

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

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Peachtree City, GA 30269

Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1502876

Luminaire Tested: PRV-P-30-730-U-T2RE

Issue Date: 07/22/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1502876  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 7/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-30-730-U-T2RE  
Description: PREVAIL PETITE DISCRETE LED 1 SQUARE 30W 70CRI 3000K FIXTURE w/ TYPE II  
ROADWAY ILLUMINANCE DISTRIBUTION OPTIC  
Light Source: (10) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4464.9 lumens  
Efficiency: N/A  
Efficacy: 135.7 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1

Input Watts (W): 32.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 10.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

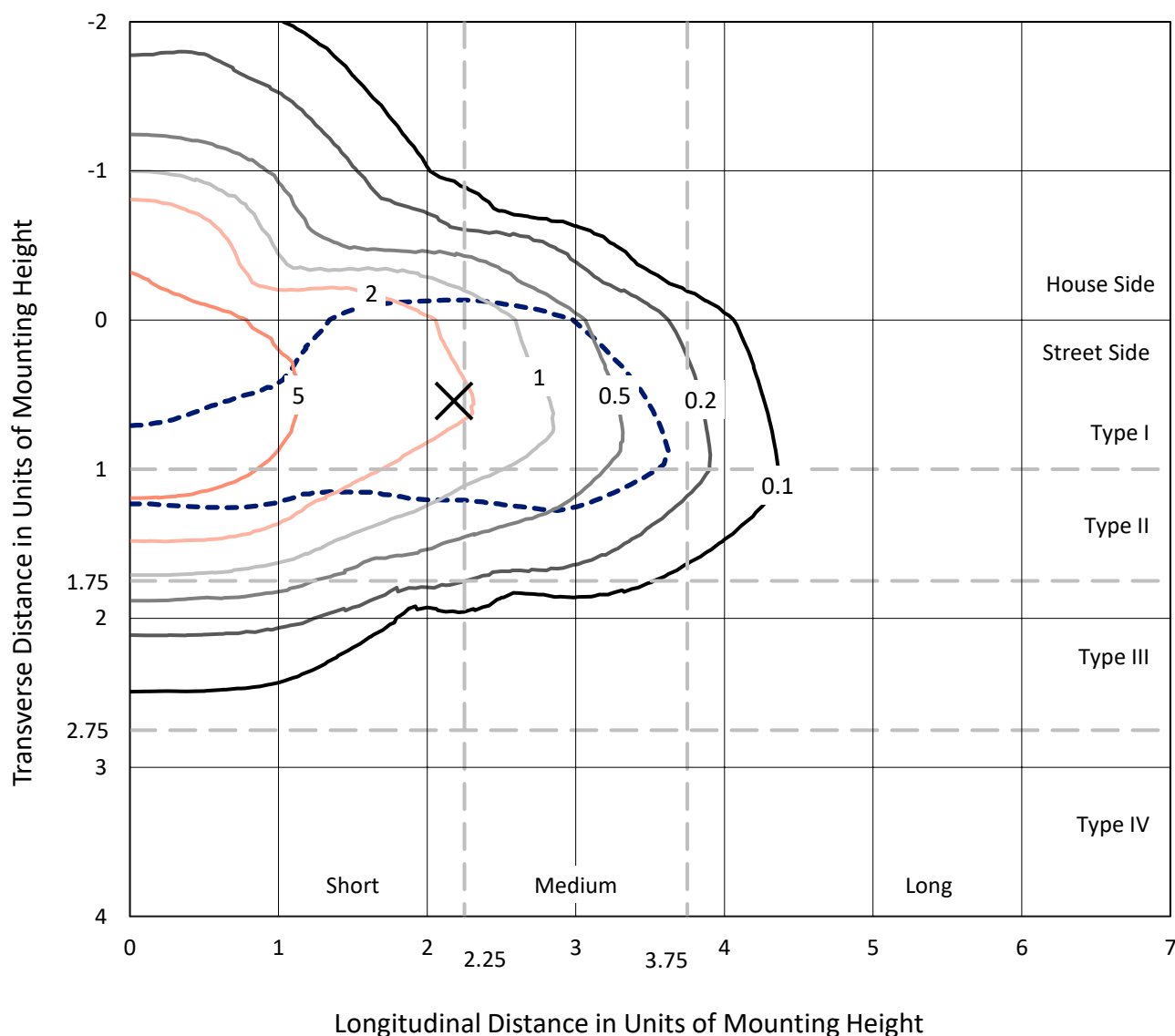
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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

