

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: P1502978

Luminaire Tested: PRV-P-70-727-U-T3RE

Issue Date: 07/22/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1502978  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 7/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-70-727-U-T3RE  
Description: PREVAIL PETITE DISCRETE LED 2 SQUARES 70W 70CRI 2700K FIXTURE w/ TYPE III  
ROADWAY ILLUMINANCE DISTRIBUTION OPTIC  
Light Source: (20) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9673.6 lumens  
Efficiency: N/A  
Efficacy: 130.7 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B2 - U0 - G2

Input Watts (W): 74  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 8.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

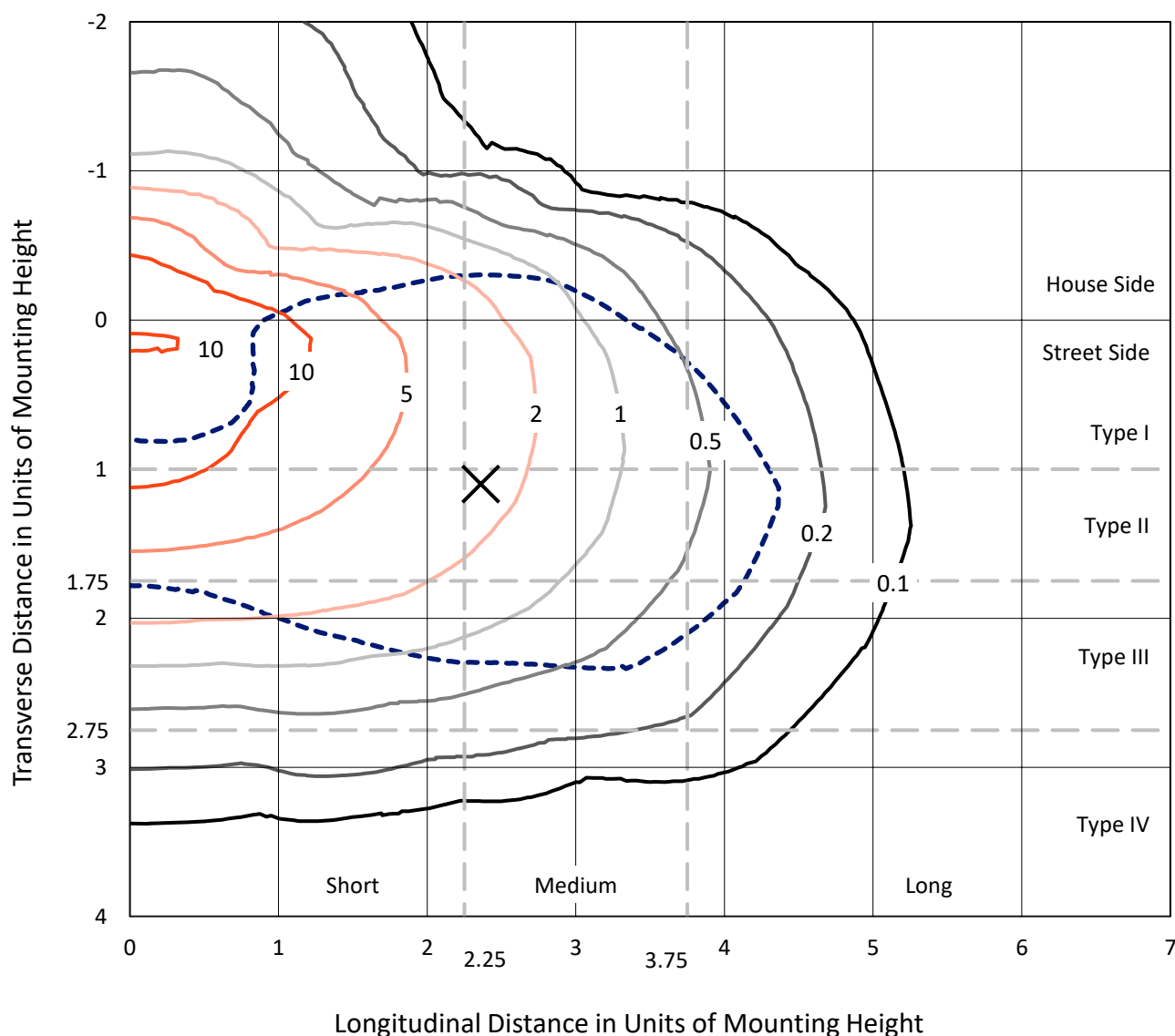
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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd



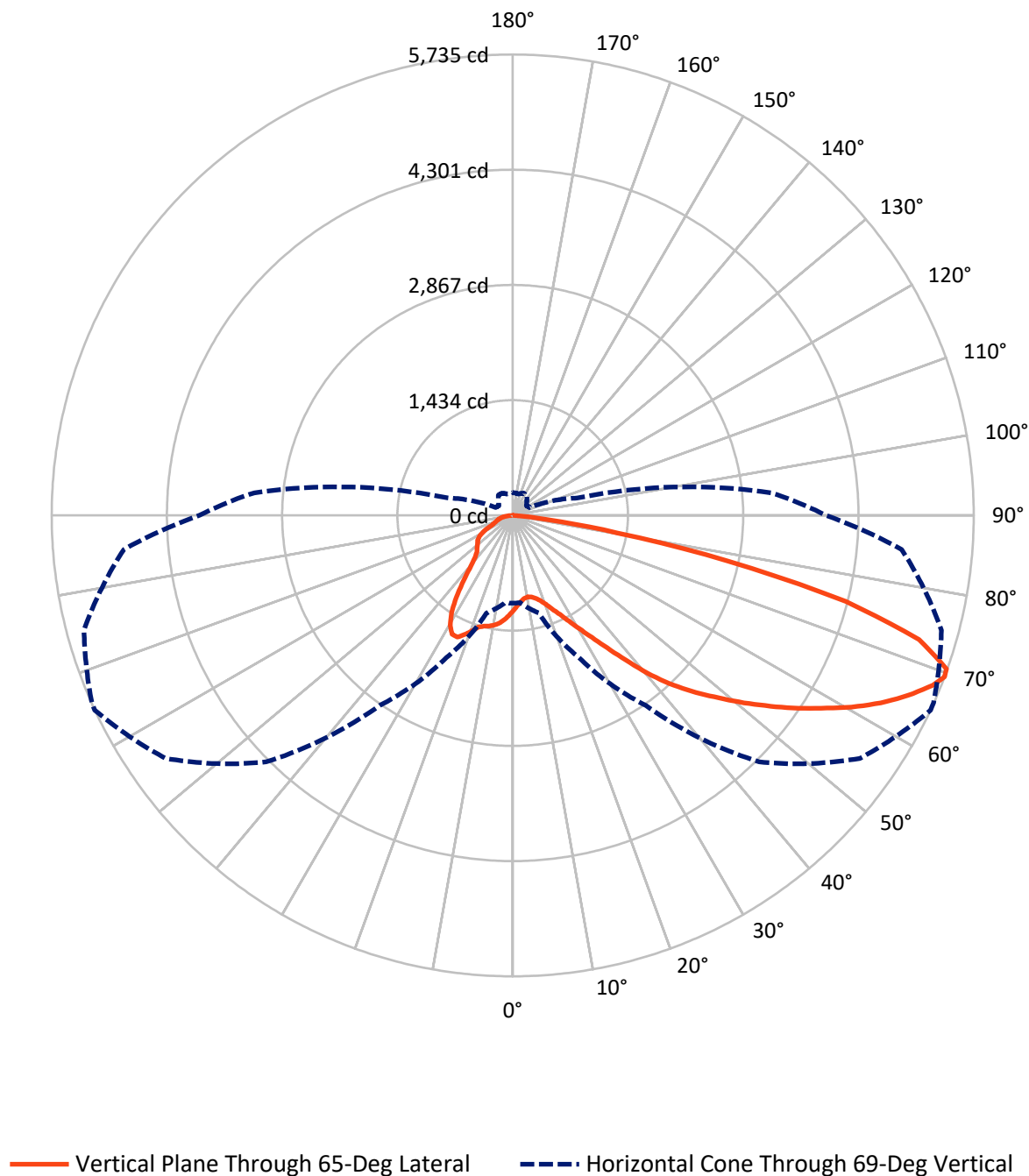
Based on 10 foot mounting height. Maximum calculated value = 14.1 fc

Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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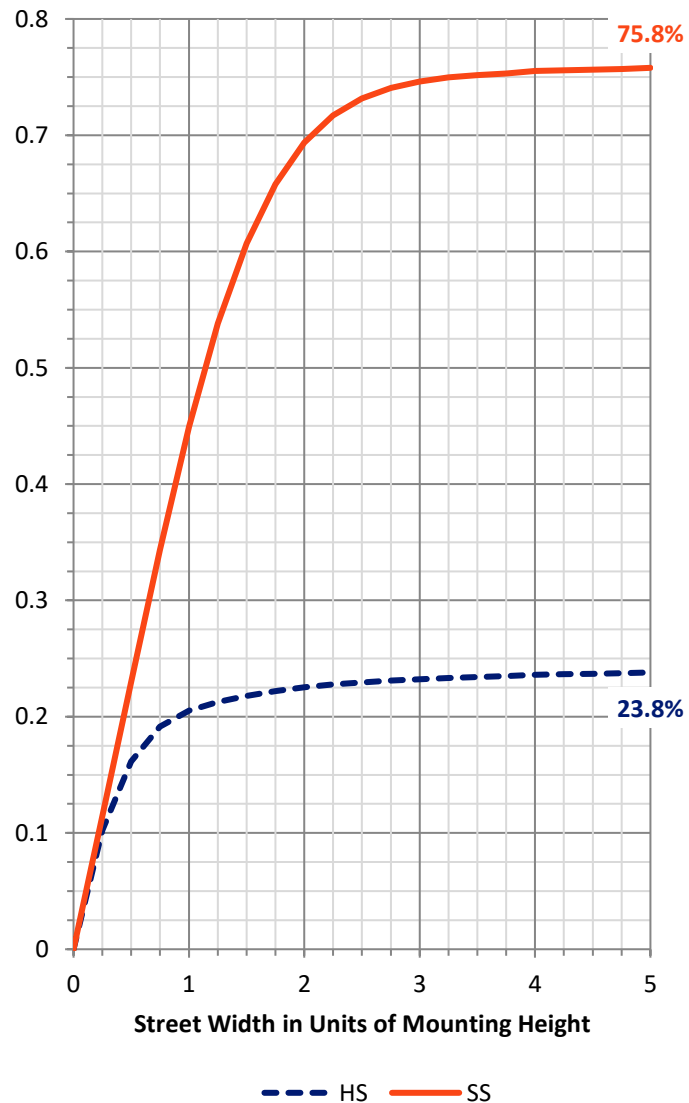
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2322.5   | 0.0    | 2322.5 |
|                    | % Fixture | 24.0     | 0.0    | 24.0   |
