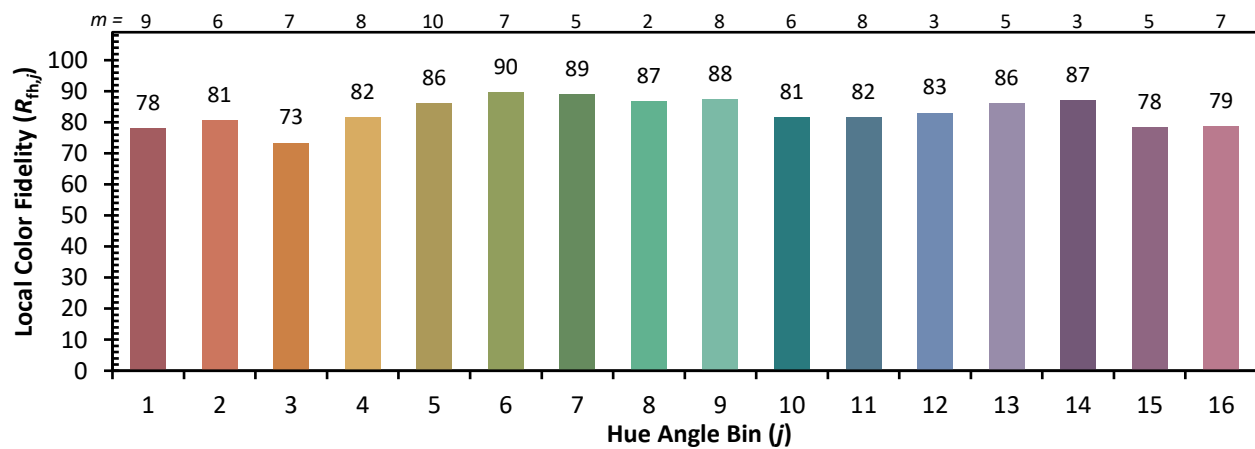
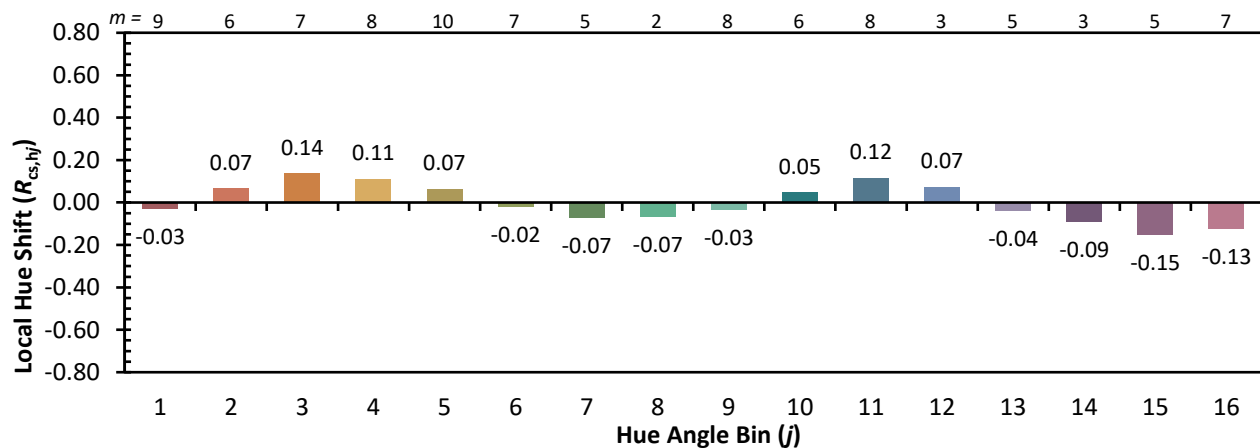
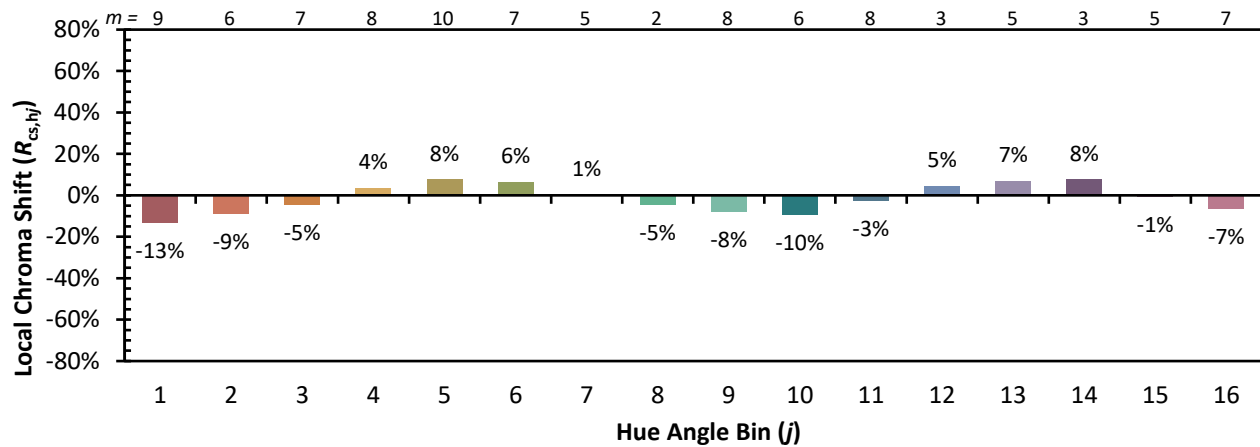
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 76 | CES51 = 94 | CES76 = 73 |
| CES02 = 61 | CES27 = 91 | CES52 = 94 | CES77 = 85 |
| CES03 = 31 | CES28 = 90 | CES53 = 86 | CES78 = 73 |
| CES04 = 69 | CES29 = 73 | CES54 = 88 | CES79 = 91 |
| CES05 = 48 | CES30 = 76 | CES55 = 88 | CES80 = 89 |
| CES06 = 50 | CES31 = 77 | CES56 = 81 | CES81 = 80 |
| CES07 = 40 | CES32 = 74 | CES57 = 80 | CES82 = 95 |
| CES08 = 39 | CES33 = 78 | CES58 = 82 | CES83 = 92 |
| CES09 = 29 | CES34 = 84 | CES59 = 91 | CES84 = 92 |
| CES10 = 74 | CES35 = 92 | CES60 = 96 | CES85 = 85 |
| CES11 = 57 | CES36 = 97 | CES61 = 92 | CES86 = 73 |
| CES12 = 63 | CES37 = 89 | CES62 = 90 | CES87 = 85 |
| CES13 = 42 | CES38 = 83 | CES63 = 83 | CES88 = 83 |
| CES14 = 74 | CES39 = 95 | CES64 = 83 | CES89 = 77 |
| CES15 = 71 | CES40 = 91 | CES65 = 77 | CES90 = 82 |
| CES16 = 47 | CES41 = 90 | CES66 = 82 | CES91 = 91 |
| CES17 = 49 | CES42 = 90 | CES67 = 80 | CES92 = 68 |
| CES18 = 56 | CES43 = 86 | CES68 = 83 | CES93 = 82 |
| CES19 = 71 | CES44 = 99 | CES69 = 90 | CES94 = 61 |
| CES20 = 65 | CES45 = 91 | CES70 = 77 | CES95 = 76 |
| CES21 = 86 | CES46 = 87 | CES71 = 77 | CES96 = 82 |
| CES22 = 78 | CES47 = 85 | CES72 = 92 | CES97 = 89 |
| CES23 = 91 | CES48 = 77 | CES73 = 71 | CES98 = 81 |
| CES24 = 90 | CES49 = 87 | CES74 = 97 | CES99 = 70 |
| CES25 = 71 | CES50 = 93 | CES75 = 76 |            |