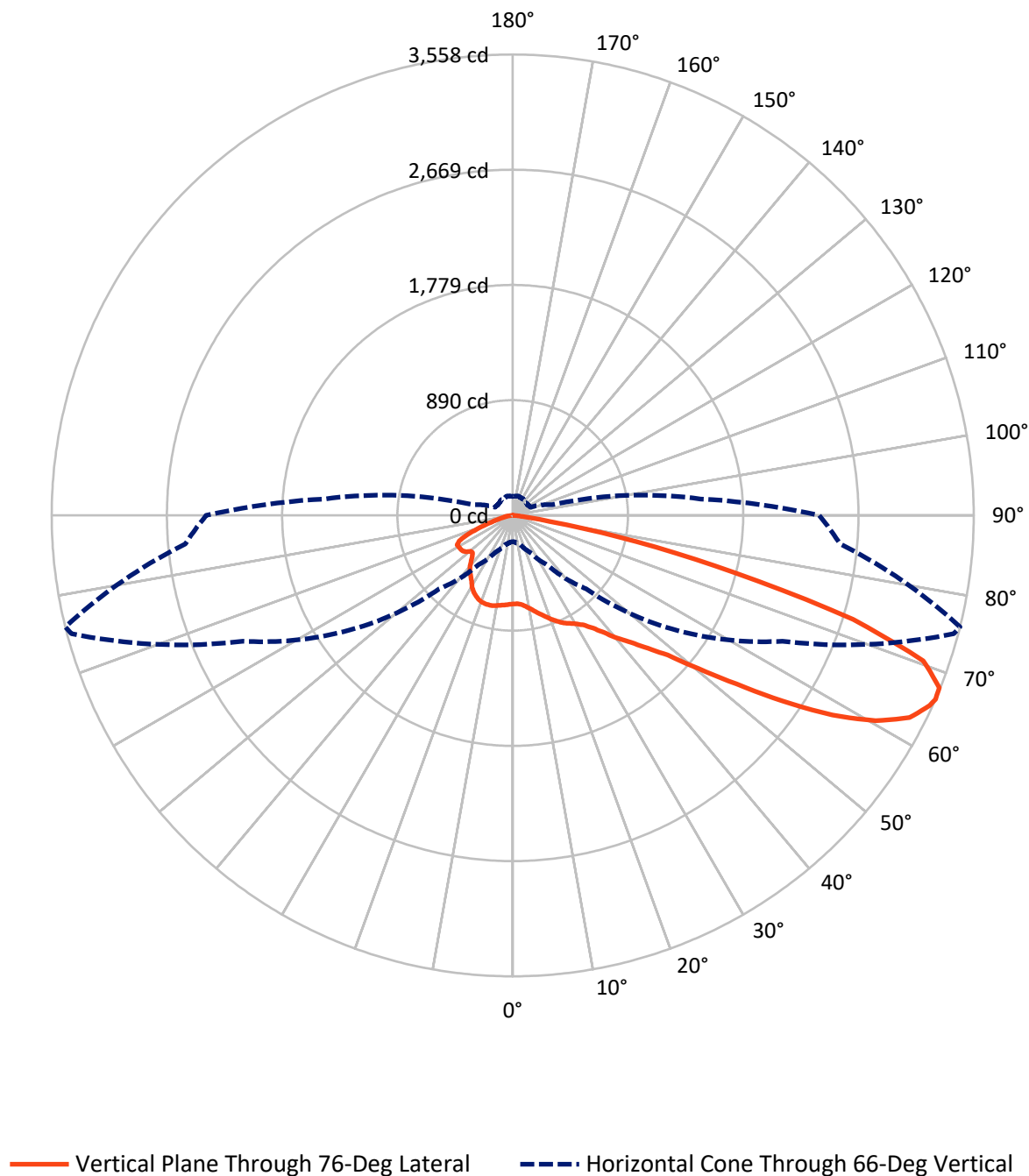


Based on 10 foot mounting height. Maximum calculated value = 9.6 fc  
 Type II - Short - N/A

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## Luminous Intensity Polar Plot



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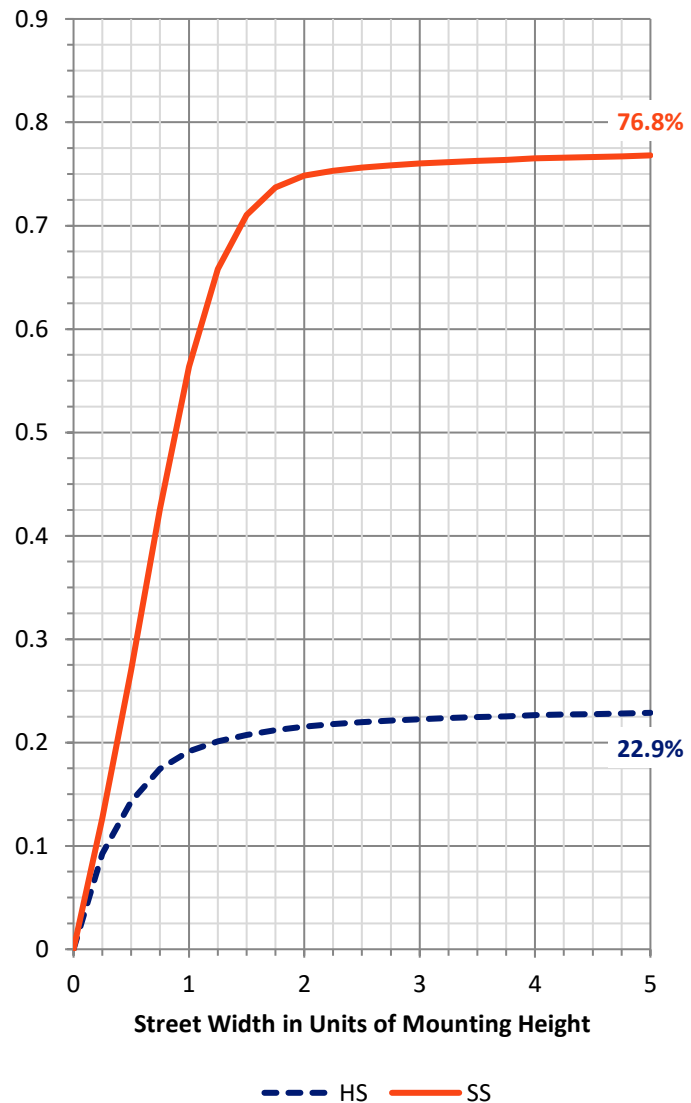
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1028.0   | 0.0    | 1028.0 |
|                    | % Fixture | 23.0     | 0.0    | 23.0   |
| <b>Street Side</b> | Lumens    | 3436.9   | 0.0    | 3436.9 |
|                    | % Fixture | 77.0     | 0.0    | 77.0   |
| <b>Total</b>       | Lumens    | 4464.9   | 0.0    | 4464.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 64.3   | 1.4       |
| 10°-20°   | 188.7  | 4.2       |
| 20°-30°   | 359.1  | 8.0       |
| 30°-40°   | 625.2  | 14.0      |
| 40°-50°   | 906.3  | 20.3      |
| 50°-60°   | 1040.5 | 23.3      |
| 60°-70°   | 869.1  | 19.5      |
| 70°-80°   | 375.8  | 8.4       |
| 80°-90°   | 35.9   | 0.8       |
| 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°    | 4464.9 | 100.0     |
| 0°-180°   | 4464.9 | 100.0     |

