

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

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
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: P1462272

Luminaire Tested: PRV-P-90-727-U-5WQ

Issue Date: 06/10/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1462272  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 6/11/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-90-727-U-5WQ  
Description: PREVAIL PETITE DISCRETE LED 2 SQUARES 90W 70CRI 2700K FIXTURE w/ TYPE V  
SQUARE WIDE DISTRIBUTION OPTIC  
Light Source: (20) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11441.4 lumens  
Efficiency: N/A  
Efficacy: 121.1 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B4 - U0 - G2

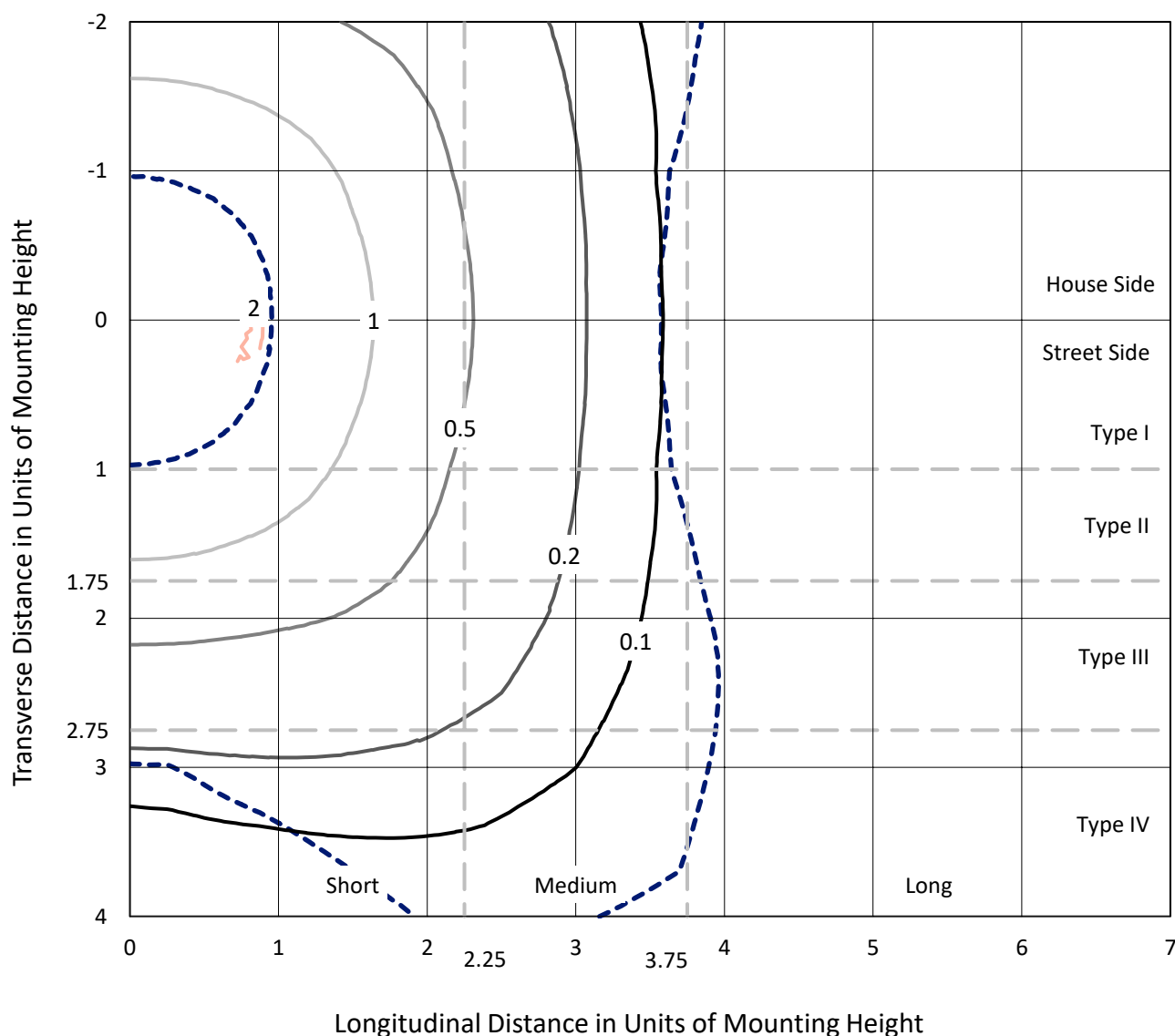
Input Watts (W): 94.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 6.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

REPORT NUMBER: P1462272

CATALOG NUMBER: PRV-P-90-727-U-5WQ

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

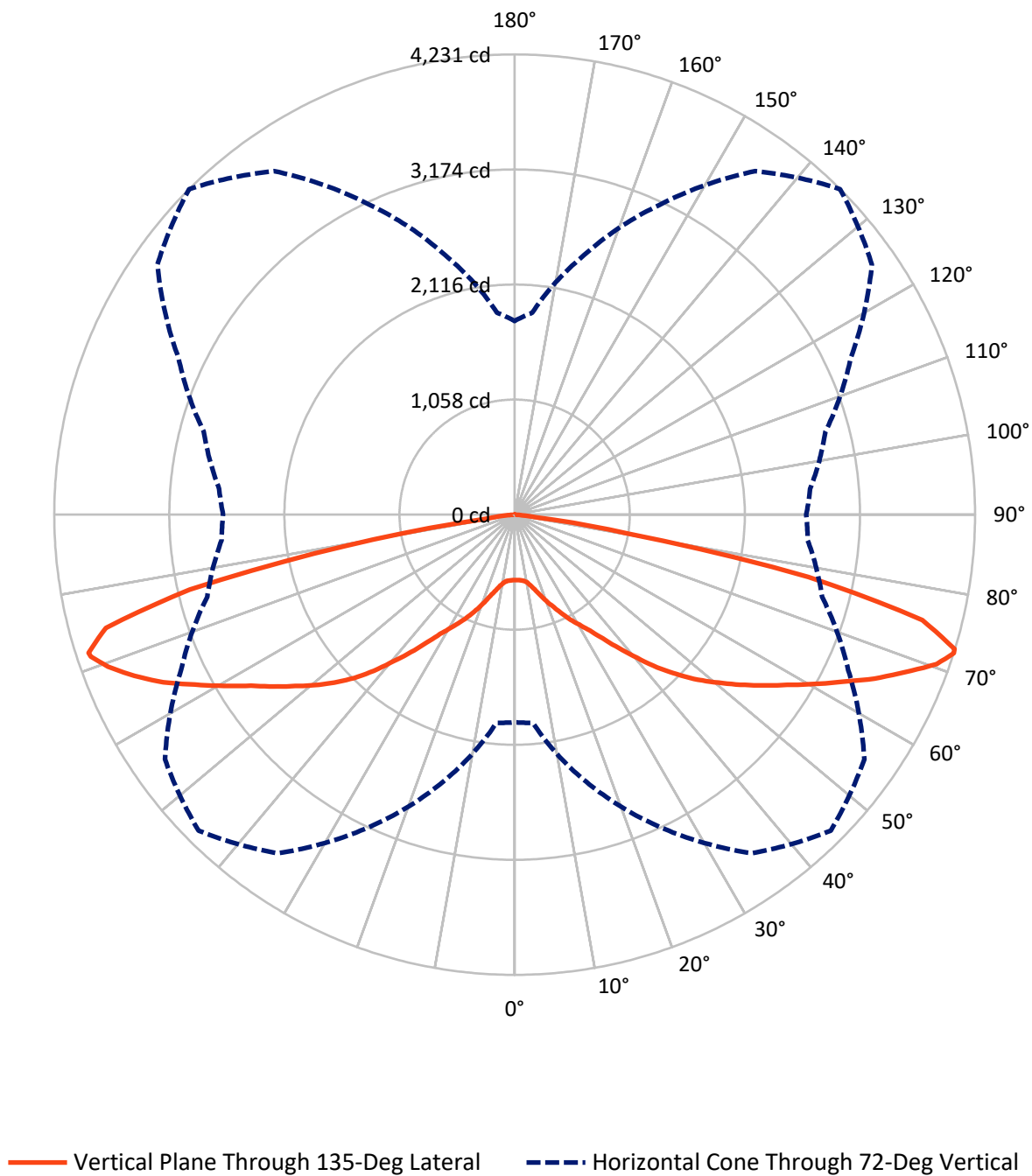


Based on 20 foot mounting height. Maximum calculated value = 2 fc  
 Type V - Short - N/A

