Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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: P631659

Luminaire Tested: GWS-SA2B-727-U-SLL-W-GRSBK

Issue Date: 1/10/2023

Report Generated By 670246102 / DESKTOP-G35701P

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Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P631659 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-38) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 1/10/2023 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWS-SA2B-727-U-SLL-W-GRSBK |
| Description: | GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK |
| Light Source: | (32) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3094.8 lumens |
| Efficiency: | N/A |
| Efficacy: | 66.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G0 |

| | |
|---|---|
| Input Watts (W): | 46.4 |
| 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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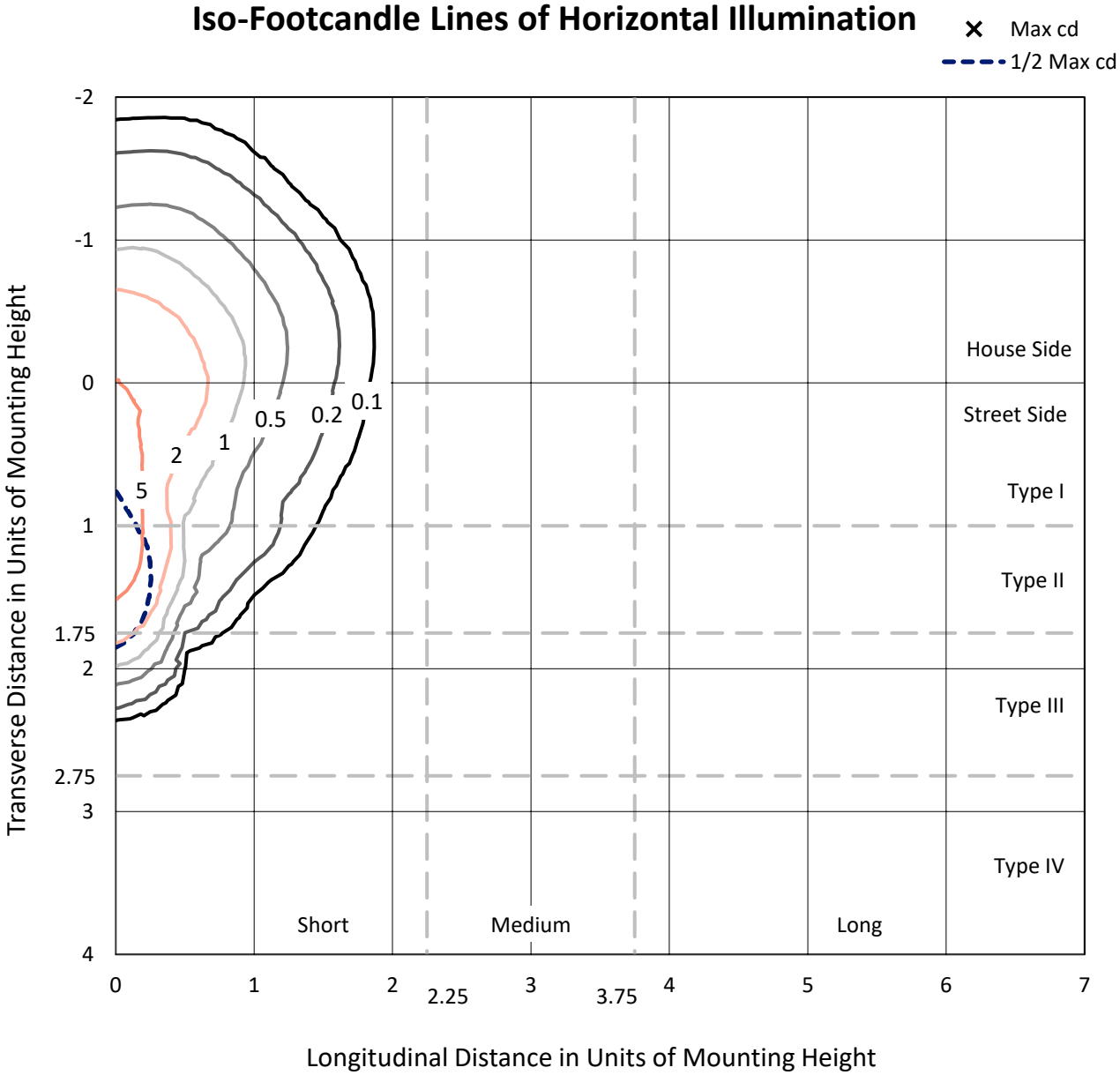
## Iso-Footcandle Lines of Horizontal Illumination




Based on 10 foot mounting height. Maximum calculated value = 8.3 fc
Type III - Short - N/A

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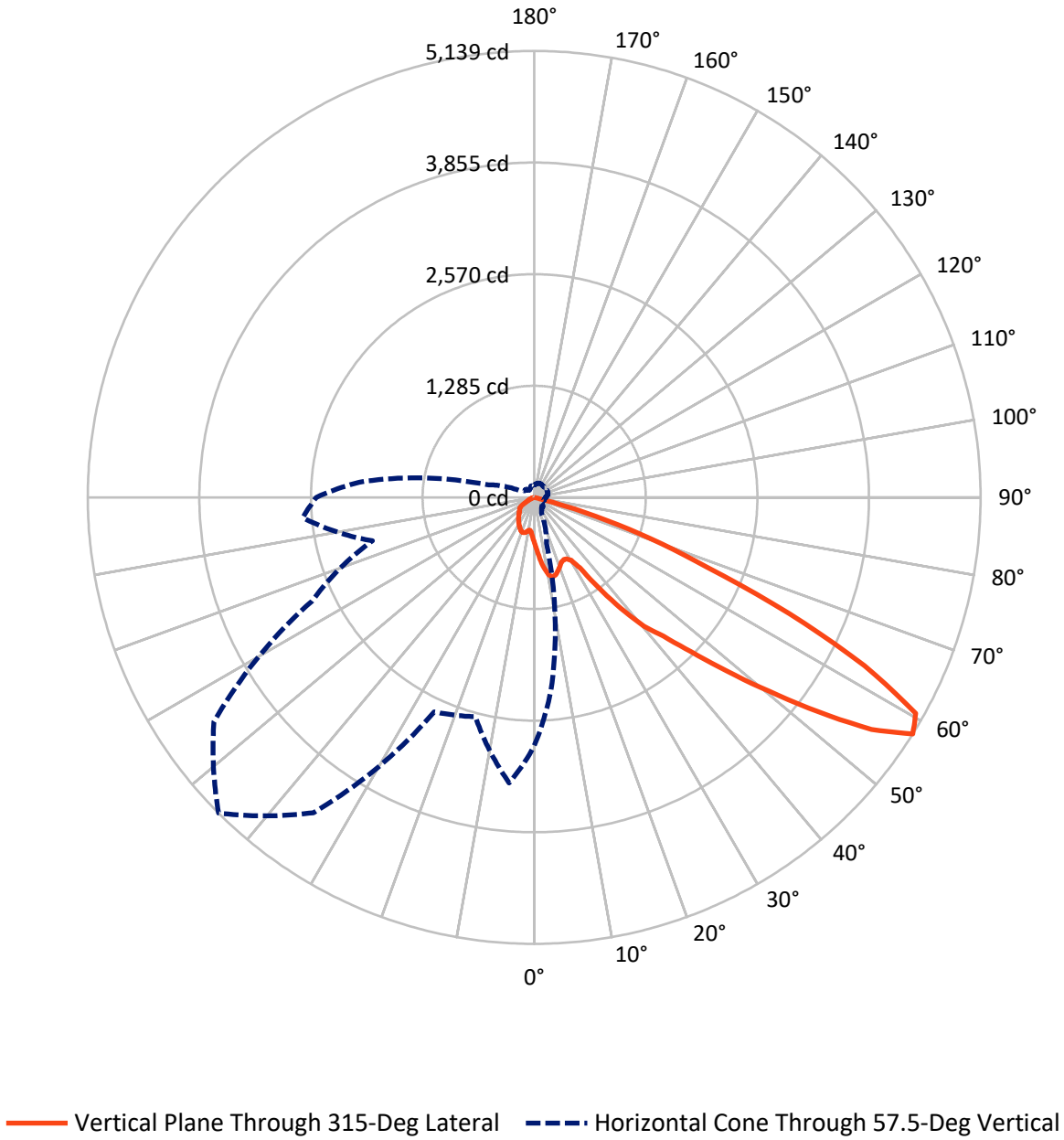
## Luminous Intensity Polar Plot