**Coefficient of Utilization**



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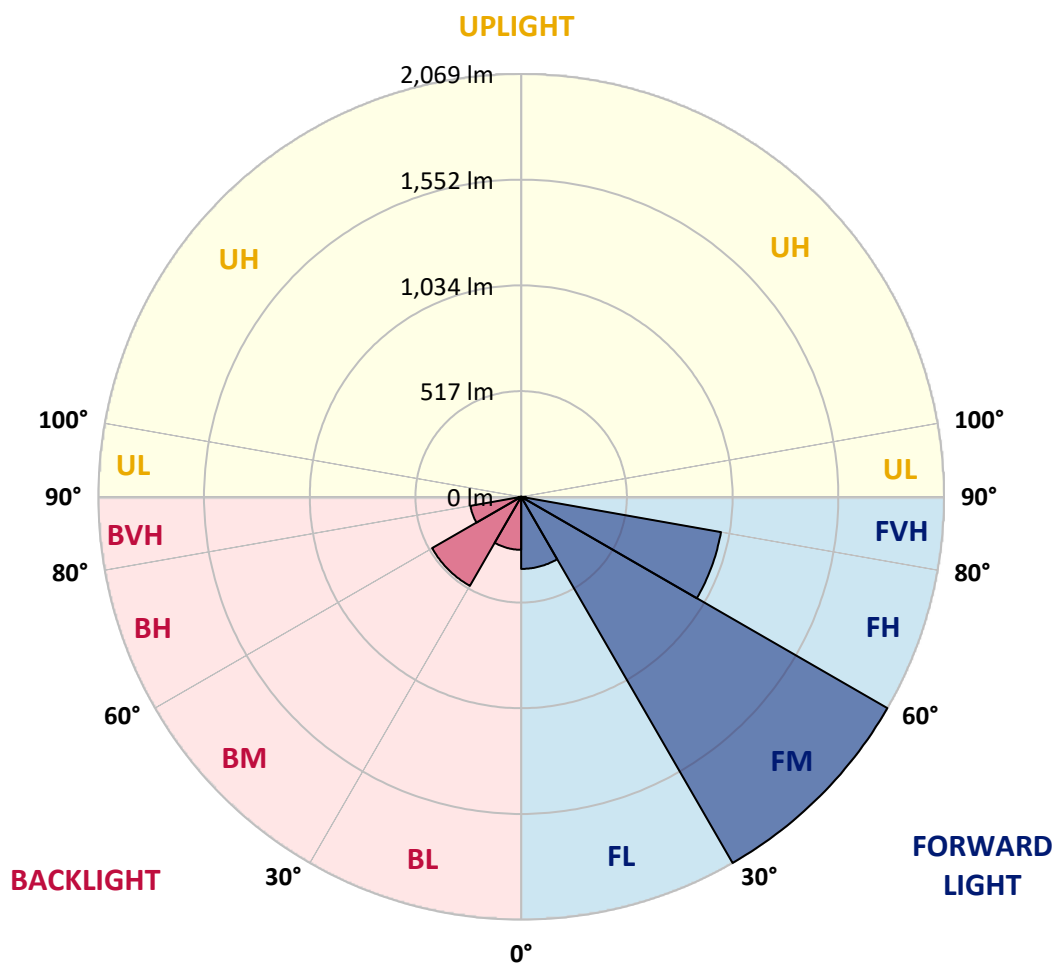
CATALOG NUMBER: PRV-P-30-730-U-T2RE