REPORT NUMBER: P1462272

CATALOG NUMBER: PRV-P-90-727-U-5WQ

## Luminous Intensity Polar Plot



REPORT NUMBER: P1462272

CATALOG NUMBER: PRV-P-90-727-U-5WQ

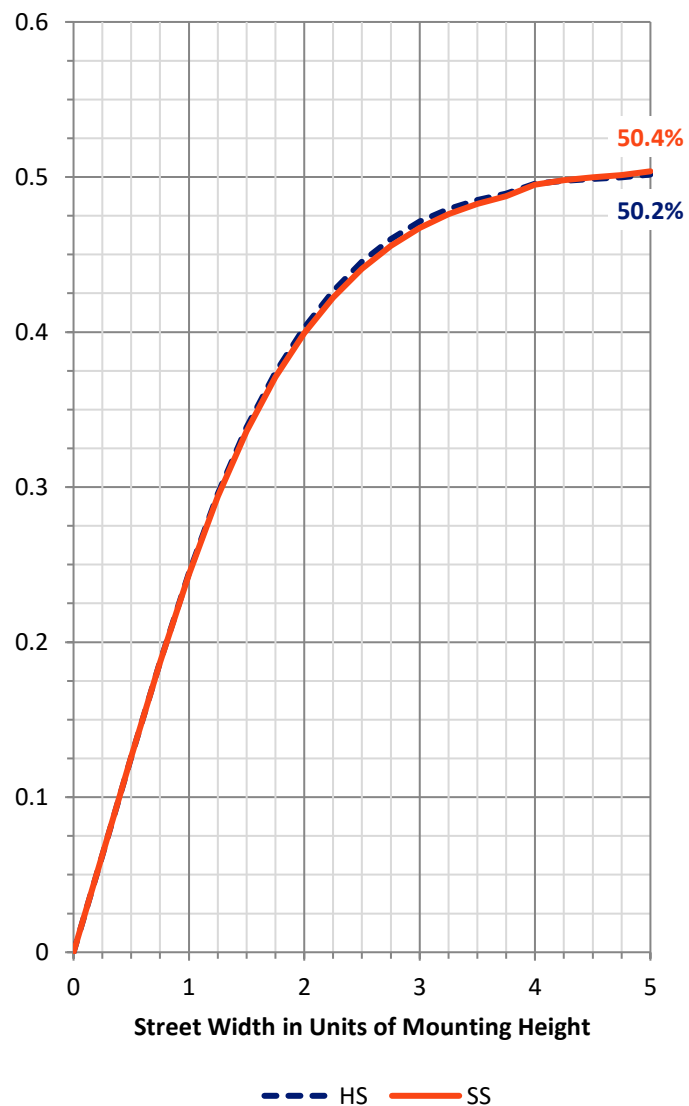
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5696.8   | 0.0    | 5696.8  |
|                    | % Fixture | 49.8     | 0.0    | 49.8    |
| <b>Street Side</b> | Lumens    | 5744.6   | 0.0    | 5744.6  |
|                    | % Fixture | 50.2     | 0.0    | 50.2    |
| <b>Total</b>       | Lumens    | 11441.4  | 0.0    | 11441.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 58.7    | 0.5       |
| 10°-20°   | 209.7   | 1.8       |
| 20°-30°   | 462.8   | 4.0       |
| 30°-40°   | 906.5   | 7.9       |
| 40°-50°   | 1645.1  | 14.4      |
| 50°-60°   | 2417.2  | 21.1      |
| 60°-70°   | 3188.5  | 27.9      |
| 70°-80°   | 2419.5  | 21.1      |
| 80°-90°   | 133.5   | 1.2       |
| 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°    | 11441.4 | 100.0     |
| 0°-180°   | 11441.4 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P1462272

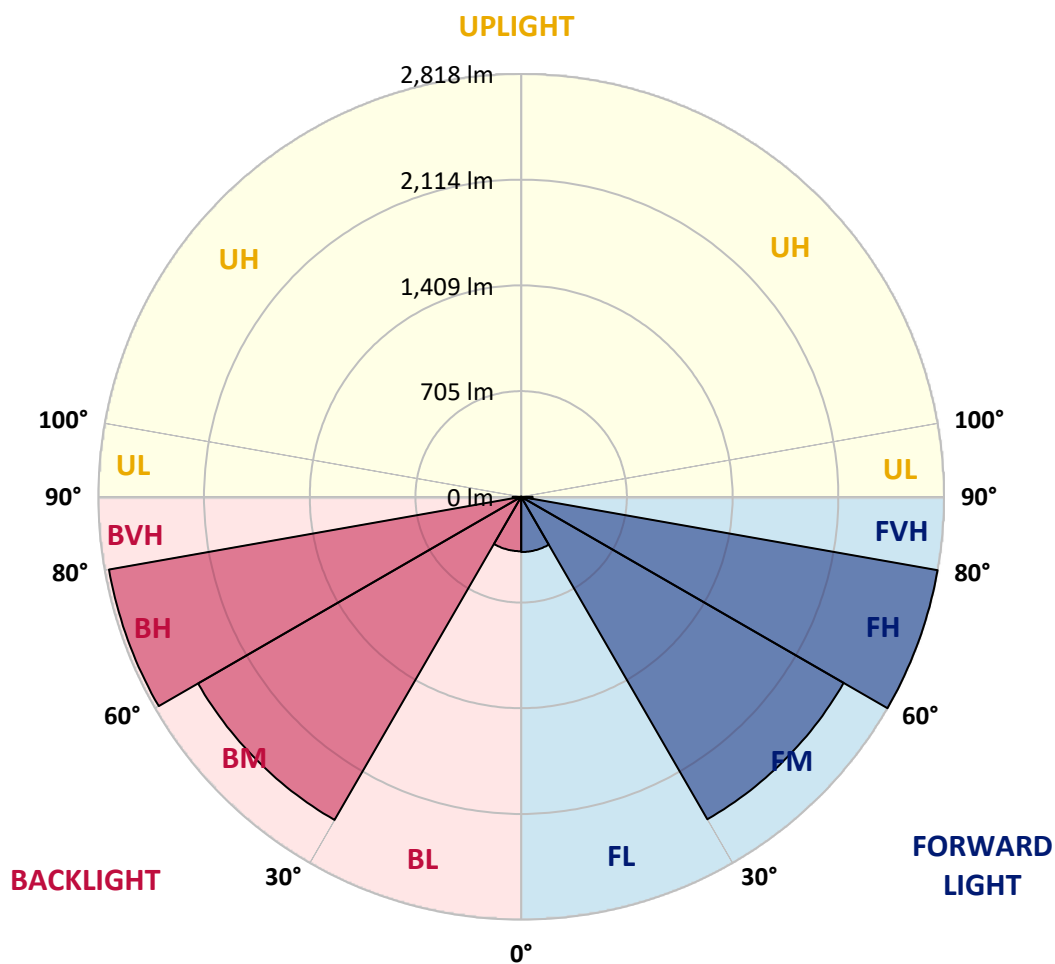
CATALOG NUMBER: PRV-P-90-727-U-5WQ

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 368.2  | 3.2       |                         |      |         |
| FM   | (30°-60°)   | 2481.7 | 21.7      |                         |      |         |
| FH   | (60°-80°)   | 2818.3 | 24.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 76.4   | 0.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 363.0  | 3.2       | B1/500                  |      |         |
| BM   | (30°-60°)   | 2487.0 | 21.7      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 2789.6 | 24.4      | B4/5000                 |      | G2/5000 |
| BVH  | (80°-90°)   | 57.1   | 0.5       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B4-U0-G2**