| <b>Street Side</b> | Lumens    | 7351.1   | 0.0    | 7351.1 |
|                    | % Fixture | 76.0     | 0.0    | 76.0   |
| <b>Total</b>       | Lumens    | 9673.6   | 0.0    | 9673.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 112.5  | 1.2       |
| 10°-20°   | 374.0  | 3.9       |
| 20°-30°   | 689.4  | 7.1       |
| 30°-40°   | 1073.9 | 11.1      |
| 40°-50°   | 1583.7 | 16.4      |
| 50°-60°   | 2103.8 | 21.7      |
| 60°-70°   | 2327.1 | 24.1      |
| 70°-80°   | 1294.5 | 13.4      |
| 80°-90°   | 114.8  | 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°    | 9673.6 | 100.0     |
| 0°-180°   | 9673.6 | 100.0     |

**Coefficient of Utilization**



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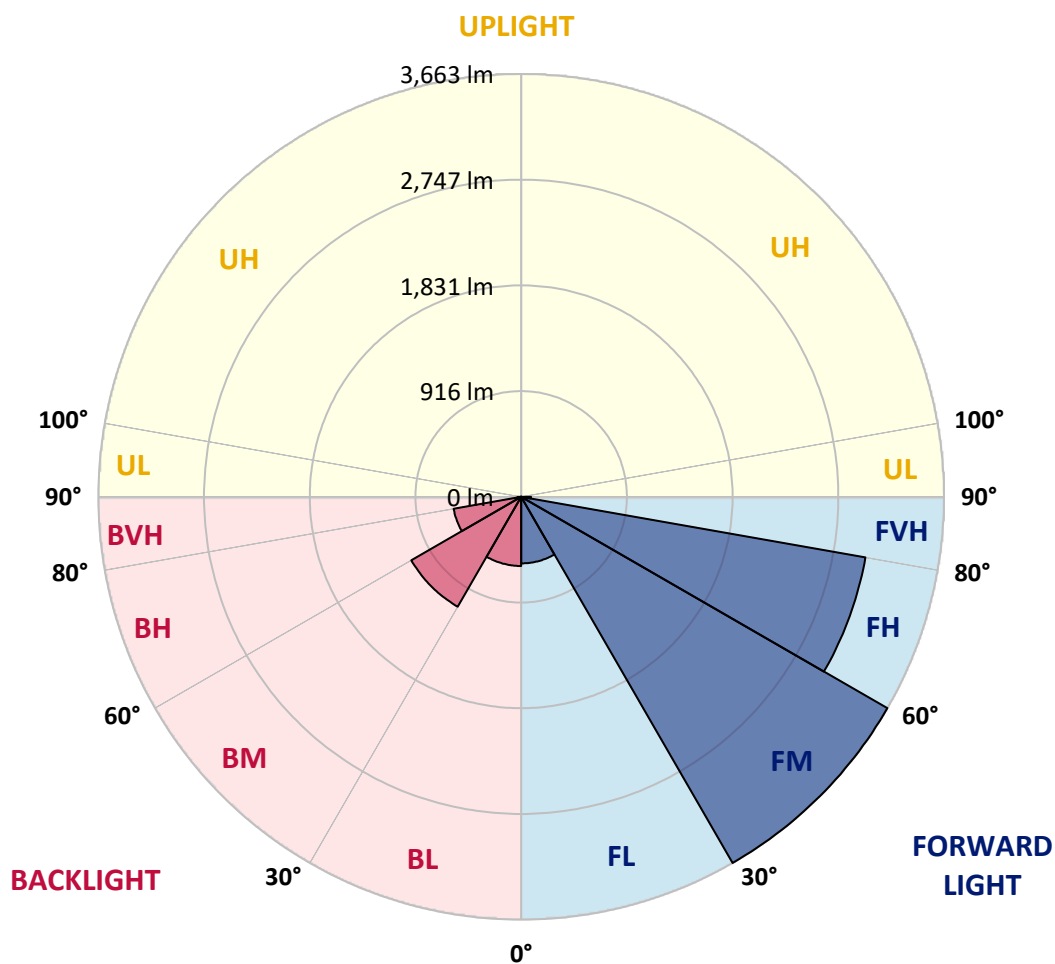
CATALOG NUMBER: PRV-P-70-727-U-T3RE

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 576.5  | 6.0       |                         |      |         |
| FM   | (30°-60°)   | 3662.6 | 37.9      |                         |      |         |
| FH   | (60°-80°)   | 3027.9 | 31.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 84.1   | 0.9       |                         |      | G1/100  |