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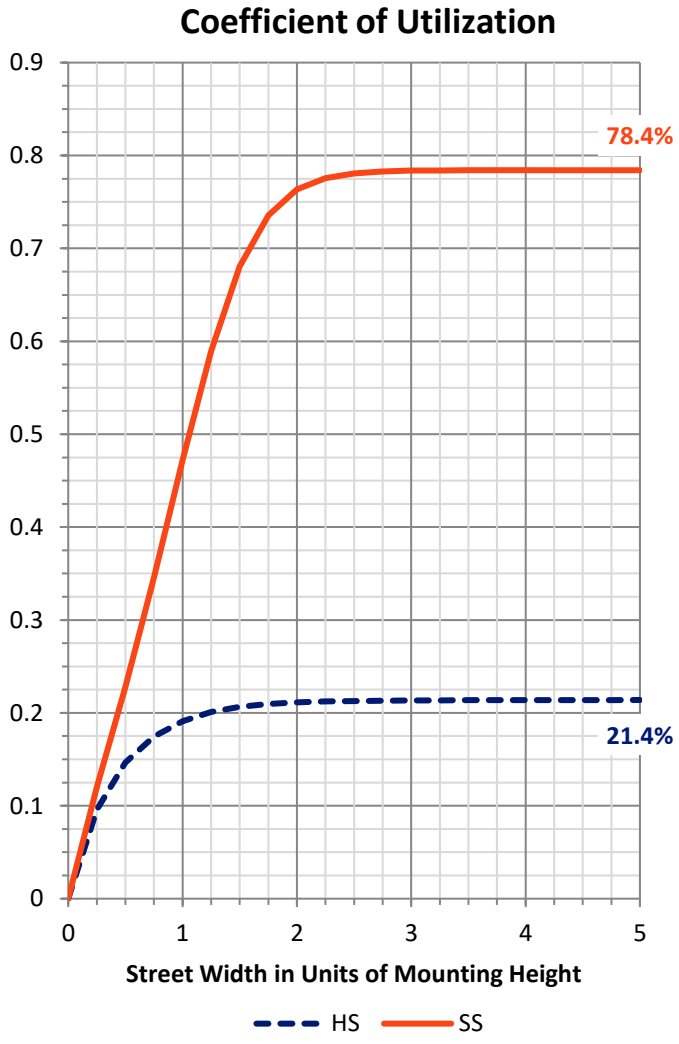
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 666.7 | 0.0 | 666.7 |
| | % Fixture | 21.5 | 0.0 | 21.5 |
| **Street Side** | Lumens | 2428.1 | 0.0 | 2428.1 |
| | % Fixture | 78.5 | 0.0 | 78.5 |
| **Total** | Lumens | 3094.8 | 0.0 | 3094.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 52.0 | 1.7 |
| 10°-20° | 171.0 | 5.5 |
| 20°-30° | 277.5 | 9.0 |
| 30°-40° | 426.0 | 13.8 |
| 40°-50° | 680.3 | 22.0 |
| 50°-60° | 952.6 | 30.8 |
| 60°-70° | 488.4 | 15.8 |
| 70°-80° | 47.0 | 1.5 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 3094.8 | 100.0 |
| 0°-180° | 3094.8 | 100.0 |