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 352.7  | 7.9       |                         |      |         |
| FM   | (30°-60°)   | 2068.7 | 46.3      |                         |      |         |
| FH   | (60°-80°)   | 992.6  | 22.2      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 22.9   | 0.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 259.4  | 5.8       | B1/500                  |      |         |
| BM   | (30°-60°)   | 503.3  | 11.3      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 252.3  | 5.7       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 13.0   | 0.3       |                         |      | 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 II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 76°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  | 683.5  |
| 2.5°  | 688.3  | 690.2  | 693.0  | 693.0  | 693.0  | 688.3  | 687.3  | 684.5  | 684.5  | 682.5  | 685.4  |
| 5°    | 689.2  | 691.1  | 697.8  | 705.4  | 710.2  | 708.3  | 705.4  | 696.8  | 691.1  | 690.2  | 691.1  |
| 7.5°  | 628.3  | 630.2  | 641.6  | 657.8  | 677.8  | 696.8  | 717.8  | 718.7  | 706.3  | 708.3  | 702.5  |
| 10°   | 591.2  | 590.2  | 595.9  | 606.4  | 633.0  | 667.3  | 703.5  | 733.0  | 732.0  | 731.1  | 723.5  |
| 12.5° | 610.2  | 610.2  | 611.2  | 615.0  | 621.6  | 638.8  | 689.2  | 737.8  | 757.8  | 758.7  | 748.2  |
| 15°   | 654.9  | 654.0  | 653.0  | 654.9  | 651.1  | 650.2  | 677.8  | 738.7  | 789.2  | 789.2  | 782.5  |
| 17.5° | 700.6  | 700.6  | 704.4  | 708.3  | 707.3  | 692.1  | 693.0  | 747.3  | 819.6  | 820.6  | 817.7  |
| 20°   | 768.2  | 765.4  | 769.2  | 773.9  | 772.0  | 756.8  | 734.0  | 761.6  | 852.0  | 856.8  | 858.7  |
| 22.5° | 848.2  | 843.4  | 848.2  | 851.0  | 850.1  | 825.3  | 797.7  | 788.2  | 880.6  | 888.2  | 904.4  |
| 25°   | 949.1  | 943.4  | 953.9  | 957.7  | 950.0  | 921.5  | 874.8  | 829.1  | 909.1  | 920.5  | 945.3  |
| 27.5° | 1094.7 | 1089.0 | 1096.6 | 1103.3 | 1086.2 | 1036.7 | 968.1  | 882.5  | 933.9  | 944.3  | 981.5  |
| 30°   | 1305.1 | 1317.5 | 1288.9 | 1274.7 | 1245.1 | 1172.8 | 1080.5 | 951.9  | 960.5  | 971.0  | 1013.8 |
| 32.5° | 1549.8 | 1550.7 | 1528.8 | 1457.4 | 1412.7 | 1328.9 | 1211.8 | 1049.0 | 1001.5 | 1009.1 | 1044.3 |
| 35°   | 1755.4 | 1750.6 | 1729.7 | 1685.9 | 1594.5 | 1495.5 | 1354.6 | 1158.5 | 1057.6 | 1068.1 | 1082.4 |
| 37.5° | 1912.5 | 1909.6 | 1909.6 | 1869.6 | 1789.7 | 1665.9 | 1506.0 | 1288.0 | 1141.4 | 1148.1 | 1135.7 |
| 40°   | 2041.0 | 2037.2 | 2048.6 | 2038.1 | 1977.2 | 1835.4 | 1646.9 | 1400.3 | 1239.4 | 1247.1 | 1190.9 |
| 42.5° | 2152.4 | 2145.7 | 2159.0 | 2164.7 | 2129.5 | 2003.9 | 1793.5 | 1521.2 | 1338.4 | 1339.4 | 1255.6 |
| 45°   | 2261.8 | 2260.9 | 2276.1 | 2284.7 | 2258.0 | 2131.4 | 1921.0 | 1661.2 | 1456.5 | 1464.1 | 1341.3 |
| 47.5° | 2174.3 | 2181.9 | 2247.6 | 2328.5 | 2362.7 | 2252.3 | 2045.7 | 1796.3 | 1612.6 | 1609.7 | 1447.0 |
| 50°   | 1896.3 | 1927.7 | 2055.3 | 2220.9 | 2362.7 | 2342.7 | 2160.0 | 1949.6 | 1828.7 | 1857.3 | 1632.6 |
| 52.5° | 1529.8 | 1520.3 | 1707.8 | 1968.6 | 2232.3 | 2327.5 | 2265.6 | 2121.9 | 2140.0 | 2161.9 | 1832.5 |
| 55°   | 1194.7 | 1215.6 | 1359.4 | 1649.7 | 1944.8 | 2182.8 | 2311.3 | 2316.1 | 2500.8 | 2527.4 | 2024.8 |
| 57.5° | 1014.8 | 1033.8 | 1145.2 | 1408.9 | 1648.8 | 1911.5 | 2256.1 | 2520.8 | 2868.2 | 2909.2 | 2209.5 |
| 60°   | 733.0  | 742.5  | 869.1  | 1125.2 | 1448.9 | 1575.5 | 2088.6 | 2639.8 | 3209.0 | 3218.5 | 2375.1 |
| 62.5° | 418.9  | 432.2  | 506.4  | 742.5  | 1113.8 | 1360.3 | 1843.9 | 2623.6 | 3428.0 | 3438.4 | 2525.5 |
| 65°   | 228.5  | 238.0  | 283.7  | 403.6  | 638.8  | 1054.8 | 1612.6 | 2420.8 | 3515.5 | 3537.4 | 2567.4 |
| 66°   | 202.8  | 206.6  | 236.1  | 312.2  | 466.5  | 801.5  | 1546.9 | 2298.0 | 3526.0 | 3558.4 | 2536.9 |
| 67.5° | 195.1  | 195.1  | 211.3  | 252.3  | 309.4  | 533.1  | 1379.4 | 2140.0 | 3506.0 | 3551.7 | 2460.8 |
| 70°   | 189.4  | 190.4  | 203.7  | 214.2  | 200.9  | 183.7  | 853.9  | 1929.6 | 3269.0 | 3362.3 | 2274.2 |
| 72.5° | 173.3  | 173.3  | 191.3  | 201.8  | 163.7  | 115.2  | 333.2  | 1629.7 | 2678.8 | 2747.3 | 1898.2 |
| 75°   | 143.7  | 145.6  | 163.7  | 179.9  | 151.4  | 94.2   | 100.0  | 932.0  | 1745.9 | 1765.9 | 1280.4 |
| 77.5° | 111.4  | 114.2  | 135.2  | 141.8  | 137.1  | 86.6   | 80.9   | 361.7  | 955.8  | 978.6  | 598.8  |