| BL   | (0°-30°)    | 599.3  | 6.2       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1098.8 | 11.4      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 593.7  | 6.1       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 30.6   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type III Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 66°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 |
| 2.5°  | 1050.4 | 1044.2 | 1052.5 | 1062.9 | 1079.4 | 1087.7 | 1106.4 | 1122.9 | 1127.1 | 1145.7 | 1170.6 |
| 5°    | 959.3  | 959.3  | 967.6  | 977.9  | 994.5  | 1011.1 | 1042.1 | 1075.3 | 1081.5 | 1120.9 | 1172.7 |
| 7.5°  | 953.1  | 951.0  | 955.1  | 959.3  | 965.5  | 975.8  | 1000.7 | 1042.1 | 1048.4 | 1108.4 | 1183.0 |
| 10°   | 998.6  | 998.6  | 994.5  | 994.5  | 986.2  | 984.1  | 994.5  | 1029.7 | 1035.9 | 1108.4 | 1207.9 |
| 12.5° | 1075.3 | 1075.3 | 1069.1 | 1058.7 | 1040.1 | 1023.5 | 1017.3 | 1040.1 | 1044.2 | 1120.9 | 1251.4 |
| 15°   | 1166.5 | 1168.5 | 1158.2 | 1139.5 | 1112.6 | 1079.4 | 1056.6 | 1069.1 | 1073.2 | 1143.7 | 1301.1 |
| 17.5° | 1272.1 | 1276.3 | 1259.7 | 1236.9 | 1195.5 | 1151.9 | 1116.7 | 1114.7 | 1114.7 | 1185.1 | 1369.5 |
| 20°   | 1390.2 | 1384.0 | 1367.4 | 1344.6 | 1290.8 | 1241.0 | 1195.5 | 1181.0 | 1178.9 | 1247.3 | 1454.4 |
| 22.5° | 1529.0 | 1531.1 | 1495.9 | 1452.4 | 1402.6 | 1342.6 | 1288.7 | 1268.0 | 1268.0 | 1328.1 | 1558.0 |