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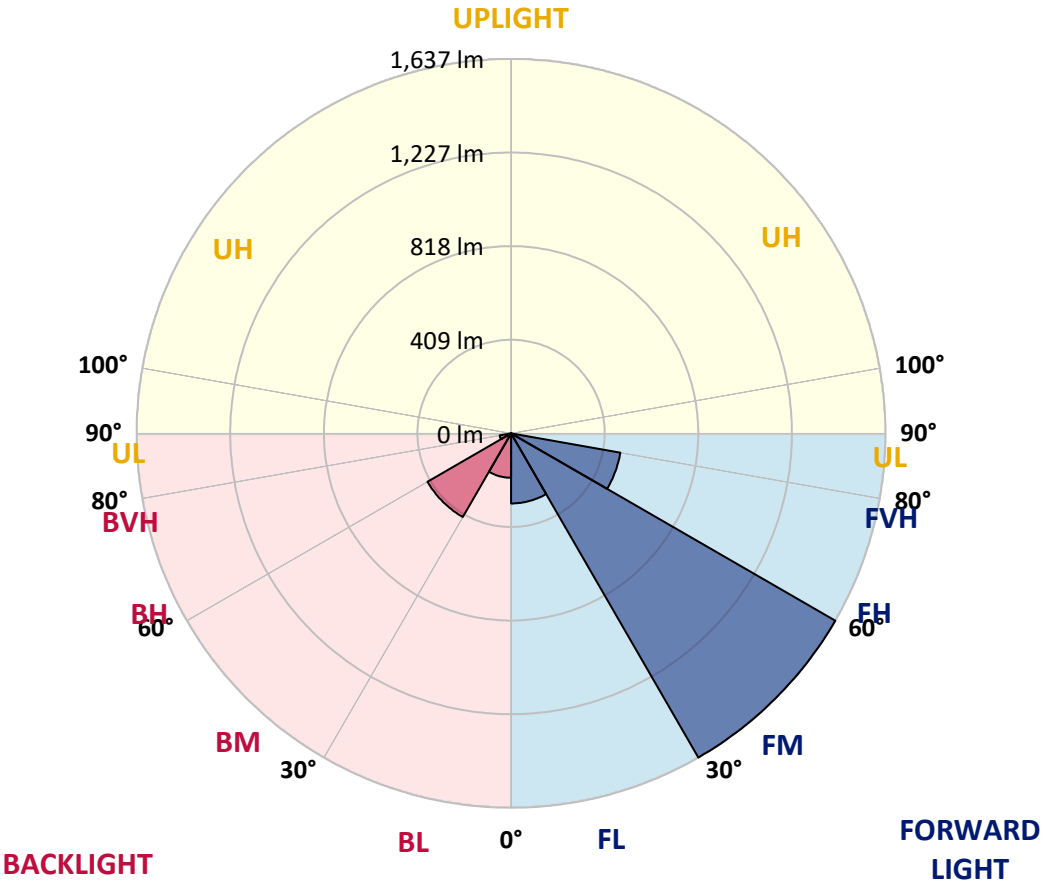
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 306.4 | 9.9 | | | |
| FM | (30°-60°) | 1636.6 | 52.9 | | | |
| FH | (60°-80°) | 485.1 | 15.7 | | | G0/660 |
| FVH | (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL | (0°-30°) | 194.1 | 6.3 | B1/500 | | |
| BM | (30°-60°) | 422.2 | 13.6 | B1/1000 | | |
| BH | (60°-80°) | 50.4 | 1.6 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G0**
Type III Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 1° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 |
| 2.5° | 584.2 | 582.9 | 578.8 | 564.7 | 556.1 | 542.4 | 532.5 | 519.6 | 505.6 | 496.9 | 488.2 |
| 5° | 646.2 | 642.9 | 631.8 | 599.5 | 574.7 | 547.8 | 526.3 | 502.7 | 477.4 | 460.9 | 445.6 |
| 7.5° | 705.8 | 700.9 | 686.0 | 631.4 | 593.7 | 555.2 | 524.6 | 490.3 | 454.7 | 429.9 | 410.8 |
| 10° | 764.2 | 753.0 | 729.4 | 662.4 | 611.5 | 565.2 | 529.2 | 489.9 | 448.1 | 416.6 | 395.5 |
| 12.5° | 812.2 | 803.9 | 771.6 | 691.8 | 626.4 | 567.2 | 523.0 | 486.5 | 458.4 | 437.3 | 417.9 |
| 15° | 853.5 | 844.4 | 813.8 | 718.2 | 639.2 | 559.0 | 496.9 | 465.0 | 469.6 | 477.9 | 461.3 |
| 17.5° | 891.6 | 882.1 | 849.0 | 740.2 | 644.2 | 538.7 | 460.5 | 445.2 | 470.4 | 501.4 | 495.2 |
| 20° | 930.9 | 920.1 | 879.6 | 758.0 | 642.5 | 506.8 | 423.7 | 428.2 | 463.8 | 499.4 | 502.7 |
| 22.5° | 976.8 | 965.6 | 918.5 | 780.7 | 641.3 | 468.8 | 391.8 | 413.3 | 451.4 | 481.6 | 487.4 |
| 25° | 1037.6 | 1024.4 | 972.7 | 814.2 | 644.6 | 434.0 | 369.0 | 398.8 | 430.3 | 457.6 | 460.9 |
| 27.5° | 1117.9 | 1100.9 | 1035.2 | 855.6 | 651.6 | 406.7 | 359.1 | 379.0 | 403.4 | 427.8 | 430.7 |
| 30° | 1222.6 | 1201.1 | 1106.7 | 891.6 | 648.3 | 387.7 | 352.5 | 359.1 | 373.6 | 393.5 | 393.9 |
| 32.5° | 1345.0 | 1315.7 | 1187.0 | 922.6 | 619.8 | 373.6 | 343.4 | 338.8 | 342.2 | 357.5 | 360.4 |
| 35° | 1489.0 | 1451.0 | 1275.5 | 952.0 | 567.6 | 346.3 | 326.8 | 311.5 | 310.3 | 317.7 | 324.8 |
| 37.5° | 1654.1 | 1608.6 | 1387.2 | 989.6 | 506.0 | 317.7 | 302.4 | 287.1 | 280.5 | 284.2 | 295.0 |
| 40° | 1806.4 | 1755.9 | 1503.9 | 1035.2 | 443.1 | 292.1 | 273.9 | 258.2 | 250.3 | 251.5 | 264.8 |
| 42.5° | 1985.1 | 1933.0 | 1646.7 | 1094.7 | 391.0 | 274.7 | 244.1 | 228.0 | 217.6 | 223.4 | 238.7 |
| 45° | 2256.5 | 2197.3 | 1854.8 | 1146.4 | 349.6 | 270.6 | 218.0 | 195.3 | 190.3 | 200.2 | 218.5 |
| 47.5° | 2627.2 | 2554.8 | 2140.6 | 1177.9 | 314.4 | 274.3 | 199.8 | 168.8 | 170.0 | 181.2 | 199.4 |
| 50° | 2995.0 | 2916.8 | 2471.2 | 1136.5 | 285.5 | 266.9 | 190.7 | 148.1 | 156.0 | 165.9 | 182.5 |
| 52.5° | 3247.8 | 3146.0 | 2632.2 | 1017.0 | 259.0 | 238.7 | 189.9 | 128.7 | 143.6 | 146.9 | 160.9 |
| 55° | 3257.7 | 3132.4 | 2549.8 | 801.8 | 223.0 | 201.5 | 181.2 | 112.5 | 129.9 | 131.2 | 143.2 |
| 57.5° | *2855.6* | *2742.2* | *2228.4* | *550.7* | *198.2* | *147.7* | *144.4* | *98.5* | *106.7* | *117.1* | *124.5* |
| 60° | 2172.5 | 2076.1 | 1666.5 | 252.4 | 150.6 | 93.9 | 98.9 | 84.8 | 79.9 | 95.2 | 102.6 |
| 62.5° | 1330.6 | 1268.9 | 999.6 | 111.7 | 96.0 | 50.1 | 60.0 | 67.4 | 60.0 | 65.8 | 72.0 |
| 65° | 528.3 | 501.0 | 379.4 | 47.6 | 39.3 | 25.2 | 27.3 | 39.3 | 42.2 | 46.3 | 52.1 |
| 67.5° | 91.8 | 86.9 | 63.7 | 21.1 | 16.1 | 15.3 | 13.2 | 18.2 | 25.7 | 28.5 | 33.1 |
| 70° | 12.0 | 11.6 | 10.3 | 8.7 | 8.3 | 7.4 | 5.8 | 11.6 | 17.4 | 18.2 | 21.1 |
| 72.5° | 2.9 | 2.5 | 2.5 | 2.1 | 2.5 | 0.8 | 0.8 | 6.2 | 12.4 | 12.8 | 14.9 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 7.9 | 8.7 | 10.3 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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° | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 |
| 2.5° | 481.2 | 472.9 | 470.0 | 465.9 | 460.5 | 462.1 | 454.7 | 452.2 | 455.9 | 460.9 | 459.7 |
| 5° | 437.3 | 428.2 | 422.0 | 412.5 | 410.8 | 407.1 | 404.6 | 401.3 | 405.5 | 411.2 | 412.5 |
| 7.5° | 402.6 | 394.7 | 388.5 | 385.6 | 383.5 | 381.9 | 376.9 | 374.4 | 374.4 | 376.9 | 379.0 |
| 10° | 387.7 | 381.9 | 380.6 | 381.5 | 384.8 | 384.4 | 379.8 | 376.5 | 372.4 | 370.3 | 372.8 |
| 12.5° | 408.4 | 398.8 | 397.2 | 397.6 | 401.7 | 401.3 | 396.4 | 392.2 | 391.4 | 392.2 | 400.1 |
| 15° | 443.5 | 429.0 | 418.3 | 416.2 | 418.3 | 417.5 | 413.7 | 411.2 | 412.5 | 424.5 | 437.7 |
| 17.5° | 475.0 | 452.6 | 433.2 | 425.7 | 425.3 | 424.1 | 420.4 | 419.5 | 425.7 | 448.1 | 467.5 |
| 20° | 484.1 | 462.1 | 434.4 | 424.9 | 422.8 | 421.6 | 417.5 | 418.7 | 426.6 | 453.4 | 470.0 |
| 22.5° | 472.1 | 451.0 | 422.0 | 412.5 | 410.8 | 410.4 | 406.3 | 407.9 | 414.6 | 438.1 | 451.8 |
| 25° | 449.3 | 431.5 | 401.3 | 393.0 | 393.0 | 392.2 | 388.5 | 389.3 | 393.5 | 414.1 | 427.4 |
| 27.5° | 421.6 | 404.6 | 379.4 | 371.1 | 372.4 | 373.6 | 369.0 | 367.8 | 371.1 | 390.6 | 398.4 |
| 30° | 389.7 | 377.7 | 357.9 | 350.4 | 350.0 | 355.0 | 348.8 | 347.1 | 351.7 | 367.0 | 368.6 |
| 32.5° | 358.7 | 352.9 | 338.8 | 333.1 | 333.5 | 334.3 | 331.0 | 331.0 | 335.1 | 343.4 | 343.0 |
| 35° | 328.5 | 324.8 | 322.3 | 318.2 | 317.7 | 316.1 | 316.1 | 316.9 | 321.5 | 324.4 | 319.0 |
| 37.5° | 299.5 | 303.3 | 306.2 | 302.0 | 298.7 | 298.7 | 298.7 | 302.4 | 306.6 | 305.3 | 296.2 |
| 40° | 273.9 | 281.8 | 290.9 | 286.3 | 278.4 | 278.0 | 279.7 | 285.9 | 292.1 | 284.6 | 276.4 |
| 42.5° | 252.0 | 261.9 | 274.7 | 272.2 | 263.5 | 262.3 | 263.5 | 271.4 | 276.4 | 266.9 | 257.8 |
| 45° | 230.4 | 242.9 | 258.2 | 258.2 | 248.7 | 247.4 | 247.8 | 258.2 | 261.1 | 249.9 | 238.3 |
| 47.5° | 212.2 | 225.9 | 242.0 | 242.0 | 234.2 | 231.7 | 233.8 | 244.5 | 246.6 | 230.9 | 220.1 |
| 50° | 194.9 | 209.8 | 227.6 | 226.3 | 220.9 | 218.9 | 222.6 | 234.2 | 231.7 | 214.3 | 203.1 |
| 52.5° | 172.9 | 188.7 | 213.1 | 214.3 | 211.4 | 211.8 | 216.4 | 223.8 | 216.8 | 195.7 | 186.2 |
| 55° | 153.1 | 169.2 | 193.6 | 200.2 | 200.2 | 199.8 | 201.9 | 207.7 | 201.9 | 176.7 | 165.1 |
| 57.5° | *131.6* | *145.2* | *165.5* | *167.1* | *168.4* | *163.8* | *166.7* | *174.6* | *171.7* | *150.2* | *143.6* |
| 60° | 108.0 | 119.6 | 131.2 | 132.4 | 127.0 | 117.5 | 122.9 | 132.0 | 134.0 | 117.9 | 110.5 |
| 62.5° | 76.5 | 87.7 | 101.4 | 101.4 | 96.0 | 86.5 | 93.5 | 101.4 | 98.5 | 81.9 | 77.4 |
| 65° | 57.1 | 67.4 | 77.8 | 82.3 | 77.8 | 71.2 | 76.5 | 82.3 | 77.8 | 64.1 | 57.5 |
| 67.5° | 36.8 | 43.9 | 50.1 | 53.8 | 54.6 | 53.8 | 56.3 | 54.6 | 49.2 | 40.1 | 36.4 |
| 70° | 22.3 | 26.1 | 29.4 | 32.7 | 35.2 | 36.4 | 37.6 | 33.9 | 28.5 | 23.6 | 22.3 |
| 72.5° | 16.1 | 19.4 | 22.3 | 24.8 | 27.7 | 28.5 | 28.5 | 26.1 | 21.1 | 16.5 | 15.3 |
| 75° | 11.2 | 14.1 | 16.5 | 18.2 | 20.7 | 21.5 | 21.5 | 19.4 | 15.7 | 12.0 | 10.8 |
| 77.5° | 0.4 | 2.9 | 2.9 | 2.5 | 3.3 | 4.1 | 4.1 | 5.0 | 4.6 | 3.3 | 2.9 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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):**