Type V Short



REPORT NUMBER: P1462272

CATALOG NUMBER: PRV-P-90-727-U-5WQ

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  |
| 2.5°  | 602.8  | 604.5  | 604.5  | 604.5  | 604.5  | 602.8  | 602.8  | 602.8  | 601.0  | 601.0  | 602.8  |
| 5°    | 608.0  | 608.0  | 609.7  | 609.7  | 608.0  | 608.0  | 606.2  | 604.5  | 602.8  | 601.0  | 602.8  |
| 7.5°  | 620.1  | 616.6  | 618.3  | 618.3  | 616.6  | 614.9  | 613.1  | 609.7  | 609.7  | 609.7  | 609.7  |
| 10°   | 642.6  | 642.6  | 642.6  | 640.9  | 640.9  | 637.4  | 633.9  | 630.5  | 633.9  | 633.9  | 635.7  |
| 12.5° | 684.2  | 684.2  | 684.2  | 682.4  | 677.2  | 675.5  | 672.0  | 666.8  | 668.6  | 670.3  | 668.6  |
| 15°   | 737.9  | 737.9  | 737.9  | 732.7  | 734.4  | 727.5  | 720.5  | 715.3  | 717.1  | 717.1  | 715.3  |
| 17.5° | 803.7  | 801.9  | 800.2  | 795.0  | 795.0  | 788.1  | 779.4  | 770.8  | 767.3  | 765.6  | 765.6  |
| 20°   | 864.3  | 860.8  | 866.0  | 866.0  | 871.2  | 866.0  | 850.4  | 833.1  | 824.5  | 819.3  | 819.3  |
| 22.5° | 916.3  | 923.2  | 924.9  | 935.3  | 947.4  | 947.4  | 923.2  | 902.4  | 883.3  | 873.0  | 871.2  |
| 25°   | 992.5  | 995.9  | 999.4  | 1004.6 | 1027.1 | 1028.8 | 999.4  | 973.4  | 957.8  | 957.8  | 957.8  |
| 27.5° | 1068.7 | 1068.7 | 1077.3 | 1087.7 | 1108.5 | 1112.0 | 1084.3 | 1054.8 | 1049.6 | 1046.2 | 1044.4 |
| 30°   | 1148.4 | 1148.4 | 1165.7 | 1183.0 | 1193.4 | 1196.9 | 1174.3 | 1151.8 | 1146.6 | 1141.4 | 1143.2 |
| 32.5° | 1248.8 | 1257.5 | 1280.0 | 1297.3 | 1299.0 | 1293.8 | 1293.8 | 1274.8 | 1259.2 | 1269.6 | 1266.1 |
| 35°   | 1403.0 | 1406.4 | 1416.8 | 1427.2 | 1432.4 | 1427.2 | 1422.0 | 1415.1 | 1411.6 | 1416.8 | 1411.6 |
| 37.5° | 1579.6 | 1583.1 | 1590.0 | 1579.6 | 1581.4 | 1583.1 | 1591.8 | 1598.7 | 1600.4 | 1600.4 | 1598.7 |
| 40°   | 1749.4 | 1759.8 | 1759.8 | 1752.8 | 1751.1 | 1744.2 | 1759.8 | 1778.8 | 1797.9 | 1801.3 | 1796.1 |
| 42.5° | 1948.6 | 1943.4 | 1952.0 | 1938.2 | 1924.3 | 1931.2 | 1941.6 | 1964.2 | 1983.2 | 1997.1 | 1998.8 |
| 45°   | 2133.9 | 2137.4 | 2139.1 | 2107.9 | 2097.5 | 2106.2 | 2111.4 | 2130.4 | 2161.6 | 2182.4 | 2172.0 |
| 47.5° | 2288.0 | 2289.8 | 2291.5 | 2274.2 | 2267.3 | 2263.8 | 2269.0 | 2275.9 | 2301.9 | 2315.8 | 2321.0 |
| 50°   | 2400.6 | 2407.6 | 2418.0 | 2411.0 | 2409.3 | 2412.8 | 2414.5 | 2421.4 | 2438.7 | 2447.4 | 2449.1 |
| 52.5° | 2511.5 | 2518.4 | 2539.2 | 2530.5 | 2549.6 | 2560.0 | 2560.0 | 2551.3 | 2560.0 | 2565.2 | 2563.4 |
| 55°   | 2608.5 | 2615.4 | 2655.2 | 2663.9 | 2696.8 | 2719.3 | 2712.4 | 2676.0 | 2686.4 | 2674.3 | 2677.8 |
| 57.5° | 2700.3 | 2710.7 | 2757.4 | 2788.6 | 2866.6 | 2889.1 | 2871.7 | 2816.3 | 2793.8 | 2790.3 | 2786.9 |
| 60°   | 2736.6 | 2748.8 | 2819.8 | 2934.1 | 3046.7 | 3100.4 | 3050.2 | 2944.5 | 2897.7 | 2885.6 | 2889.1 |
| 62.5° | 2743.6 | 2759.2 | 2852.7 | 3025.9 | 3245.9 | 3327.3 | 3258.0 | 3095.2 | 3013.8 | 2994.7 | 2987.8 |
| 65°   | 2741.8 | 2754.0 | 2866.6 | 3110.8 | 3431.2 | 3578.4 | 3498.8 | 3271.9 | 3145.4 | 3119.4 | 3128.1 |
| 67.5° | 2745.3 | 2762.6 | 2896.0 | 3173.1 | 3599.2 | 3794.9 | 3687.5 | 3432.9 | 3266.7 | 3213.0 | 3216.4 |
| 70°   | 2476.8 | 2566.9 | 2897.7 | 3251.1 | 3732.6 | 3990.7 | 3860.8 | 3507.4 | 3204.3 | 3045.0 | 3050.2 |
| 72°   | 1908.7 | 1920.9 | 2542.7 | 3171.4 | 3800.1 | 4108.4 | 3923.1 | 3382.7 | 2925.4 | 2703.7 | 2679.5 |
| 72.5° | 1702.6 | 1784.0 | 2440.5 | 3135.0 | 3800.1 | 4117.1 | 3897.1 | 3315.2 | 2821.5 | 2624.1 | 2601.5 |
| 75°   | 1046.2 | 1132.8 | 1688.8 | 2568.6 | 3540.3 | 3898.9 | 3434.7 | 2715.9 | 2113.1 | 1893.1 | 1896.6 |
| 77.5° | 429.5  | 467.7  | 928.4  | 1969.3 | 2755.7 | 3064.0 | 2513.2 | 1797.9 | 1189.9 | 990.7  | 966.5  |
| 80°   | 98.7   | 105.7  | 155.9  | 654.7  | 1397.8 | 1579.6 | 1056.6 | 599.3  | 400.1  | 273.7  | 258.1  |
| 82.5° | 52.0   | 55.4   | 71.0   | 128.2  | 192.3  | 265.0  | 233.8  | 169.7  | 185.3  | 155.9  | 150.7  |
| 85°   | 17.3   | 17.3   | 22.5   | 34.6   | 46.8   | 58.9   | 67.6   | 83.1   | 79.7   | 60.6   | 57.2   |
| 87.5° | 1.7    | 1.7    | 3.5    | 5.2    | 5.2    | 5.2    | 5.2    | 3.5    | 3.5    | 3.5    | 1.7    |
| 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: P1462272