| 25°   | 1705.1 | 1698.9 | 1651.3 | 1589.1 | 1520.7 | 1456.5 | 1394.4 | 1365.4 | 1373.6 | 1435.8 | 1692.7 |
| 27.5° | 1889.5 | 1881.2 | 1821.2 | 1740.4 | 1649.2 | 1574.6 | 1516.6 | 1489.7 | 1491.7 | 1568.4 | 1839.8 |
| 30°   | 2082.2 | 2076.0 | 1999.3 | 1899.9 | 1794.2 | 1709.3 | 1649.2 | 1634.7 | 1638.8 | 1736.2 | 2015.9 |
| 32.5° | 2291.5 | 2270.7 | 2185.8 | 2082.2 | 1960.0 | 1862.6 | 1812.9 | 1808.7 | 1810.8 | 1928.9 | 2206.5 |
| 35°   | 2531.8 | 2500.7 | 2399.2 | 2283.2 | 2146.4 | 2049.1 | 1997.3 | 2022.1 | 2034.6 | 2196.2 | 2407.5 |
| 37.5° | 2761.8 | 2736.9 | 2631.3 | 2504.9 | 2368.1 | 2256.2 | 2210.7 | 2279.0 | 2299.8 | 2471.7 | 2697.6 |
| 40°   | 2979.3 | 2966.9 | 2859.2 | 2718.3 | 2606.4 | 2486.2 | 2440.6 | 2581.5 | 2598.1 | 2786.6 | 2962.7 |
| 42.5° | 3180.3 | 3167.9 | 3080.8 | 2954.5 | 2842.6 | 2697.6 | 2676.8 | 2859.2 | 2877.8 | 3089.1 | 3232.1 |
| 45°   | 3317.0 | 3312.9 | 3267.3 | 3176.1 | 3087.1 | 2954.5 | 2904.7 | 3122.3 | 3157.5 | 3364.7 | 3453.8 |
| 47.5° | 3395.8 | 3395.8 | 3397.8 | 3375.0 | 3329.5 | 3198.9 | 3174.1 | 3373.0 | 3412.3 | 3609.2 | 3690.0 |
| 50°   | 3422.7 | 3420.6 | 3453.8 | 3509.7 | 3530.4 | 3453.8 | 3447.6 | 3648.5 | 3675.5 | 3876.4 | 3911.7 |
| 52.5° | 3375.0 | 3383.3 | 3457.9 | 3578.1 | 3698.3 | 3692.0 | 3739.7 | 3930.3 | 3963.5 | 4125.1 | 4098.1 |