| | 185° | 195° | 205° | 215° | 225° | 235° | 245° | 255° | 265° | 270° | 275° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 |
| 2.5° | 462.1 | 477.0 | 481.2 | 496.5 | 510.1 | 523.8 | 540.3 | 550.3 | 565.2 | 575.5 | 581.3 |
| 5° | 416.6 | 429.0 | 443.9 | 466.7 | 490.3 | 516.3 | 547.8 | 575.1 | 609.4 | 634.7 | 642.9 |
| 7.5° | 383.5 | 399.7 | 417.0 | 445.6 | 477.9 | 512.6 | 556.9 | 601.6 | 654.1 | 688.4 | 710.4 |
| 10° | 377.3 | 393.9 | 417.0 | 445.2 | 479.1 | 518.8 | 573.0 | 630.9 | 696.7 | 738.5 | 763.3 |
| 12.5° | 407.1 | 424.9 | 434.8 | 447.7 | 473.3 | 517.6 | 587.1 | 660.7 | 738.1 | 783.6 | 810.1 |
| 15° | 451.0 | 466.7 | 450.6 | 434.4 | 451.0 | 504.3 | 594.9 | 685.6 | 774.5 | 827.0 | 854.4 |
| 17.5° | 481.2 | 482.4 | 447.2 | 412.9 | 417.5 | 480.3 | 597.8 | 710.4 | 813.4 | 868.4 | 897.0 |
| 20° | 478.3 | 468.3 | 432.8 | 394.7 | 380.6 | 449.3 | 594.5 | 732.3 | 852.7 | 910.2 | 938.3 |
| 22.5° | 455.9 | 444.3 | 414.1 | 376.9 | 349.6 | 412.5 | 588.7 | 752.2 | 888.7 | 954.1 | 980.5 |
| 25° | 429.0 | 416.6 | 391.8 | 359.1 | 329.7 | 376.9 | 584.2 | 779.5 | 934.2 | 1011.2 | 1031.8 |
| 27.5° | 397.6 | 386.8 | 365.7 | 342.2 | 321.5 | 350.0 | 582.9 | 815.5 | 989.2 | 1080.7 | 1095.1 |
| 30° | 367.0 | 357.1 | 340.5 | 326.8 | 318.2 | 334.3 | 578.8 | 853.9 | 1055.0 | 1160.5 | 1176.2 |
| 32.5° | 337.6 | 327.7 | 317.3 | 315.3 | 315.7 | 328.5 | 564.7 | 892.0 | 1133.2 | 1276.4 | 1287.9 |
| 35° | 312.4 | 300.8 | 296.6 | 301.6 | 310.7 | 318.6 | 525.0 | 923.4 | 1217.2 | 1402.5 | 1412.1 |
| 37.5° | 288.4 | 276.8 | 276.4 | 288.4 | 298.3 | 303.3 | 478.3 | 954.5 | 1330.6 | 1530.8 | 1542.8 |
| 40° | 266.4 | 254.9 | 259.0 | 273.5 | 281.3 | 283.8 | 421.6 | 1001.6 | 1450.5 | 1666.1 | 1659.5 |
| 42.5° | 247.8 | 235.8 | 238.3 | 256.9 | 264.0 | 270.6 | 369.5 | 1040.9 | 1566.0 | 1794.4 | 1792.3 |
| 45° | 229.6 | 220.5 | 218.9 | 239.1 | 245.3 | 271.8 | 331.4 | 1071.2 | 1714.5 | 1957.8 | 1961.1 |
| 47.5° | 211.8 | 204.8 | 205.2 | 213.9 | 229.2 | 278.0 | 299.1 | 1091.0 | 1930.1 | 2216.8 | 2159.3 |
| 50° | 195.7 | 190.3 | 194.9 | 184.9 | 218.9 | 270.2 | 271.4 | 1086.9 | 2170.8 | 2465.0 | 2349.6 |
| 52.5° | 177.9 | 176.7 | 178.7 | 154.7 | 202.3 | 238.3 | 245.3 | 1031.8 | 2283.8 | 2634.6 | 2568.9 |
| 55° | 159.7 | 159.3 | 142.7 | 123.7 | 169.2 | 190.3 | 210.2 | 861.0 | 2280.1 | 2724.8 | 2804.7 |
| 57.5° | *138.2* | *134.9* | *108.4* | *101.0* | *131.6* | *132.4* | *191.6* | *563.9* | *2020.7* | *2508.9* | *2674.4* |
| 60° | 104.7 | 102.2 | 79.4 | 81.9 | 91.8 | 84.8 | 152.7 | 280.9 | 1510.1 | 1954.5 | 2141.1 |
| 62.5° | 72.4 | 69.1 | 59.2 | 63.3 | 59.2 | 48.4 | 93.5 | 139.0 | 914.8 | 1234.2 | 1403.4 |
| 65° | 53.0 | 49.2 | 40.5 | 34.8 | 27.7 | 27.7 | 35.6 | 53.4 | 354.2 | 524.6 | 632.6 |
| 67.5° | 32.7 | 31.0 | 24.0 | 17.4 | 17.0 | 18.2 | 18.6 | 26.5 | 57.1 | 91.0 | 111.3 |
| 70° | 21.1 | 19.4 | 16.1 | 11.2 | 10.3 | 10.8 | 11.2 | 12.4 | 14.5 | 15.7 | 19.0 |
| 72.5° | 14.5 | 13.7 | 11.6 | 6.2 | 5.0 | 5.4 | 5.8 | 5.8 | 7.0 | 6.6 | 7.9 |
| 75° | 10.3 | 9.5 | 8.3 | 2.9 | 1.7 | 2.1 | 2.5 | 2.1 | 2.5 | 1.7 | 2.1 |
| 77.5° | 2.9 | 2.9 | 2.1 | 0.4 | 0.0 | 0.4 | 0.8 | 0.8 | 0.4 | 0.0 | 0.0 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P631659
CATALOG NUMBER: GWS-SA2B-727-U-SLL-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