CATALOG NUMBER: PRV-P-90-727-U-5WQ

**CANDELA DISTRIBUTION (continued):**

|       | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  | 601.0  |
| 2.5°  | 602.8  | 601.0  | 601.0  | 602.8  | 602.8  | 602.8  | 602.8  | 602.8  | 602.8  | 602.8  |
| 5°    | 602.8  | 602.8  | 601.0  | 602.8  | 606.2  | 606.2  | 606.2  | 606.2  | 604.5  | 604.5  |
| 7.5°  | 609.7  | 608.0  | 608.0  | 611.4  | 614.9  | 614.9  | 614.9  | 614.9  | 614.9  | 613.1  |
| 10°   | 633.9  | 632.2  | 630.5  | 635.7  | 633.9  | 637.4  | 637.4  | 637.4  | 635.7  | 637.4  |
| 12.5° | 668.6  | 666.8  | 666.8  | 668.6  | 672.0  | 670.3  | 673.8  | 675.5  | 677.2  | 677.2  |
| 15°   | 715.3  | 710.1  | 710.1  | 715.3  | 722.3  | 724.0  | 720.5  | 725.7  | 725.7  | 725.7  |
| 17.5° | 767.3  | 767.3  | 765.6  | 770.8  | 784.6  | 782.9  | 777.7  | 781.2  | 782.9  | 786.4  |
| 20°   | 819.3  | 822.7  | 827.9  | 843.5  | 855.6  | 848.7  | 845.2  | 845.2  | 838.3  | 840.0  |
| 22.5° | 876.4  | 883.3  | 893.7  | 912.8  | 924.9  | 923.2  | 911.1  | 898.9  | 892.0  | 890.3  |
| 25°   | 956.1  | 954.4  | 963.0  | 987.3  | 1006.3 | 999.4  | 982.1  | 968.2  | 963.0  | 961.3  |
| 27.5° | 1044.4 | 1044.4 | 1047.9 | 1070.4 | 1094.7 | 1079.1 | 1061.8 | 1049.6 | 1037.5 | 1037.5 |
| 30°   | 1143.2 | 1134.5 | 1148.4 | 1163.9 | 1174.3 | 1163.9 | 1153.5 | 1131.0 | 1117.2 | 1112.0 |
| 32.5° | 1262.7 | 1262.7 | 1255.7 | 1264.4 | 1271.3 | 1274.8 | 1262.7 | 1241.9 | 1229.8 | 1224.6 |
| 35°   | 1415.1 | 1409.9 | 1401.2 | 1401.2 | 1397.8 | 1406.4 | 1404.7 | 1401.2 | 1387.4 | 1387.4 |
| 37.5° | 1602.2 | 1593.5 | 1576.2 | 1567.5 | 1557.1 | 1557.1 | 1574.4 | 1584.8 | 1579.6 | 1576.2 |
| 40°   | 1787.5 | 1789.2 | 1759.8 | 1737.3 | 1730.3 | 1735.5 | 1754.6 | 1782.3 | 1771.9 | 1758.0 |
| 42.5° | 1998.8 | 1976.3 | 1938.2 | 1915.7 | 1920.9 | 1922.6 | 1943.4 | 1972.8 | 1971.1 | 1952.0 |
| 45°   | 2173.7 | 2144.3 | 2116.6 | 2097.5 | 2094.1 | 2113.1 | 2132.2 | 2156.4 | 2158.1 | 2158.1 |
| 47.5° | 2307.1 | 2298.4 | 2265.5 | 2265.5 | 2269.0 | 2275.9 | 2295.0 | 2301.9 | 2293.2 | 2284.6 |
| 50°   | 2442.2 | 2428.3 | 2411.0 | 2421.4 | 2428.3 | 2437.0 | 2431.8 | 2426.6 | 2405.8 | 2393.7 |
| 52.5° | 2560.0 | 2553.1 | 2549.6 | 2584.2 | 2598.1 | 2579.0 | 2561.7 | 2540.9 | 2516.7 | 2509.7 |
| 55°   | 2670.8 | 2679.5 | 2691.6 | 2754.0 | 2769.6 | 2741.8 | 2695.1 | 2669.1 | 2643.1 | 2634.5 |
| 57.5° | 2781.7 | 2795.5 | 2833.6 | 2932.4 | 2953.2 | 2901.2 | 2831.9 | 2780.0 | 2741.8 | 2740.1 |
| 60°   | 2875.2 | 2901.2 | 2972.2 | 3119.4 | 3162.7 | 3083.1 | 2965.3 | 2866.6 | 2814.6 | 2809.4 |
| 62.5° | 2993.0 | 3022.4 | 3129.8 | 3318.6 | 3381.0 | 3290.9 | 3088.3 | 2932.4 | 2852.7 | 2845.8 |
| 65°   | 3121.2 | 3166.2 | 3306.5 | 3554.2 | 3633.9 | 3484.9 | 3188.7 | 2994.7 | 2897.7 | 2894.3 |
| 67.5° | 3225.1 | 3297.8 | 3484.9 | 3772.4 | 3865.9 | 3697.9 | 3299.6 | 3072.7 | 2951.4 | 2934.1 |
| 70°   | 3060.5 | 3225.1 | 3568.0 | 3973.3 | 4115.4 | 3841.7 | 3329.0 | 2913.3 | 2532.3 | 2463.0 |
| 72°   | 2726.3 | 2958.4 | 3408.7 | 4008.0 | 4231.4 | 3855.6 | 3140.2 | 2469.9 | 1863.7 | 1780.6 |
| 72.5° | 2594.6 | 2857.9 | 3341.1 | 3971.6 | 4227.9 | 3826.1 | 3051.9 | 2322.7 | 1687.0 | 1640.3 |
| 75°   | 1891.4 | 2095.8 | 2734.9 | 3472.8 | 3871.1 | 3394.8 | 2346.9 | 1375.3 | 805.4  | 732.7  |
| 77.5° | 957.8  | 1167.4 | 1702.6 | 2371.2 | 2760.9 | 2217.0 | 1325.0 | 540.4  | 169.7  | 136.8  |
| 80°   | 268.5  | 356.8  | 528.3  | 900.7  | 1044.4 | 850.4  | 443.4  | 90.1   | 34.6   | 22.5   |
| 82.5° | 159.3  | 190.5  | 162.8  | 145.5  | 202.7  | 147.2  | 77.9   | 36.4   | 6.9    | 1.7    |
| 85°   | 62.4   | 93.5   | 84.9   | 52.0   | 38.1   | 24.2   | 13.9   | 6.9    | 1.7    | 0.0    |
| 87.5° | 3.5    | 3.5    | 5.2    | 5.2    | 3.5    | 3.5    | 3.5    | 1.7    | 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    |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP2-2501-321-3

Test Date: 04/09/2025

Luminaire Tested: GKO-PB1E-727-U-T4W

Data in this report applies to families of products including GKO-PB1E-727-U-T4W

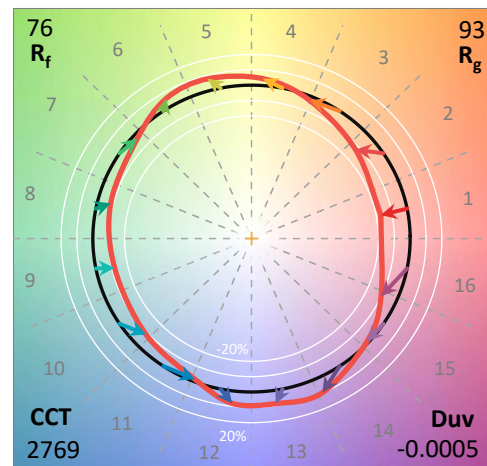
### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-3  
 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-727-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 2769  
 CIE  $u'$ : 0.2596  
 CIE  $v'$ : 0.5253  
 Duv: -0.0005  
 CIE x: 0.4535  
 CIE y: 0.4078  
 CIE z: 0.1387  
 Peak Wavelength (nm): 597  
 Dominant Wavelength (nm): 584  
 Purity: 58.54014  
 R<sub>f</sub>: 75.7  
 R<sub>g</sub>: 93.2

CRI (Ra): 71.7  
 R1: 68.0  
 R2: 84.0  
 R3: 94.6  
 R4: 65.9  
 R5: 67.3  
 R6: 78.7  
 R7: 75.2  
 R8: 39.8  
 R9: -34.5  
 R10: 64.3  
 R11: 60.9  
 R12: 54.4  
 R13: 71.2  
 R14: 97.6  
 R15: 59.5



### Test Conditions

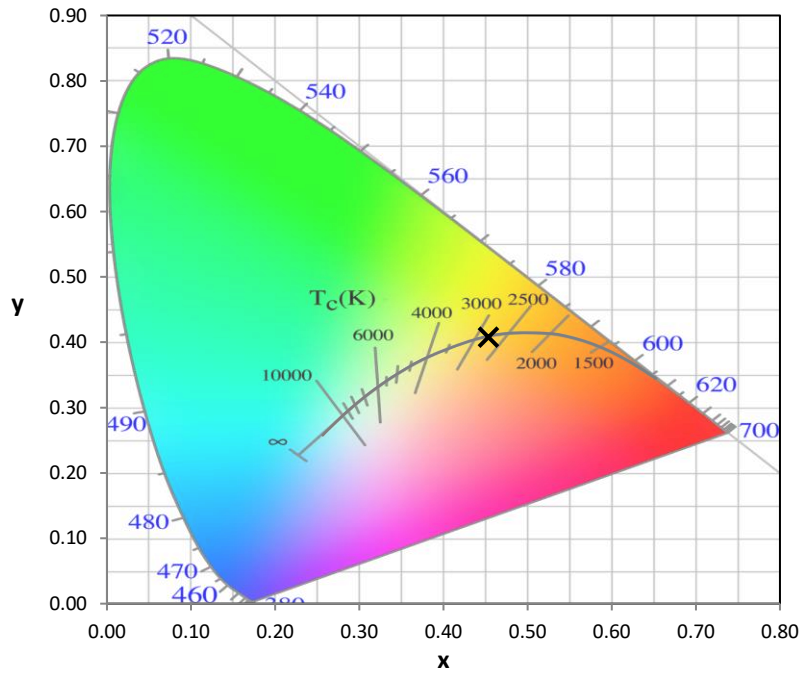
Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP2-2501-321-3