| 55°   | 3257.0 | 3273.5 | 3391.6 | 3605.0 | 3822.6 | 3911.7 | 4011.1 | 4230.7 | 4259.7 | 4386.1 | 4270.1 |
| 57.5° | 3118.1 | 3114.0 | 3250.7 | 3565.7 | 3915.8 | 4139.6 | 4309.5 | 4524.9 | 4541.5 | 4630.6 | 4435.8 |
| 60°   | 2946.2 | 2958.6 | 3070.5 | 3443.4 | 3969.7 | 4363.3 | 4611.9 | 4841.9 | 4841.9 | 4875.1 | 4582.9 |
| 62.5° | 2627.1 | 2658.2 | 2826.0 | 3259.0 | 3926.2 | 4524.9 | 4904.1 | 5138.2 | 5136.1 | 5107.1 | 4713.5 |
| 65°   | 1993.1 | 2024.2 | 2285.3 | 2931.7 | 3777.0 | 4632.7 | 5148.6 | 5403.4 | 5415.8 | 5330.9 | 4852.3 |
| 67.5° | 1410.9 | 1417.1 | 1618.1 | 2347.4 | 3294.2 | 4556.0 | 5291.5 | 5637.5 | 5629.2 | 5471.8 | 4908.2 |
| 69°   | 1091.9 | 1089.8 | 1257.6 | 1949.6 | 2886.1 | 4336.4 | 5270.8 | 5734.9 | 5730.7 | 5521.5 | 4856.4 |
| 70°   | 907.5  | 897.1  | 1031.8 | 1717.6 | 2525.6 | 4033.9 | 5132.0 | 5724.5 | 5724.5 | 5509.1 | 4748.7 |
| 72.5° | 495.2  | 507.6  | 567.7  | 1104.3 | 1663.7 | 3053.9 | 4493.8 | 5287.4 | 5326.7 | 5098.8 | 4042.2 |
| 75°   | 350.1  | 341.9  | 329.4  | 480.7  | 803.9  | 1769.4 | 3453.8 | 4280.4 | 4371.6 | 4168.6 | 3008.3 |
| 77.5° | 317.0  | 306.6  | 261.1  | 232.0  | 298.3  | 667.1  | 2252.1 | 2736.9 | 2813.6 | 2913.0 | 1957.9 |
| 80°   | 277.6  | 273.5  | 217.5  | 169.9  | 192.7  | 196.8  | 913.7  | 1317.7 | 1404.7 | 1454.4 | 853.6  |