| 80°   | 80.0   | 82.8   | 102.8  | 112.3  | 109.5  | 83.8   | 69.5   | 113.3  | 305.6  | 288.4  | 183.7  |
| 82.5° | 50.5   | 50.5   | 62.8   | 80.9   | 75.2   | 72.3   | 57.1   | 68.5   | 89.5   | 88.5   | 63.8   |
| 85°   | 18.1   | 20.0   | 28.6   | 36.2   | 34.3   | 38.1   | 33.3   | 38.1   | 41.9   | 40.0   | 24.8   |
| 87.5° | 1.0    | 1.0    | 1.0    | 1.9    | 1.9    | 3.8    | 3.8    | 4.8    | 3.8    | 4.8    | 4.8    |
| 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°    | 683.5  | 683.5  | 683.5 | 683.5 | 683.5 | 683.5 | 683.5 | 683.5 | 683.5 | 683.5 | 683.5 |
| 2.5°  | 685.4  | 685.4  | 687.3 | 689.2 | 691.1 | 687.3 | 686.4 | 686.4 | 682.5 | 683.5 | 685.4 |
| 5°    | 691.1  | 691.1  | 693.0 | 691.1 | 684.5 | 674.0 | 667.3 | 663.5 | 654.9 | 655.9 | 655.9 |
| 7.5°  | 701.6  | 701.6  | 697.8 | 684.5 | 669.2 | 650.2 | 637.8 | 631.1 | 619.7 | 621.6 | 621.6 |
| 10°   | 720.6  | 717.8  | 703.5 | 674.9 | 646.4 | 621.6 | 608.3 | 598.8 | 592.1 | 589.3 | 590.2 |
| 12.5° | 748.2  | 743.5  | 709.2 | 659.7 | 618.8 | 595.0 | 584.5 | 577.8 | 574.0 | 572.1 | 573.1 |
| 15°   | 780.6  | 772.0  | 709.2 | 638.8 | 593.1 | 571.2 | 563.6 | 566.4 | 571.2 | 573.1 | 575.0 |
| 17.5° | 816.8  | 802.5  | 704.4 | 616.9 | 567.4 | 552.1 | 558.8 | 569.3 | 578.8 | 582.6 | 583.5 |
| 20°   | 855.8  | 830.1  | 697.8 | 591.2 | 547.4 | 548.3 | 563.6 | 575.9 | 583.5 | 586.4 | 587.4 |
| 22.5° | 894.8  | 852.0  | 683.5 | 561.6 | 538.8 | 550.2 | 565.5 | 575.9 | 580.7 | 582.6 | 583.5 |
| 25°   | 927.2  | 864.4  | 662.6 | 541.7 | 535.0 | 550.2 | 562.6 | 570.2 | 575.0 | 577.8 | 578.8 |
| 27.5° | 955.8  | 867.2  | 641.6 | 526.4 | 532.1 | 547.4 | 556.9 | 564.5 | 570.2 | 572.1 | 573.1 |
| 30°   | 973.8  | 859.6  | 611.2 | 514.1 | 527.4 | 540.7 | 550.2 | 556.9 | 561.6 | 564.5 | 565.5 |
| 32.5° | 988.1  | 852.9  | 570.2 | 499.8 | 517.9 | 533.1 | 541.7 | 545.5 | 547.4 | 549.3 | 549.3 |
| 35°   | 1002.4 | 852.0  | 538.8 | 481.7 | 504.5 | 522.6 | 525.5 | 521.7 | 518.8 | 514.1 | 515.0 |
| 37.5° | 1017.6 | 857.7  | 514.1 | 459.8 | 482.6 | 500.7 | 496.9 | 484.5 | 473.1 | 457.9 | 454.1 |
| 40°   | 1037.6 | 860.6  | 480.7 | 429.3 | 453.1 | 463.6 | 452.2 | 429.3 | 398.9 | 385.5 | 385.5 |
| 42.5° | 1069.0 | 877.7  | 436.9 | 394.1 | 408.4 | 417.9 | 406.5 | 367.5 | 340.8 | 329.4 | 330.3 |
| 45°   | 1135.7 | 919.6  | 394.1 | 356.0 | 361.7 | 371.3 | 348.4 | 310.3 | 292.2 | 284.6 | 280.8 |
| 47.5° | 1249.9 | 989.1  | 359.8 | 318.0 | 312.2 | 320.8 | 293.2 | 266.5 | 247.5 | 230.4 | 229.4 |
| 50°   | 1457.4 | 1133.8 | 347.5 | 278.0 | 269.4 | 283.7 | 257.0 | 238.0 | 216.1 | 207.5 | 206.6 |
| 52.5° | 1686.9 | 1313.7 | 360.8 | 244.7 | 240.8 | 253.2 | 239.9 | 216.1 | 200.9 | 199.0 | 199.0 |
| 55°   | 1897.2 | 1483.1 | 361.7 | 224.7 | 224.7 | 230.4 | 218.0 | 200.9 | 201.8 | 199.9 | 197.1 |
| 57.5° | 2086.7 | 1572.6 | 357.0 | 214.2 | 209.4 | 211.3 | 204.7 | 193.2 | 210.4 | 187.5 | 181.8 |
| 60°   | 2271.4 | 1577.4 | 358.9 | 204.7 | 188.5 | 186.6 | 192.3 | 183.7 | 200.9 | 173.3 | 170.4 |
| 62.5° | 2377.0 | 1537.4 | 369.4 | 186.6 | 165.6 | 160.9 | 168.5 | 165.6 | 179.0 | 164.7 | 163.7 |
| 65°   | 2385.6 | 1490.8 | 340.8 | 160.9 | 149.5 | 145.6 | 154.2 | 153.3 | 159.0 | 156.1 | 157.1 |
| 66°   | 2365.6 | 1455.5 | 316.0 | 151.4 | 140.9 | 141.8 | 149.5 | 149.5 | 155.2 | 147.6 | 146.6 |
| 67.5° | 2292.3 | 1381.3 | 265.6 | 136.1 | 129.5 | 135.2 | 142.8 | 143.7 | 146.6 | 139.9 | 140.9 |
| 70°   | 2025.7 | 1089.0 | 182.8 | 119.9 | 119.0 | 125.7 | 129.5 | 133.3 | 136.1 | 141.8 | 143.7 |
| 72.5° | 1556.4 | 671.1  | 125.7 | 108.5 | 109.5 | 116.1 | 117.1 | 123.8 | 141.8 | 148.5 | 142.8 |
| 75°   | 959.6  | 340.8  | 97.1  | 92.3  | 98.1  | 103.8 | 105.7 | 111.4 | 143.7 | 139.9 | 122.8 |
| 77.5° | 464.6  | 156.1  | 77.1  | 77.1  | 80.9  | 87.6  | 88.5  | 93.3  | 129.5 | 101.9 | 89.5  |
| 80°   | 143.7  | 81.9   | 60.9  | 60.9  | 62.8  | 63.8  | 68.5  | 74.3  | 85.7  | 54.3  | 55.2  |
| 82.5° | 59.0   | 55.2   | 46.6  | 43.8  | 39.0  | 39.0  | 39.0  | 48.5  | 43.8  | 22.8  | 8.6   |
| 85°   | 26.7   | 22.8   | 21.9  | 18.1  | 17.1  | 15.2  | 15.2  | 23.8  | 17.1  | 5.7   | 0.0   |
| 87.5° | 2.9    | 2.9    | 2.9   | 2.9   | 1.9   | 1.0   | 1.0   | 1.0   | 1.0   | 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   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP2-2501-321-4