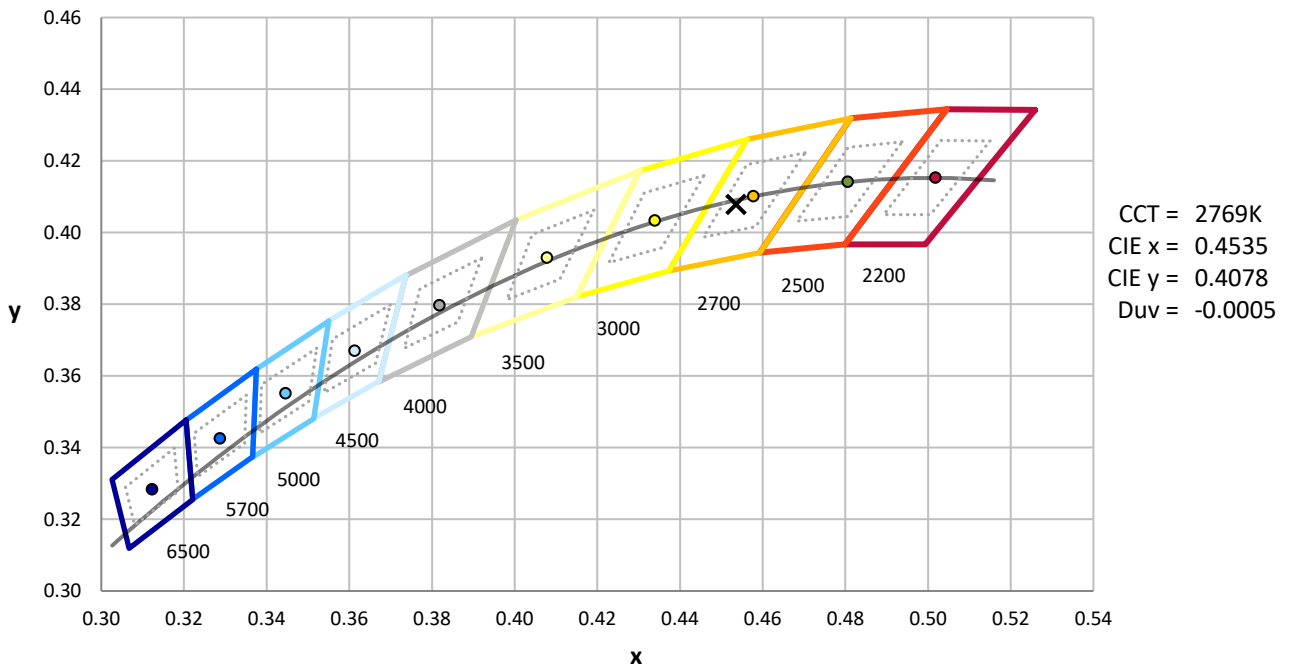
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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           |

REPORT NUMBER: SP2-2501-321-3

**CIE 1931 Chromaticity Diagram**



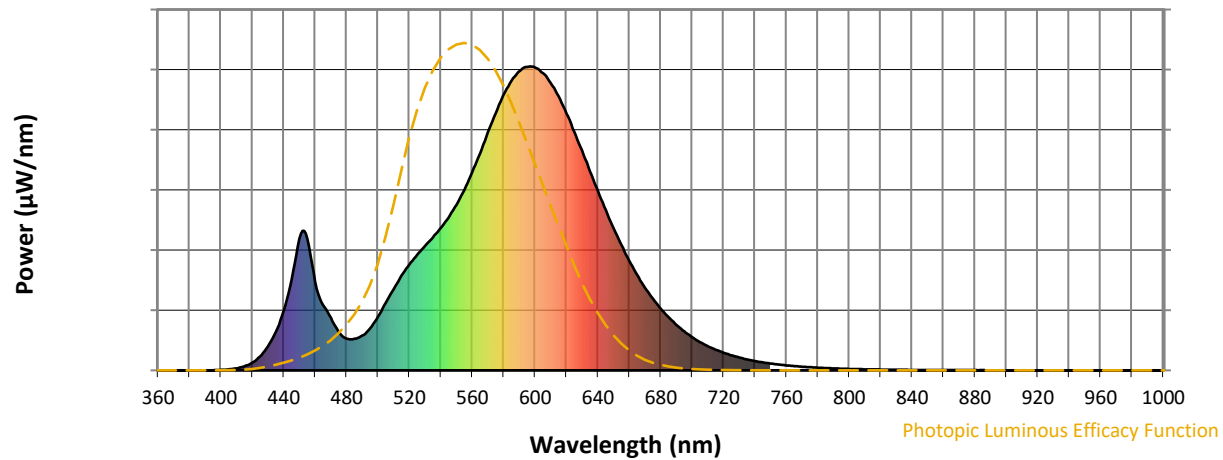
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP2-2501-321-3

### Photopic Flux vs. Wavelength

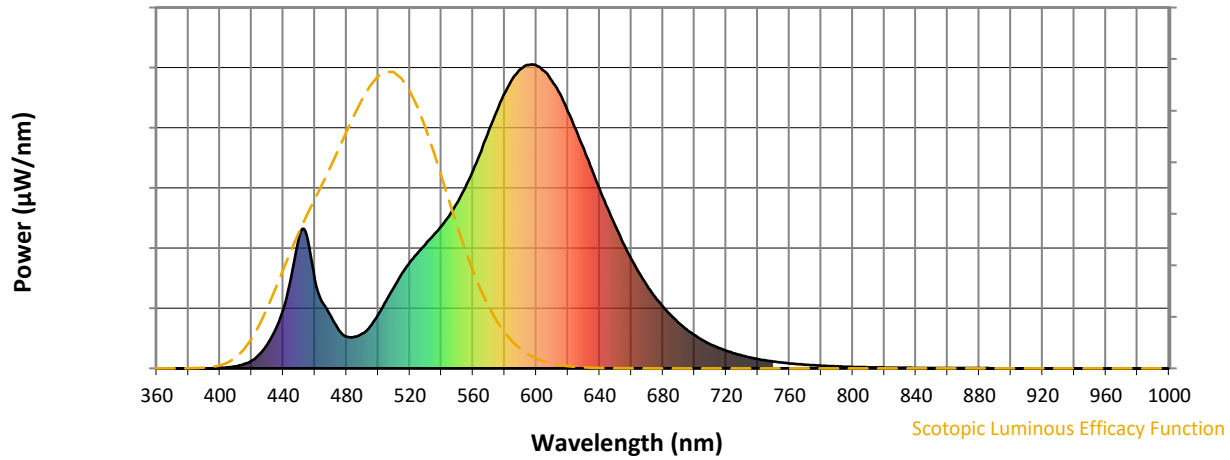


### Photopic Lumens: NR

| $\lambda$<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               | 844                                  | NR                             | 750               | 22                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 138                                  | NR                             | 625               | 785                                  | NR                             | 755               | 19                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 176                                  | NR                             | 630               | 722                                  | NR                             | 760               | 16                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 222                                  | NR                             | 635               | 655                                  | NR                             | 765               | 14                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 268                                  | NR                             | 640               | 591                                  | NR                             | 770               | 12                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 311                                  | NR                             | 645               | 527                                  | NR                             | 775               | 10                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 348                                  | NR                             | 650               | 467                                  | NR                             | 780               | 9                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 381                                  | NR                             | 655               | 412                                  | NR                             | 785               | 8                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 410                                  | NR                             | 660               | 360                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 4                                    | NR                             | 535               | 438                                  | NR                             | 665               | 314                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 469                                  | NR                             | 670               | 272                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 13                                   | NR                             | 545               | 503                                  | NR                             | 675               | 236                                  | NR                             | 805               | 4                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 25                                   | NR                             | 550               | 544                                  | NR                             | 680               | 203                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 46                                   | NR                             | 555               | 594                                  | NR                             | 685               | 175                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 79                                   | NR                             | 560               | 652                                  | NR                             | 690               | 149                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 128                                  | NR                             | 565               | 714                                  | NR                             | 695               | 128                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 196                                  | NR                             | 570               | 783                                  | NR                             | 700               | 109                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 299                                  | NR                             | 575               | 847                                  | NR                             | 705               | 93                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 433                                  | NR                             | 580               | 906                                  | NR                             | 710               | 80                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 433                                  | NR                             | 585               | 953                                  | NR                             | 715               | 68                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 293                                  | NR                             | 590               | 985                                  | NR                             | 720               | 58                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 215                                  | NR                             | 595               | 998                                  | NR                             | 725               | 50                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 173                                  | NR                             | 600               | 997                                  | NR                             | 730               | 42                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 127                                  | NR                             | 605               | 978                                  | NR                             | 735               | 36                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 104                                  | NR                             | 610               | 945                                  | NR                             | 740               | 30                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 104                                  | NR                             | 615               | 902                                  | NR                             | 745               | 26                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP2-2501-321-3