| 82.5° | 213.4  | 221.7  | 176.1  | 111.9  | 124.3  | 126.4  | 147.1  | 428.9  | 480.7  | 474.5  | 223.8  |
| 85°   | 91.2   | 101.5  | 99.4   | 58.0   | 64.2   | 68.4   | 66.3   | 78.7   | 95.3   | 72.5   | 51.8   |
| 87.5° | 2.1    | 2.1    | 2.1    | 8.3    | 10.4   | 10.4   | 10.4   | 12.4   | 10.4   | 10.4   | 6.2    |
| 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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CATALOG NUMBER: PRV-P-70-727-U-T3RE

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 | 1183.0 |
| 2.5°  | 1183.0 | 1195.5 | 1220.3 | 1241.0 | 1263.8 | 1270.0 | 1284.5 | 1284.5 | 1299.1 | 1303.2 | 1303.2 |
| 5°    | 1197.5 | 1222.4 | 1265.9 | 1301.1 | 1323.9 | 1328.1 | 1332.2 | 1328.1 | 1330.1 | 1330.1 | 1328.1 |
| 7.5°  | 1220.3 | 1257.6 | 1313.6 | 1348.8 | 1355.0 | 1336.3 | 1326.0 | 1317.7 | 1321.8 | 1323.9 | 1321.8 |
| 10°   | 1261.8 | 1305.3 | 1367.4 | 1384.0 | 1361.2 | 1338.4 | 1348.8 | 1375.7 | 1402.6 | 1417.1 | 1423.4 |
| 12.5° | 1315.6 | 1367.4 | 1425.4 | 1406.8 | 1377.8 | 1392.3 | 1450.3 | 1491.7 | 1520.7 | 1533.2 | 1541.5 |
| 15°   | 1379.9 | 1439.9 | 1471.0 | 1423.4 | 1431.6 | 1504.2 | 1545.6 | 1556.0 | 1543.5 | 1539.4 | 1545.6 |
| 17.5° | 1454.4 | 1514.5 | 1506.2 | 1452.4 | 1535.2 | 1576.7 | 1549.7 | 1512.5 | 1477.2 | 1466.9 | 1471.0 |