Test Date: 04/10/2025

Luminaire Tested: GKO-PB1E-730-U-T4W

Data in this report applies to families of products including GKO-PB1E-730-U-T4W

### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP2 - 165CM SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 04/10/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1E-730-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 3072  
 CIE  $u'$ : 0.2482  
 CIE  $v'$ : 0.5193  
 Duv: -0.0004  
 CIE x: 0.4313  
 CIE y: 0.4010  
 CIE z: 0.1677  
 Peak Wavelength (nm): 593  
 Dominant Wavelength (nm): 582  
 Purity: 49.8225  
 R<sub>f</sub>: 74.7  
 R<sub>g</sub>: 94.2

CRI (Ra): 71.7  
 R1: 68.1  
 R2: 82.1  
 R3: 93.4  
 R4: 67.3  
 R5: 67.2  
 R6: 74.9  
 R7: 77.5  
 R8: 43.4  
 R9: -33.9  
 R10: 58.6  
 R11: 62.0  
 R12: 48.5  
 R13: 70.7  
 R14: 96.4  
 R15: 60.2



### Test Conditions

Stabilization Time: 30M  
 Operation Time: 1H 30M  
 Sphere Temperature (°C): 25.7

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| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN2187                | 1/6/2025         | 7/6/2025             |
| Power Meter                    | INXT2011002           | 1/21/2025        | 1/21/2026            |
| AC Power Source                | IN0458                | 10/22/2024       | 10/22/2025           |
| DC Power Source                | IN0212                | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | IN4036B               | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | IN0046                | 10/22/2024       | 10/22/2025           |

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|
| 360               | 0                                      | NR                             | 490               | 114                                    | NR                             | 620               | 817                                    | NR                             | 750               | 22                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 141                                    | NR                             | 625               | 756                                    | NR                             | 755               | 19                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 189                                    | NR                             | 630               | 693                                    | NR                             | 760               | 16                                     | NR                             | 890               | 0                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 247                                    | NR                             | 635               | 628                                    | NR                             | 765               | 14                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 307                                    | NR                             | 640               | 564                                    | NR                             | 770               | 12                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 366                                    | NR                             | 645               | 504                                    | NR                             | 775               | 10                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 415                                    | NR                             | 650               | 446                                    | NR                             | 780               | 9                                      | NR                             | 910               | 0                                      | NR                             |
| 395               | 2                                      | NR                             | 525               | 455                                    | NR                             | 655               | 393                                    | NR                             | 785               | 8                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 3                                      | NR                             | 530               | 491                                    | NR                             | 660               | 344                                    | NR                             | 790               | 7                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 6                                      | NR                             | 535               | 523                                    | NR                             | 665               | 300                                    | NR                             | 795               | 6                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 11                                     | NR                             | 540               | 556                                    | NR                             | 670               | 260                                    | NR                             | 800               | 5                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 21                                     | NR                             | 545               | 591                                    | NR                             | 675               | 226                                    | NR                             | 805               | 4                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 41                                     | NR                             | 550               | 632                                    | NR                             | 680               | 195                                    | NR                             | 810               | 4                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 76                                     | NR                             | 555               | 679                                    | NR                             | 685               | 167                                    | NR                             | 815               | 3                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 129                                    | NR                             | 560               | 732                                    | NR                             | 690               | 144                                    | NR                             | 820               | 3                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 205                                    | NR                             | 565               | 787                                    | NR                             | 695               | 123                                    | NR                             | 825               | 2                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 307                                    | NR                             | 570               | 847                                    | NR                             | 700               | 105                                    | NR                             | 830               | 2                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 451                                    | NR                             | 575               | 900                                    | NR                             | 705               | 90                                     | NR                             | 835               | 2                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 603                                    | NR                             | 580               | 944                                    | NR                             | 710               | 77                                     | NR                             | 840               | 2                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 544                                    | NR                             | 585               | 977                                    | NR                             | 715               | 66                                     | NR                             | 845               | 1                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 348                                    | NR                             | 590               | 997                                    | NR                             | 720               | 56                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 249                                    | NR                             | 595               | 998                                    | NR                             | 725               | 48                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 191                                    | NR                             | 600               | 986                                    | NR                             | 730               | 41                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 133                                    | NR                             | 605               | 960                                    | NR                             | 735               | 35                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 107                                    | NR                             | 610               | 921                                    | NR                             | 740               | 30                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 104                                    | NR                             | 615               | 874                                    | NR                             | 745               | 26                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.24

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 114                      | NR            | 620    | 817                      | NR            | 750    | 22                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 141                      | NR            | 625    | 756                      | NR            | 755    | 19                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 189                      | NR            | 630    | 693                      | NR            | 760    | 16                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 247                      | NR            | 635    | 628                      | NR            | 765    | 14                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 307                      | NR            | 640    | 564                      | NR            | 770    | 12                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 366                      | NR            | 645    | 504                      | NR            | 775    | 10                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 415                      | NR            | 650    | 446                      | NR            | 780    | 9                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 455                      | NR            | 655    | 393                      | NR            | 785    | 8                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 491                      | NR            | 660    | 344                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 6                        | NR            | 535    | 523                      | NR            | 665    | 300                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 11                       | NR            | 540    | 556                      | NR            | 670    | 260                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 21                       | NR            | 545    | 591                      | NR            | 675    | 226                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 41                       | NR            | 550    | 632                      | NR            | 680    | 195                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 76                       | NR            | 555    | 679                      | NR            | 685    | 167                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 129                      | NR            | 560    | 732                      | NR            | 690    | 144                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 205                      | NR            | 565    | 787                      | NR            | 695    | 123                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 307                      | NR            | 570    | 847                      | NR            | 700    | 105                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 451                      | NR            | 575    | 900                      | NR            | 705    | 90                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 603                      | NR            | 580    | 944                      | NR            | 710    | 77                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 544                      | NR            | 585    | 977                      | NR            | 715    | 66                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 348                      | NR            | 590    | 997                      | NR            | 720    | 56                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 249                      | NR            | 595    | 998                      | NR            | 725    | 48                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 191                      | NR            | 600    | 986                      | NR            | 730    | 41                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 133                      | NR            | 605    | 960                      | NR            | 735    | 35                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 107                      | NR            | 610    | 921                      | NR            | 740    | 30                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 104                      | NR            | 615    | 874                      | NR            | 745    | 26                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.3