### Scotopic Flux vs. Wavelength



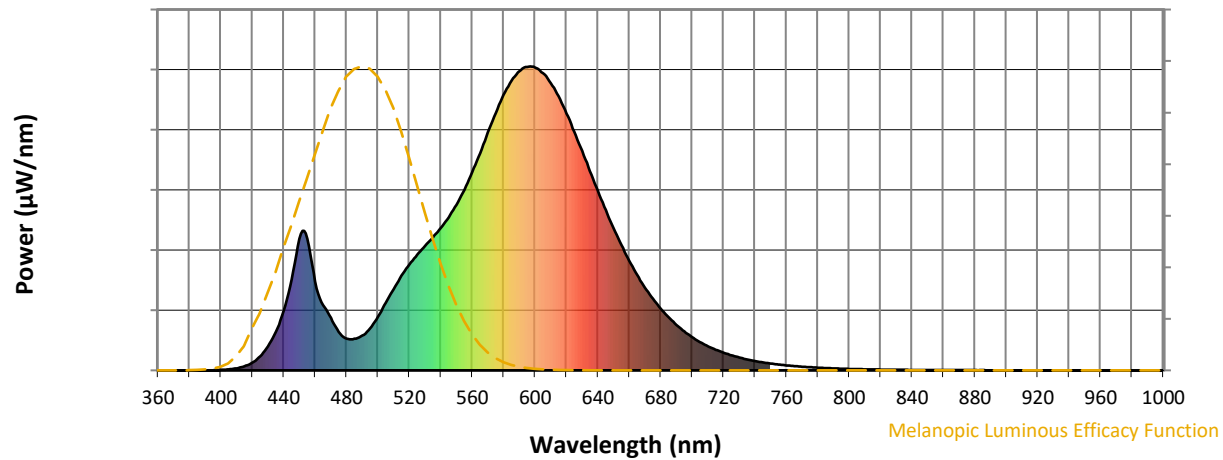
Scotopic Lumens: NR

S/P: 1.14

| 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       | 844                         | NR               | 750       | 22                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 138                         | NR               | 625       | 785                         | NR               | 755       | 19                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 176                         | NR               | 630       | 722                         | NR               | 760       | 16                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 222                         | NR               | 635       | 655                         | NR               | 765       | 14                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 268                         | NR               | 640       | 591                         | NR               | 770       | 12                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 311                         | NR               | 645       | 527                         | NR               | 775       | 10                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 348                         | NR               | 650       | 467                         | NR               | 780       | 9                           | NR               | 910       | 0                           | NR               |
| 395       | 0                           | NR               | 525       | 381                         | NR               | 655       | 412                         | NR               | 785       | 8                           | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 410                         | NR               | 660       | 360                         | NR               | 790       | 7                           | NR               | 920       | 0                           | NR               |
| 405       | 4                           | NR               | 535       | 438                         | NR               | 665       | 314                         | NR               | 795       | 6                           | NR               | 925       | 0                           | NR               |
| 410       | 7                           | NR               | 540       | 469                         | NR               | 670       | 272                         | NR               | 800       | 5                           | NR               | 930       | 0                           | NR               |
| 415       | 13                          | NR               | 545       | 503                         | NR               | 675       | 236                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 25                          | NR               | 550       | 544                         | NR               | 680       | 203                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 46                          | NR               | 555       | 594                         | NR               | 685       | 175                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 79                          | NR               | 560       | 652                         | NR               | 690       | 149                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 128                         | NR               | 565       | 714                         | NR               | 695       | 128                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 196                         | NR               | 570       | 783                         | NR               | 700       | 109                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 299                         | NR               | 575       | 847                         | NR               | 705       | 93                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 433                         | NR               | 580       | 906                         | NR               | 710       | 80                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 433                         | NR               | 585       | 953                         | NR               | 715       | 68                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 293                         | NR               | 590       | 985                         | NR               | 720       | 58                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 215                         | NR               | 595       | 998                         | NR               | 725       | 50                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 173                         | NR               | 600       | 997                         | NR               | 730       | 42                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 127                         | NR               | 605       | 978                         | NR               | 735       | 36                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 104                         | NR               | 610       | 945                         | NR               | 740       | 30                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 104                         | NR               | 615       | 902                         | NR               | 745       | 26                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP2-2501-321-3

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.08

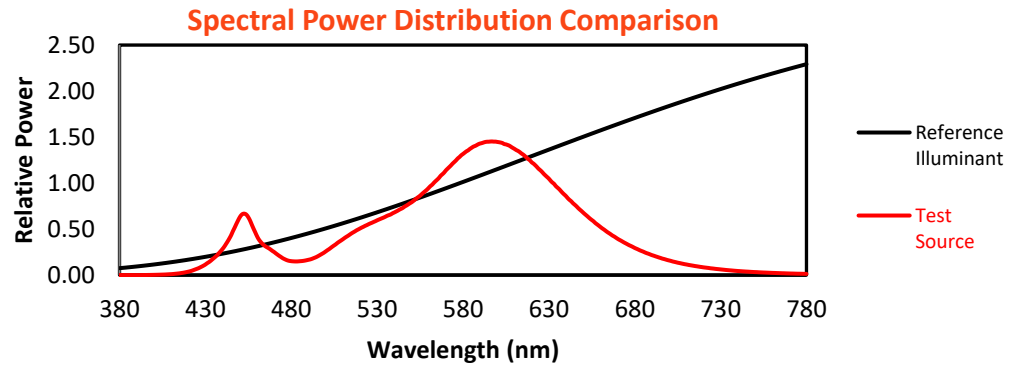
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 114                         | NR               | 620       | 844                         | NR               | 750       | 22                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 138                         | NR               | 625       | 785                         | NR               | 755       | 19                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 176                         | NR               | 630       | 722                         | NR               | 760       | 16                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 222                         | NR               | 635       | 655                         | NR               | 765       | 14                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 268                         | NR               | 640       | 591                         | NR               | 770       | 12                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 311                         | NR               | 645       | 527                         | NR               | 775       | 10                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 348                         | NR               | 650       | 467                         | NR               | 780       | 9                           | NR               | 910       | 0                           | NR               |
| 395       | 0                           | NR               | 525       | 381                         | NR               | 655       | 412                         | NR               | 785       | 8                           | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 410                         | NR               | 660       | 360                         | NR               | 790       | 7                           | NR               | 920       | 0                           | NR               |
| 405       | 4                           | NR               | 535       | 438                         | NR               | 665       | 314                         | NR               | 795       | 6                           | NR               | 925       | 0                           | NR               |
| 410       | 7                           | NR               | 540       | 469                         | NR               | 670       | 272                         | NR               | 800       | 5                           | NR               | 930       | 0                           | NR               |
| 415       | 13                          | NR               | 545       | 503                         | NR               | 675       | 236                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 25                          | NR               | 550       | 544                         | NR               | 680       | 203                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 46                          | NR               | 555       | 594                         | NR               | 685       | 175                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 79                          | NR               | 560       | 652                         | NR               | 690       | 149                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 128                         | NR               | 565       | 714                         | NR               | 695       | 128                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 196                         | NR               | 570       | 783                         | NR               | 700       | 109                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 299                         | NR               | 575       | 847                         | NR               | 705       | 93                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 433                         | NR               | 580       | 906                         | NR               | 710       | 80                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 433                         | NR               | 585       | 953                         | NR               | 715       | 68                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 293                         | NR               | 590       | 985                         | NR               | 720       | 58                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 215                         | NR               | 595       | 998                         | NR               | 725       | 50                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 173                         | NR               | 600       | 997                         | NR               | 730       | 42                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 127                         | NR               | 605       | 978                         | NR               | 735       | 36                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 104                         | NR               | 610       | 945                         | NR               | 740       | 30                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 104                         | NR               | 615       | 902                         | NR               | 745       | 26                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP2-2501-321-3