| | 285° | 295° | 305° | 315° | 325° | 335° | 345° | 355° | 359° | 360° |
|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 525.9 | 525.9 | 525.9 | *525.9* | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 |
| 2.5° | 596.2 | 605.7 | 609.4 | *604.0* | 608.6 | 601.2 | 598.3 | 587.1 | 586.3 | 584.2 |
| 5° | 676.5 | 698.0 | 710.8 | *718.7* | 709.5 | 699.6 | 684.7 | 659.1 | 651.2 | 646.2 |
| 7.5° | 755.5 | 789.0 | 810.9 | *821.3* | 818.8 | 798.5 | 771.6 | 728.6 | 713.3 | 705.8 |
| 10° | 824.2 | 865.1 | 891.6 | *904.4* | 899.0 | 881.2 | 842.8 | 789.0 | 768.7 | 764.2 |
| 12.5° | 872.1 | 909.8 | 928.0 | *939.2* | 939.6 | 932.6 | 896.1 | 841.9 | 817.9 | 812.2 |
| 15° | 902.3 | 918.5 | 918.9 | *925.5* | 937.1 | 952.8 | 935.9 | 887.9 | 862.2 | 853.5 |
| 17.5° | 921.4 | 903.6 | 885.4 | *887.0* | 906.1 | 947.9 | 965.2 | 928.4 | 901.1 | 891.6 |
| 20° | 935.0 | 878.8 | 844.8 | *845.3* | 864.7 | 928.0 | 985.5 | 967.7 | 939.6 | 930.9 |
| 22.5° | 943.7 | 856.8 | 808.4 | *807.2* | 827.9 | 904.4 | 1004.1 | 1014.5 | 986.7 | 976.8 |
| 25° | 961.5 | 846.5 | 786.5 | *793.5* | 811.7 | 897.0 | 1029.4 | 1076.5 | 1050.9 | 1037.6 |
| 27.5° | 993.4 | 856.8 | 784.4 | *800.6* | 821.3 | 918.9 | 1073.2 | 1159.3 | 1132.8 | 1117.9 |
| 30° | 1048.4 | 895.7 | 816.3 | *838.6* | 863.5 | 976.4 | 1146.9 | 1274.7 | 1236.6 | 1222.6 |
| 32.5° | 1136.9 | 976.4 | 914.8 | *962.8* | 986.7 | 1070.7 | 1257.3 | 1404.2 | 1373.2 | 1345.0 |
| 35° | 1259.0 | 1160.5 | 1153.5 | *1265.2* | 1259.4 | 1249.5 | 1393.0 | 1563.1 | 1516.3 | 1489.0 |
| 37.5° | 1427.0 | 1456.7 | 1508.9 | *1619.8* | 1616.0 | 1540.3 | 1571.4 | 1713.3 | 1689.3 | 1654.1 |
| 40° | 1636.7 | 1700.0 | 1788.6 | *1947.4* | 1897.8 | 1802.6 | 1790.2 | 1867.2 | 1847.7 | 1806.4 |
| 42.5° | 1760.4 | 1869.7 | 2038.5 | *2181.2* | 2141.5 | 1975.2 | 1961.1 | 2072.8 | 2030.2 | 1985.1 |
| 45° | 1817.9 | 2007.8 | 2338.8 | *2532.0* | 2411.6 | 2089.8 | 2084.4 | 2340.9 | 2316.9 | 2256.5 |
| 47.5° | 1844.4 | 2147.3 | 2690.5 | *2983.0* | 2757.9 | 2190.3 | 2170.8 | 2729.8 | 2698.4 | 2627.2 |
| 50° | 1873.8 | 2339.7 | 3114.2 | *3505.5* | 3176.2 | 2304.1 | 2318.1 | 3092.2 | 3079.0 | 2995.0 |
| 52.5° | 1938.3 | 2543.2 | 3635.9 | *4103.0* | 3683.4 | 2482.4 | 2570.9 | 3434.0 | 3344.6 | 3247.8 |
| 55° | 2035.1 | 2765.0 | 4178.7 | *4713.2* | 4201.0 | 2721.9 | 2844.4 | 3615.6 | 3364.9 | 3257.7 |
| 57.5° | *1928.0* | *2820.4* | *4500.2* | *5139.4* | *4430.6* | *2722.8* | *2613.1* | *3300.7* | *2959.4* | *2855.6* |
| 60° | 1530.0 | 2623.9 | 4376.4 | *5047.1* | 4235.0 | 2417.8 | 2000.8 | 2577.1 | 2242.0 | 2172.5 |
| 62.5° | 1034.3 | 2200.6 | 3852.7 | *4268.5* | 3624.7 | 1901.9 | 1300.4 | 1676.0 | 1388.1 | 1330.6 |
| 65° | 566.8 | 1641.7 | 3112.9 | *3229.2* | 2837.0 | 1328.5 | 669.0 | 727.3 | 554.0 | 528.3 |
| 67.5° | 156.4 | 1142.7 | 2290.4 | *2142.3* | 1990.5 | 865.1 | 172.9 | 129.9 | 92.7 | 91.8 |
| 70° | 39.3 | 755.9 | 1372.3 | *1414.5* | 1220.5 | 554.0 | 33.1 | 15.7 | 12.4 | 12.0 |
| 72.5° | 16.5 | 325.2 | 651.2 | *748.4* | 624.7 | 256.5 | 12.0 | 4.6 | 3.7 | 2.9 |
| 75° | 2.1 | 26.1 | 55.4 | *84.0* | 57.5 | 27.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 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 |
| 90° | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

## Test Information

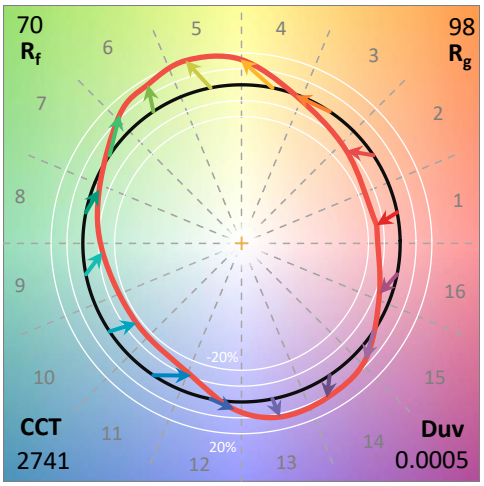
| | |
|---|---|
| Test Method: | LM-79-2008 |
| Report Number: | SP1-1908-441-1-R4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/28/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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 |

Cooper Lighting Solutions Photometric Lab
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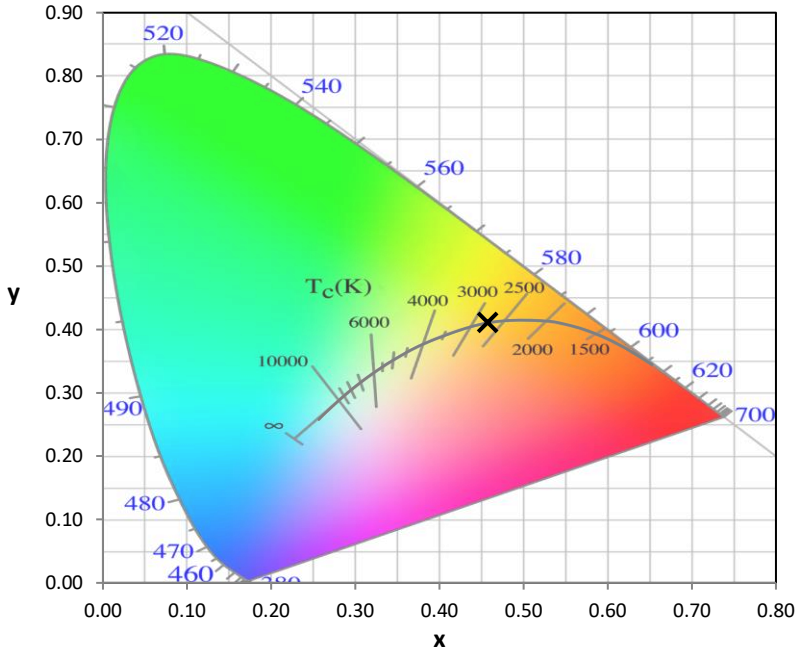
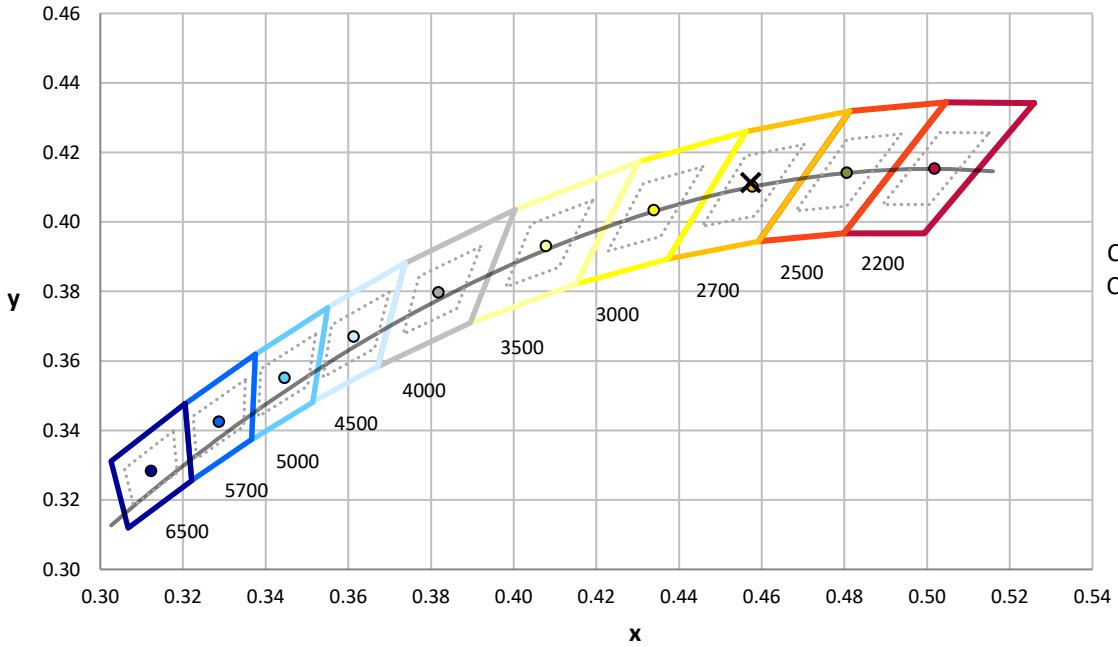
Peachtree City, GA 30269