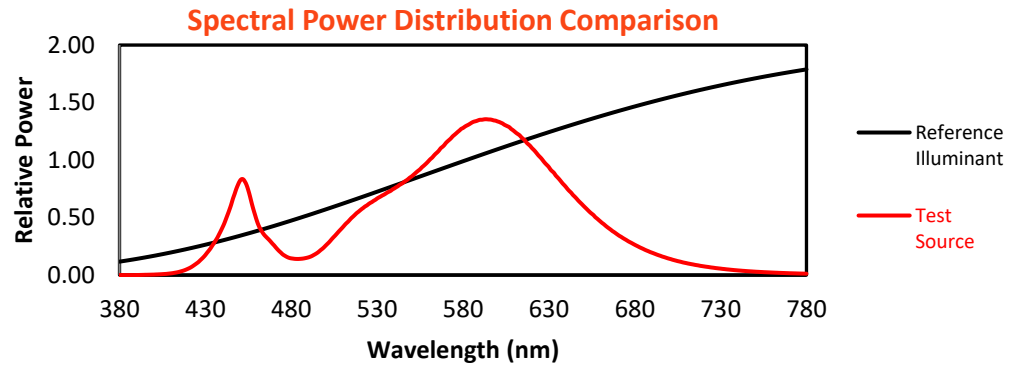
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 114                         | NR               | 620       | 817                         | NR               | 750       | 22                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 141                         | NR               | 625       | 756                         | NR               | 755       | 19                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 189                         | NR               | 630       | 693                         | NR               | 760       | 16                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 247                         | NR               | 635       | 628                         | NR               | 765       | 14                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 307                         | NR               | 640       | 564                         | NR               | 770       | 12                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 366                         | NR               | 645       | 504                         | NR               | 775       | 10                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 415                         | NR               | 650       | 446                         | NR               | 780       | 9                           | NR               | 910       | 0                           | NR               |
| 395       | 2                           | NR               | 525       | 455                         | NR               | 655       | 393                         | NR               | 785       | 8                           | NR               | 915       | 0                           | NR               |
| 400       | 3                           | NR               | 530       | 491                         | NR               | 660       | 344                         | NR               | 790       | 7                           | NR               | 920       | 0                           | NR               |
| 405       | 6                           | NR               | 535       | 523                         | NR               | 665       | 300                         | NR               | 795       | 6                           | NR               | 925       | 0                           | NR               |
| 410       | 11                          | NR               | 540       | 556                         | NR               | 670       | 260                         | NR               | 800       | 5                           | NR               | 930       | 0                           | NR               |
| 415       | 21                          | NR               | 545       | 591                         | NR               | 675       | 226                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 41                          | NR               | 550       | 632                         | NR               | 680       | 195                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 76                          | NR               | 555       | 679                         | NR               | 685       | 167                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 129                         | NR               | 560       | 732                         | NR               | 690       | 144                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 205                         | NR               | 565       | 787                         | NR               | 695       | 123                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 307                         | NR               | 570       | 847                         | NR               | 700       | 105                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 451                         | NR               | 575       | 900                         | NR               | 705       | 90                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 603                         | NR               | 580       | 944                         | NR               | 710       | 77                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 544                         | NR               | 585       | 977                         | NR               | 715       | 66                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 348                         | NR               | 590       | 997                         | NR               | 720       | 56                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 249                         | NR               | 595       | 998                         | NR               | 725       | 48                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 191                         | NR               | 600       | 986                         | NR               | 730       | 41                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 133                         | NR               | 605       | 960                         | NR               | 735       | 35                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 107                         | NR               | 610       | 921                         | NR               | 740       | 30                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 104                         | NR               | 615       | 874                         | NR               | 745       | 26                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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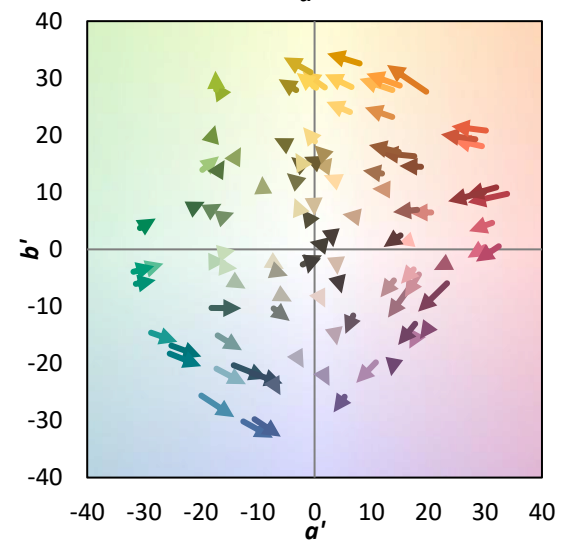
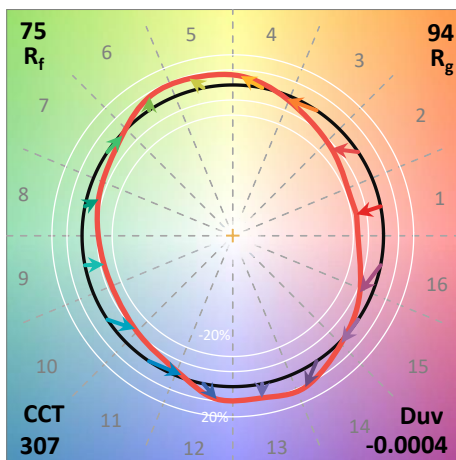
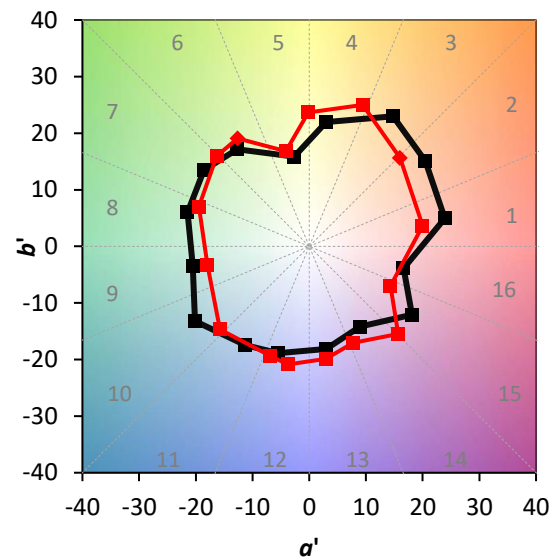
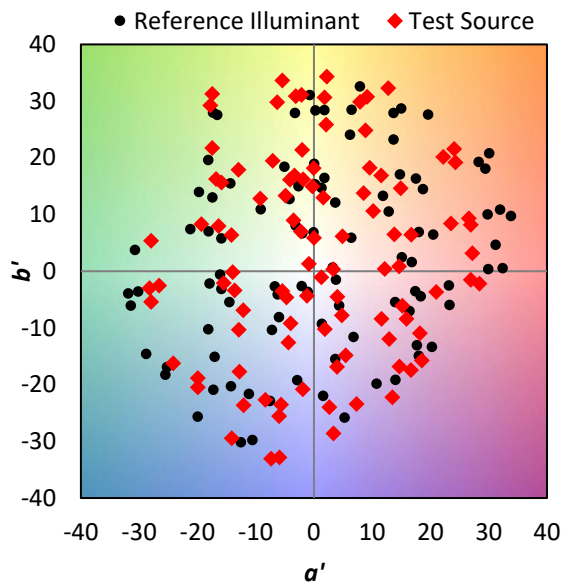
TM-30-18