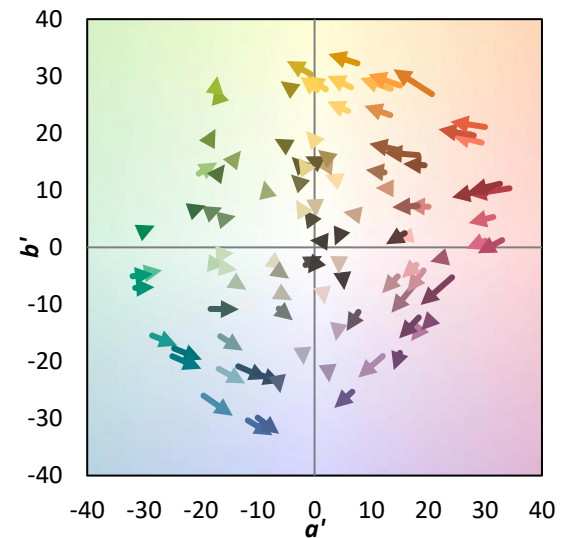
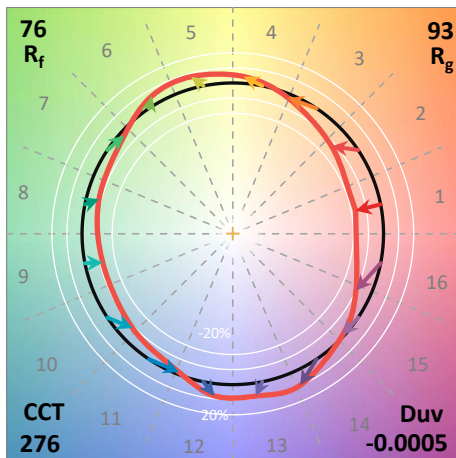
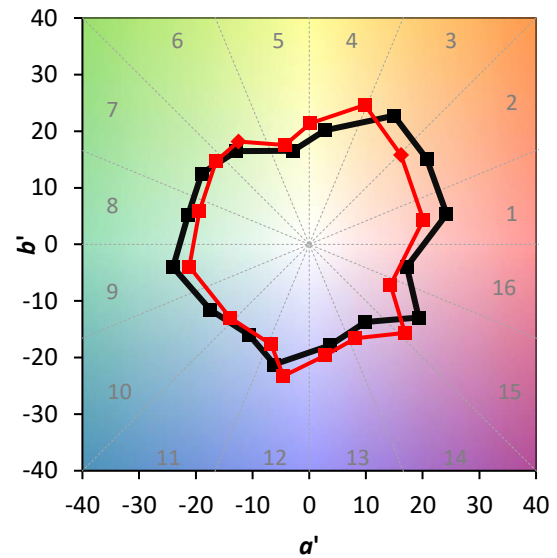
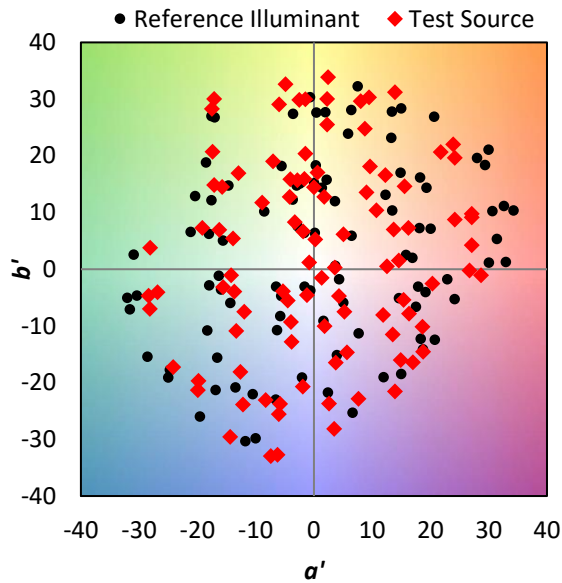
TM-30-18