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

## CIE 1931 Chromaticity Diagram




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



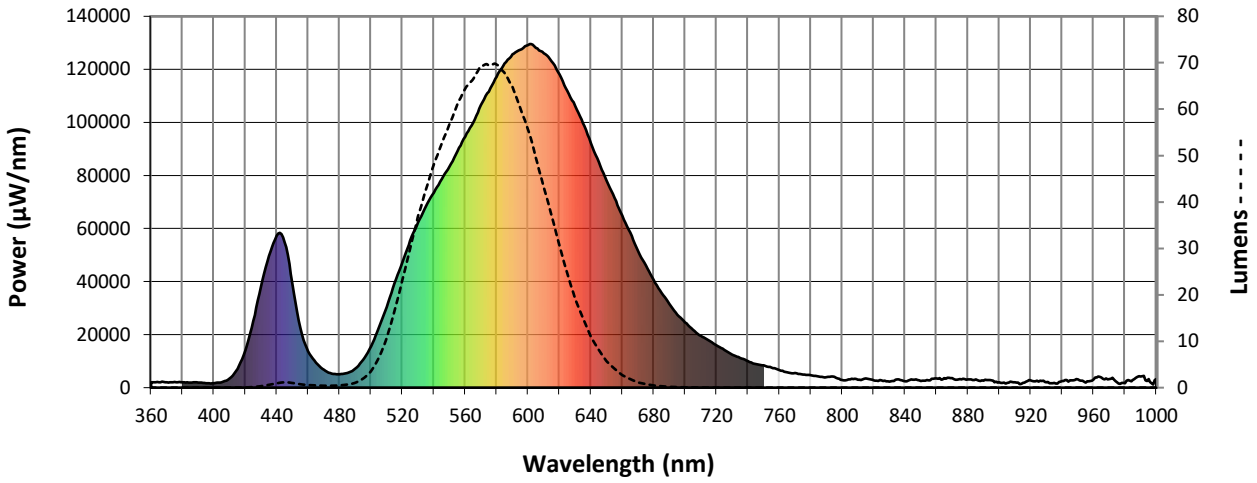

CCT = 2741K
CIE x = 0.4573
CIE y = 0.4113
Duv = 0.0005

Point lies inside the ANSI 2700K 4-step quadrangle

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

## Photopic Flux vs. Wavelength



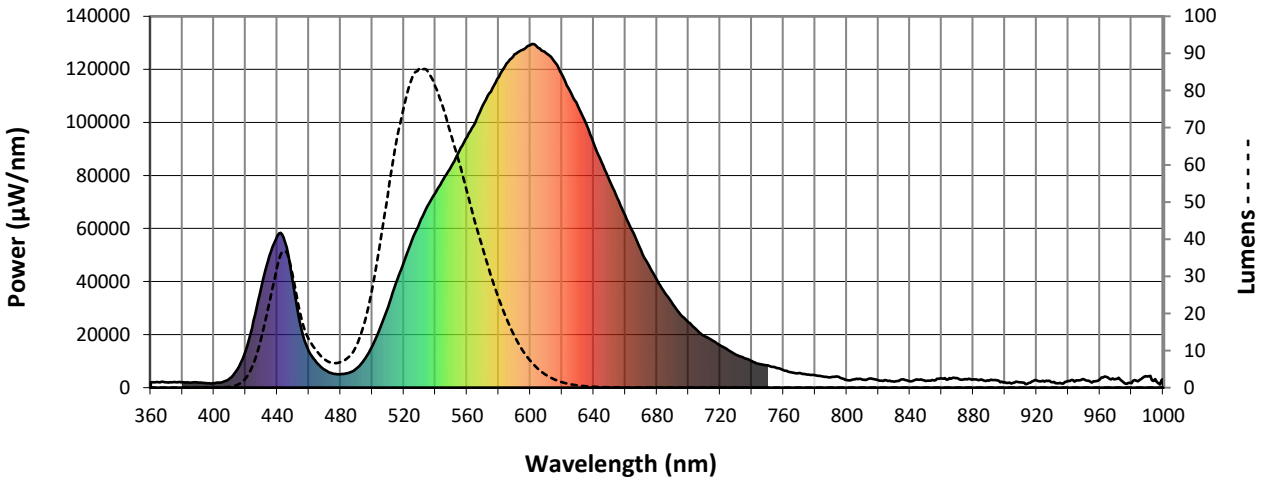

**Photopic Lumens: 6211.7**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (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 | | | |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

## Scotopic Flux vs. Wavelength



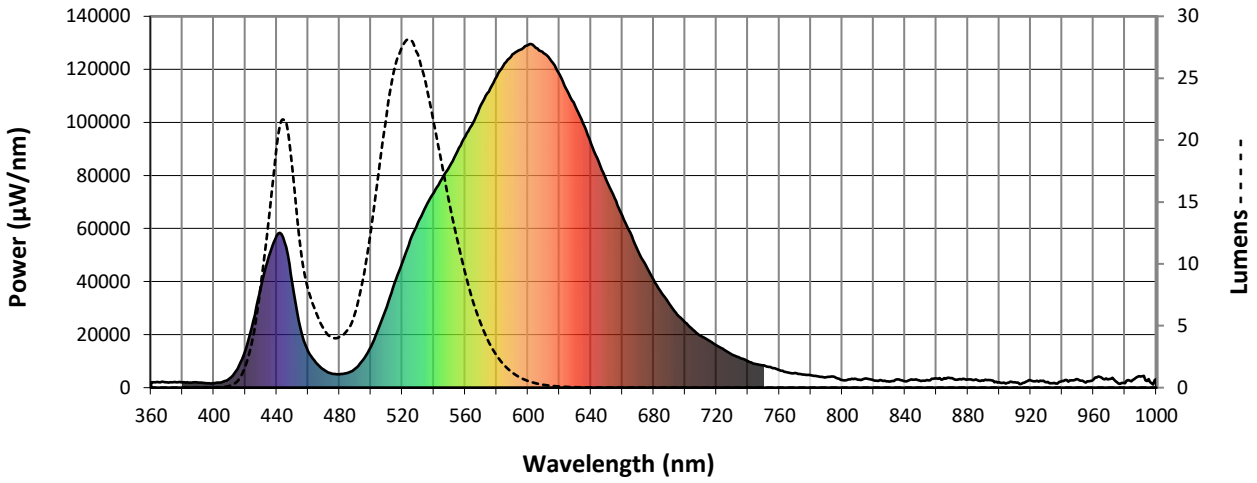

**Scotopic Lumens: 6474.3** **S/P: 1.04**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (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 | | | |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