### Summary

$R_f = 74.7$   
 $R_g = 94.2$   
 $\text{CIE } R_a = 71.7$   
 $R_g = -33.9$

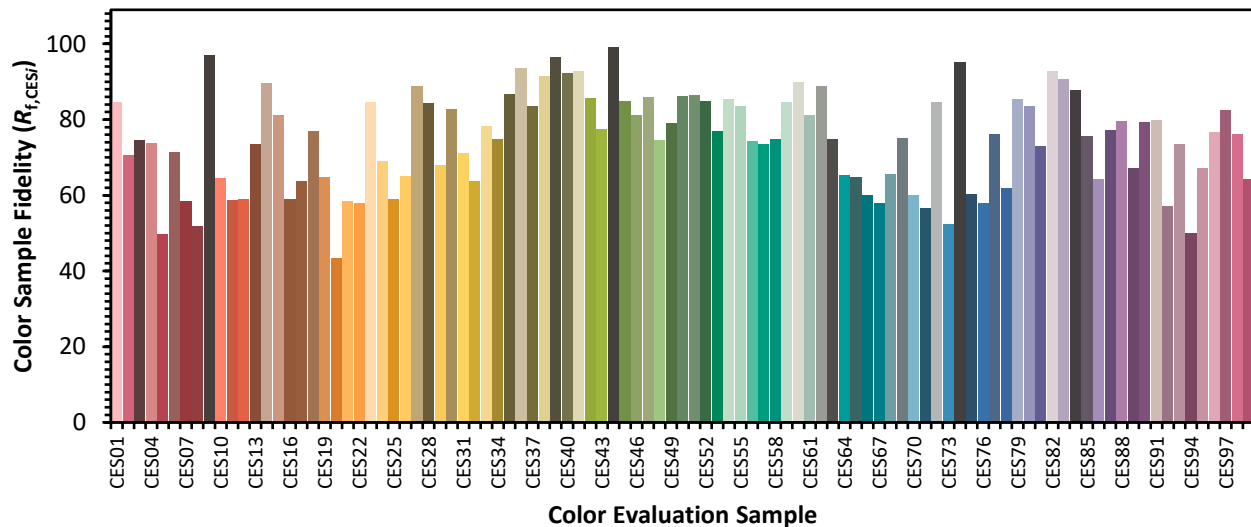


### Color Vector Graphics

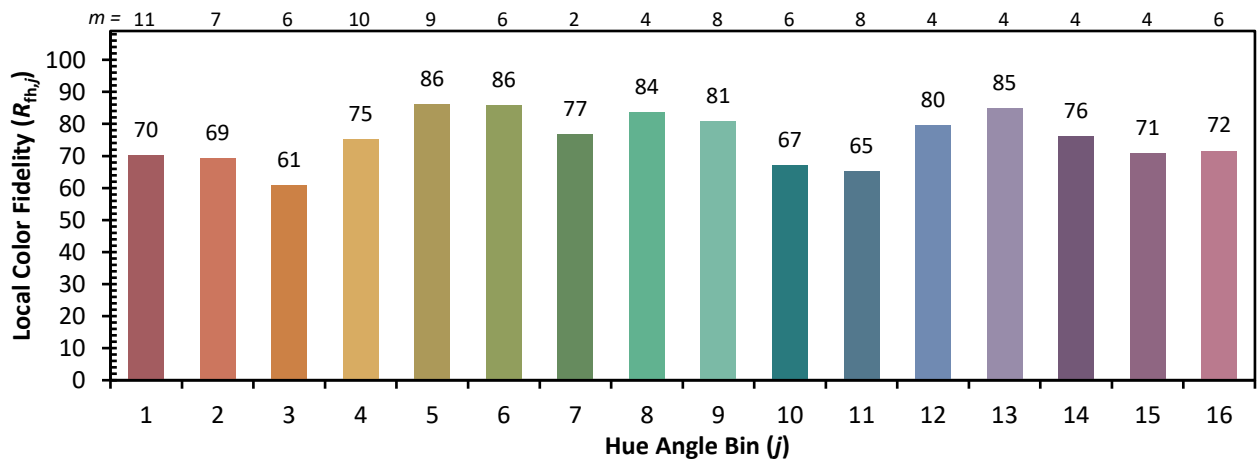


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 86 | CES76 = 58 |
| CES02 = 62 | CES27 = 89 | CES52 = 85 | CES77 = 76 |
| CES03 = 31 | CES28 = 84 | CES53 = 77 | CES78 = 62 |
| CES04 = 71 | CES29 = 68 | CES54 = 85 | CES79 = 85 |
| CES05 = 49 | CES30 = 83 | CES55 = 84 | CES80 = 84 |
| CES06 = 51 | CES31 = 71 | CES56 = 74 | CES81 = 73 |
| CES07 = 41 | CES32 = 64 | CES57 = 74 | CES82 = 93 |
| CES08 = 40 | CES33 = 78 | CES58 = 75 | CES83 = 91 |
| CES09 = 29 | CES34 = 75 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 87 | CES60 = 90 | CES85 = 76 |
| CES11 = 59 | CES36 = 94 | CES61 = 81 | CES86 = 64 |
| CES12 = 65 | CES37 = 84 | CES62 = 89 | CES87 = 77 |
| CES13 = 43 | CES38 = 92 | CES63 = 75 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 65 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 65 | CES90 = 79 |
| CES16 = 47 | CES41 = 93 | CES66 = 60 | CES91 = 80 |
| CES17 = 50 | CES42 = 86 | CES67 = 58 | CES92 = 57 |
| CES18 = 56 | CES43 = 78 | CES68 = 66 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 50 |
| CES20 = 66 | CES45 = 85 | CES70 = 60 | CES95 = 67 |
| CES21 = 87 | CES46 = 81 | CES71 = 57 | CES96 = 77 |
| CES22 = 79 | CES47 = 86 | CES72 = 85 | CES97 = 83 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 95 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 60 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)