### Summary

$R_f = 75.7$   
 $R_g = 93.2$   
 $CIE\ R_a = 71.7$   
 $R_g = -34.5$

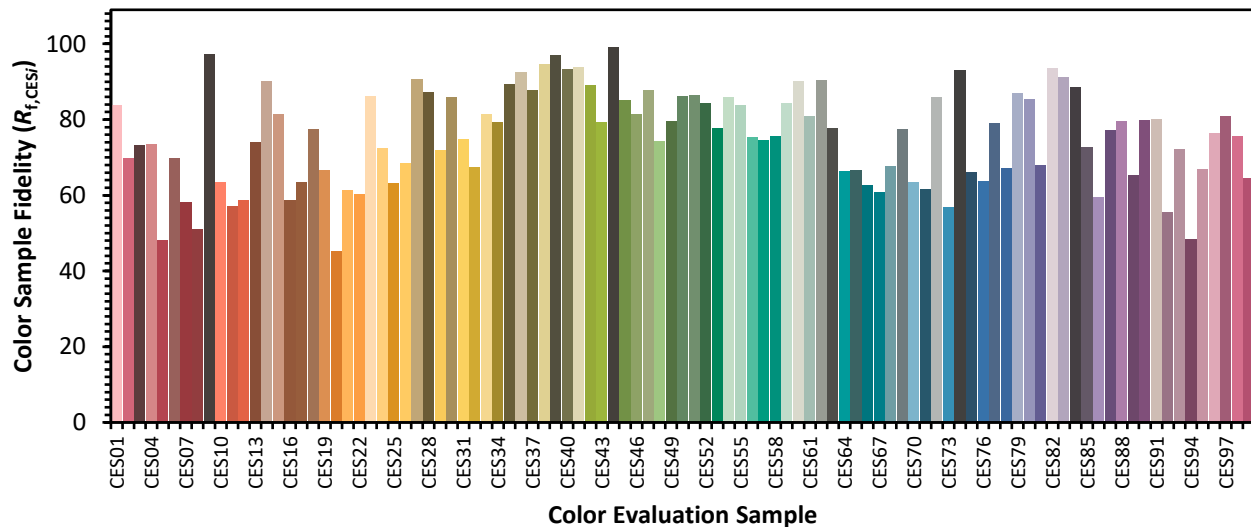


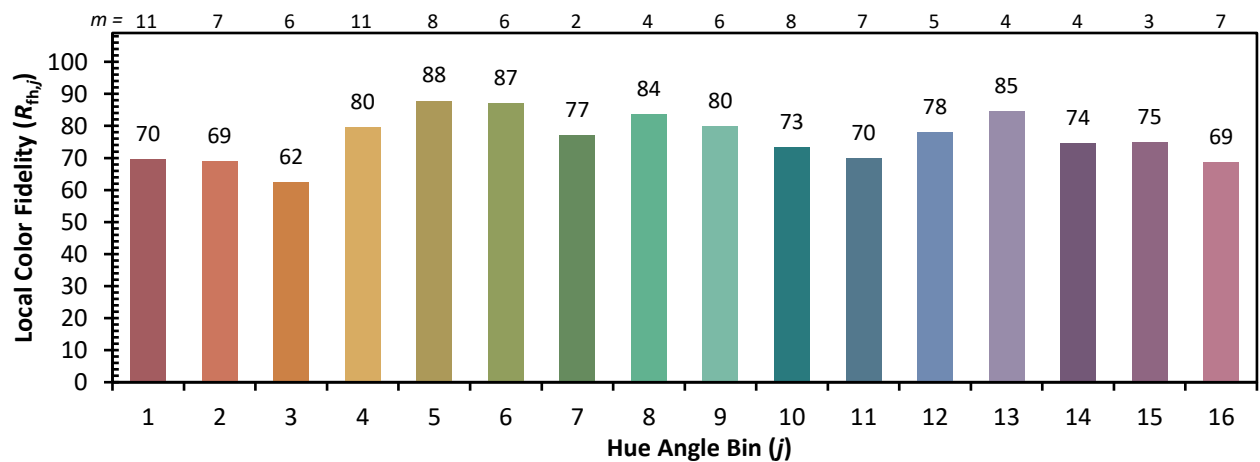
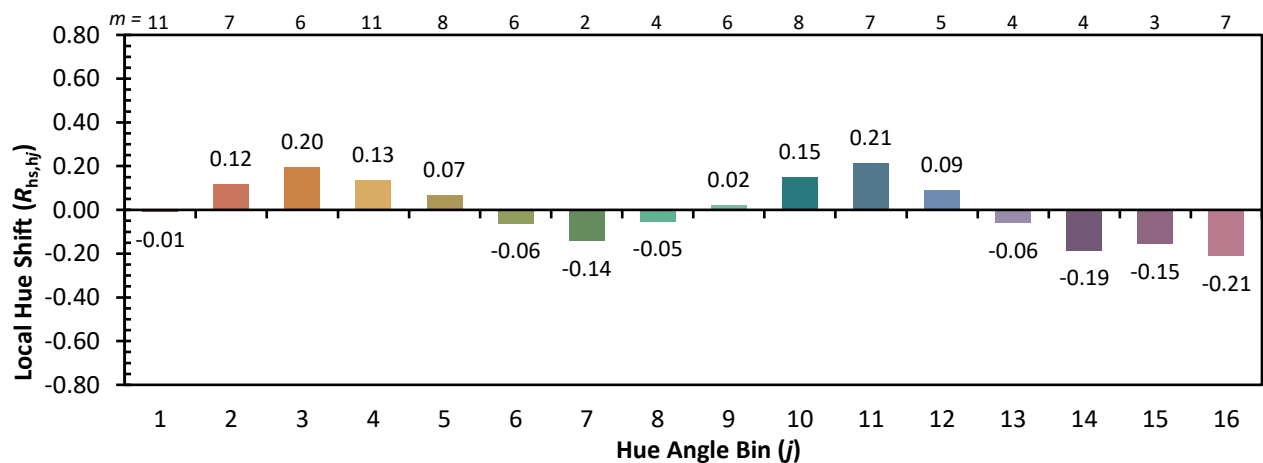
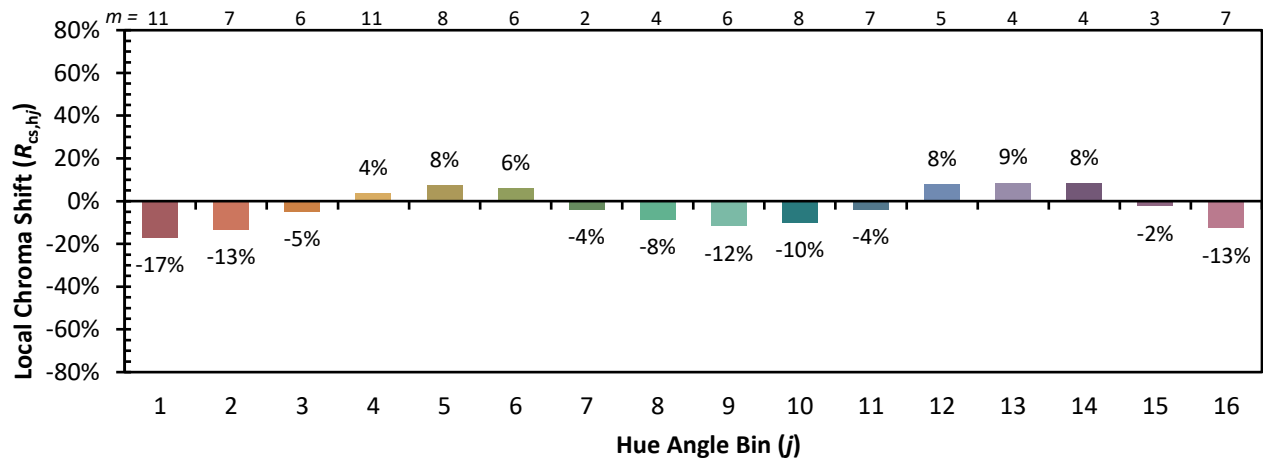
### Color Vector Graphics



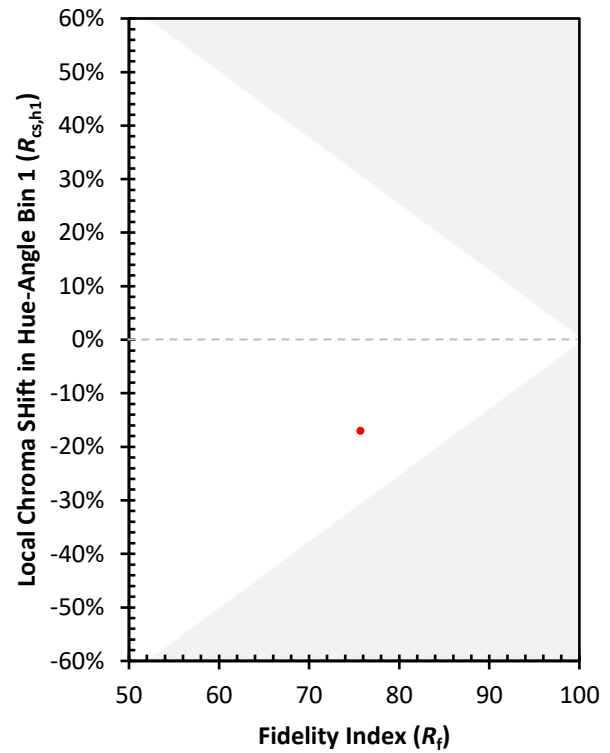
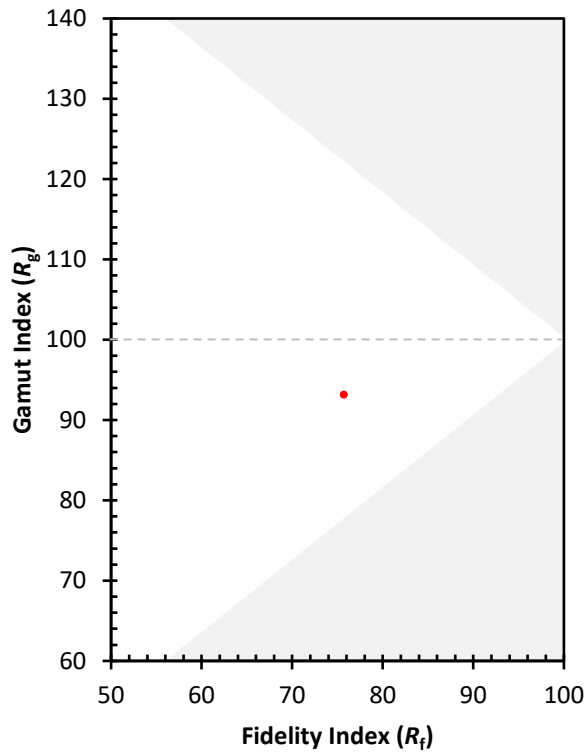
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 87 | CES76 = 64 |
| CES02 = 63 | CES27 = 91 | CES52 = 84 | CES77 = 79 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 72 | CES54 = 86 | CES79 = 87 |
| CES05 = 50 | CES30 = 86 | CES55 = 84 | CES80 = 85 |
| CES06 = 52 | CES31 = 75 | CES56 = 75 | CES81 = 68 |
| CES07 = 42 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 41 | CES33 = 81 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 79 | CES59 = 84 | CES84 = 89 |
| CES10 = 77 | CES35 = 89 | CES60 = 90 | CES85 = 73 |
| CES11 = 60 | CES36 = 92 | CES61 = 81 | CES86 = 59 |
| CES12 = 66 | CES37 = 88 | CES62 = 90 | CES87 = 77 |
| CES13 = 43 | CES38 = 95 | CES63 = 78 | CES88 = 79 |
| CES14 = 74 | CES39 = 97 | CES64 = 66 | CES89 = 65 |
| CES15 = 72 | CES40 = 93 | CES65 = 67 | CES90 = 80 |
| CES16 = 48 | CES41 = 94 | CES66 = 63 | CES91 = 80 |
| CES17 = 50 | CES42 = 89 | CES67 = 61 | CES92 = 55 |
| CES18 = 57 | CES43 = 79 | CES68 = 68 | CES93 = 72 |
| CES19 = 73 | CES44 = 99 | CES69 = 77 | CES94 = 48 |
| CES20 = 67 | CES45 = 85 | CES70 = 63 | CES95 = 67 |
| CES21 = 87 | CES46 = 81 | CES71 = 62 | CES96 = 76 |
| CES22 = 80 | CES47 = 88 | CES72 = 86 | CES97 = 81 |
| CES23 = 92 | CES48 = 74 | CES73 = 57 | CES98 = 76 |
| CES24 = 91 | CES49 = 80 | CES74 = 93 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 66 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)