## Melanopic Flux vs. Wavelength




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

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (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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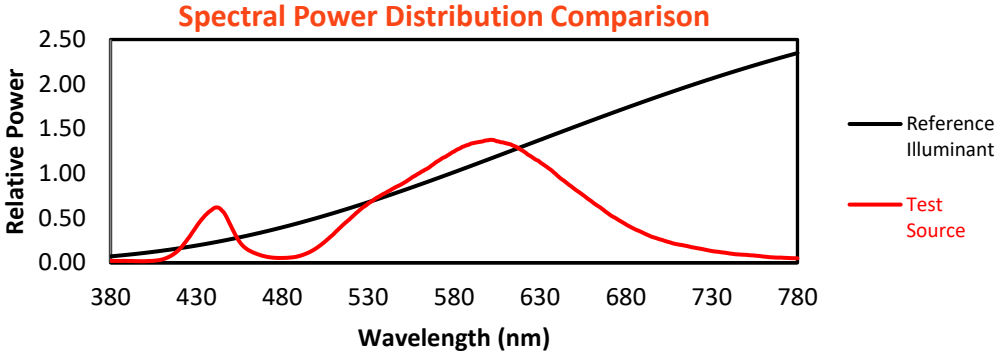
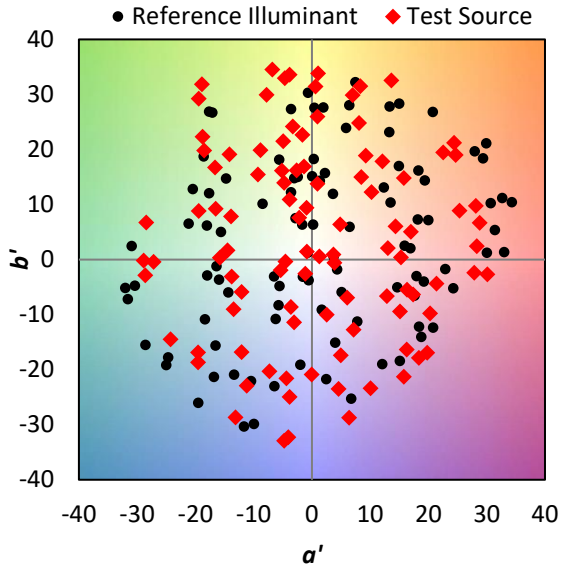
## Summary

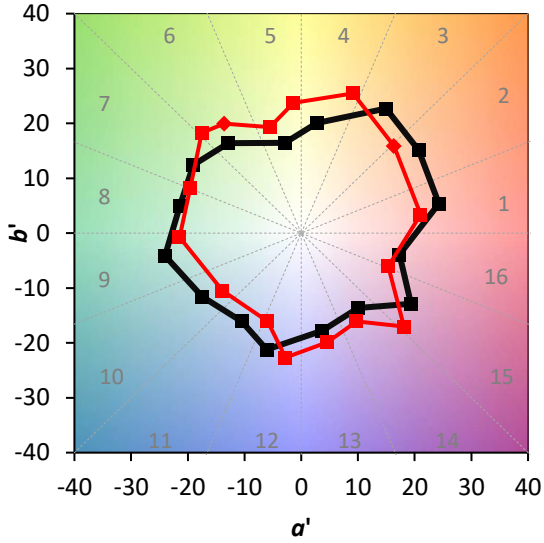
$R_f$ = 69.9
$R_g$ = 98.3
CIE $R_a$ = 71.5
$R_9$ = -16.1

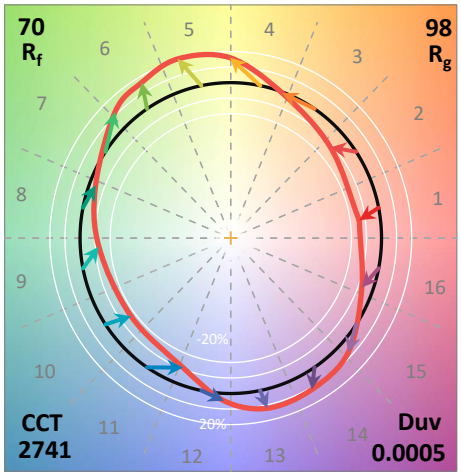
## Spectral Power Distribution Comparison