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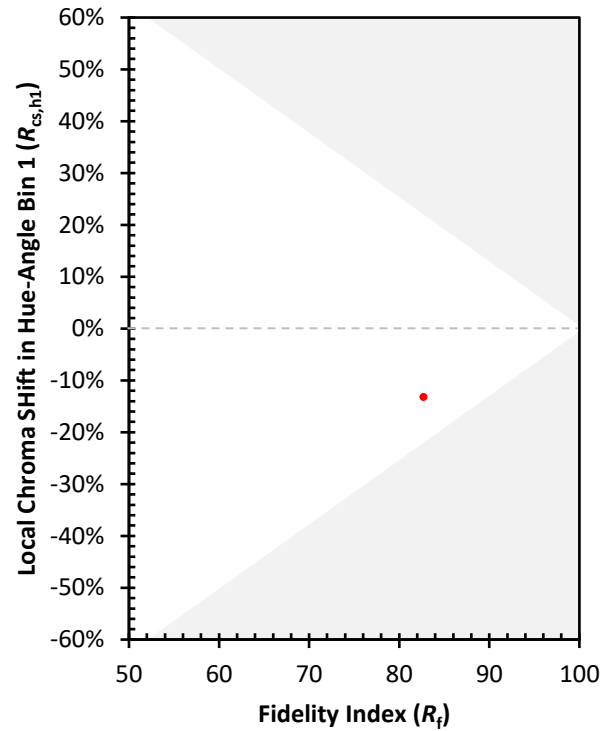
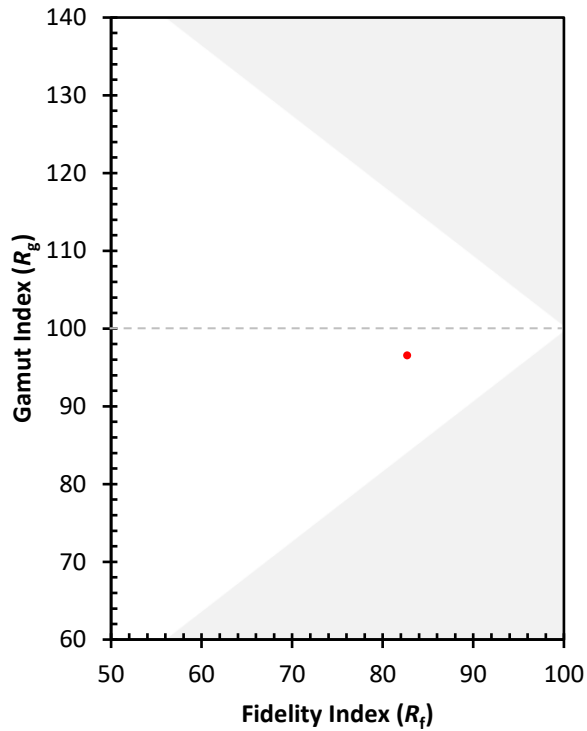
Color Rendition by Hue-Angle Bin



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**Measure Comparisons**



(END OF REPORT)