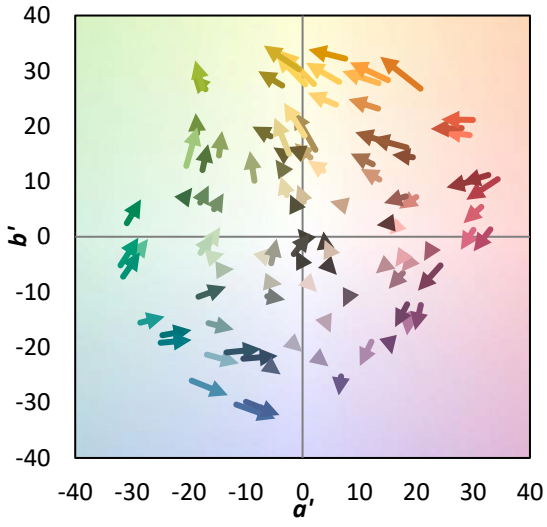



## Color Vector Graphics



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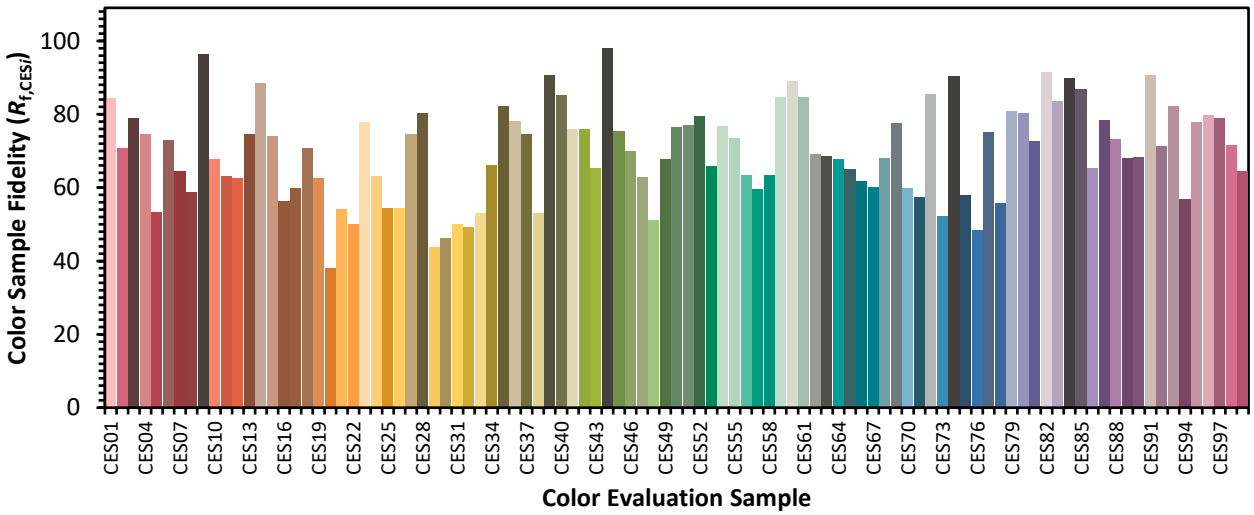
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| 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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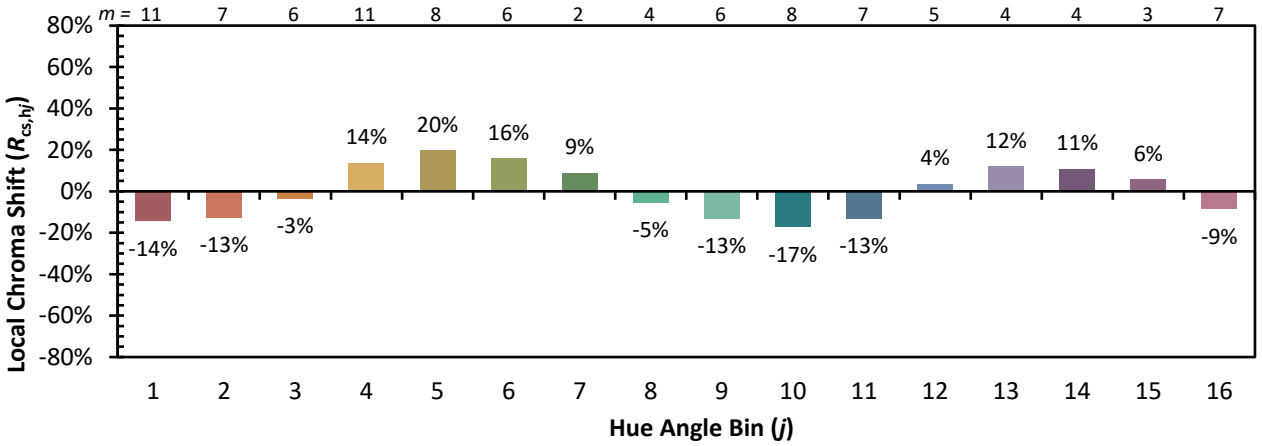
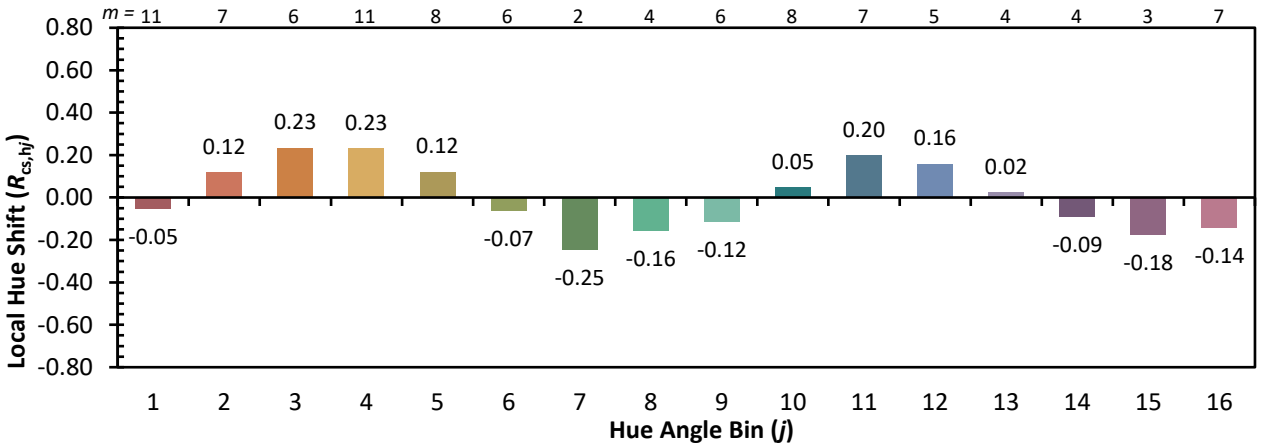
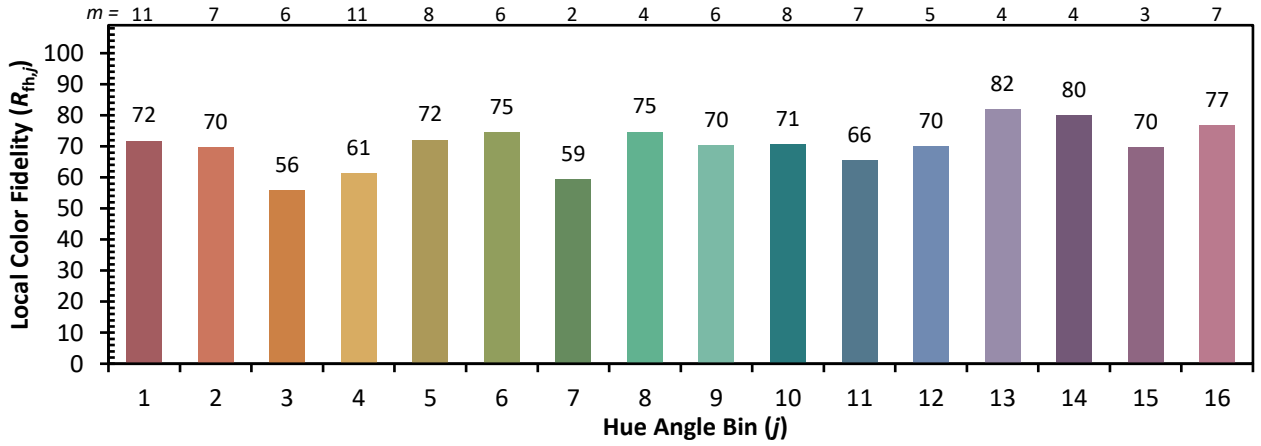
### Color Rendition by Hue-Angle Bin



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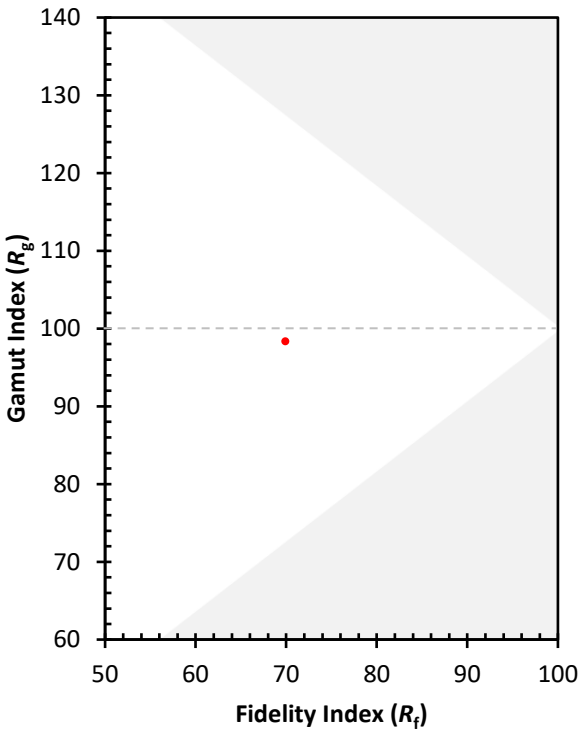
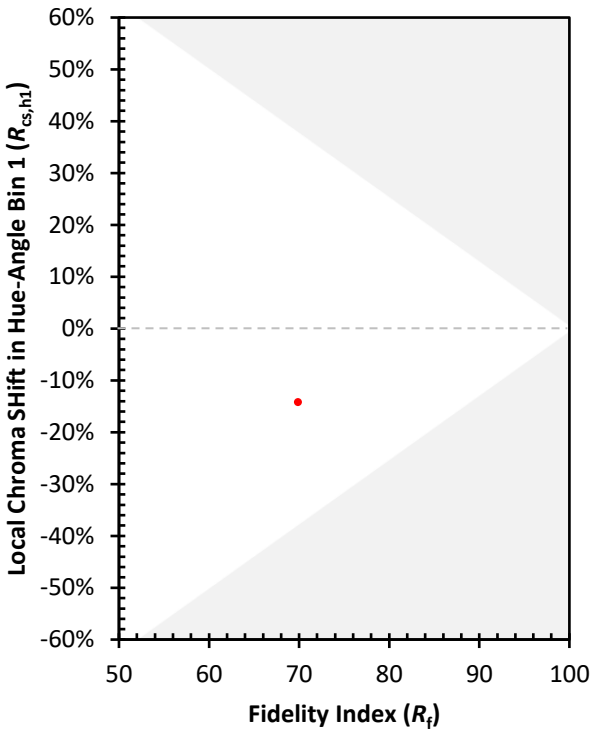
### Measure Comparisons




(END OF REPORT)