| 20°   | 1547.7 | 1595.3 | 1535.2 | 1524.9 | 1607.8 | 1562.2 | 1475.2 | 1413.0 | 1381.9 | 1379.9 | 1381.9 |
| 22.5° | 1649.2 | 1676.1 | 1566.3 | 1599.5 | 1614.0 | 1466.9 | 1346.7 | 1309.4 | 1313.6 | 1326.0 | 1334.3 |
| 25°   | 1765.2 | 1759.0 | 1601.5 | 1663.7 | 1527.0 | 1313.6 | 1239.0 | 1239.0 | 1247.3 | 1259.7 | 1261.8 |
| 27.5° | 1908.2 | 1850.2 | 1672.0 | 1659.6 | 1379.9 | 1176.8 | 1160.2 | 1164.4 | 1164.4 | 1176.8 | 1183.0 |
| 30°   | 2036.6 | 1931.0 | 1752.8 | 1576.7 | 1166.5 | 1069.1 | 1077.4 | 1081.5 | 1073.2 | 1071.1 | 1081.5 |
| 32.5° | 2177.5 | 2005.6 | 1835.7 | 1433.7 | 996.6  | 977.9  | 982.1  | 990.3  | 980.0  | 971.7  | 977.9  |
| 35°   | 2332.9 | 2073.9 | 1887.5 | 1241.0 | 890.9  | 884.7  | 888.8  | 884.7  | 876.4  | 864.0  | 870.2  |
| 37.5° | 2517.3 | 2177.5 | 1902.0 | 1009.0 | 801.8  | 803.9  | 799.7  | 772.8  | 747.9  | 712.7  | 729.3  |
| 40°   | 2724.5 | 2353.6 | 1877.1 | 810.1  | 729.3  | 731.4  | 698.2  | 644.3  | 580.1  | 534.5  | 540.8  |
| 42.5° | 2900.6 | 2529.7 | 1825.3 | 694.1  | 671.3  | 665.1  | 607.1  | 520.0  | 462.0  | 426.8  | 428.9  |
| 45°   | 3064.3 | 2710.0 | 1765.2 | 634.0  | 634.0  | 611.2  | 515.9  | 455.8  | 408.2  | 370.9  | 370.9  |
| 47.5° | 3219.7 | 2879.9 | 1688.6 | 607.1  | 598.8  | 544.9  | 468.2  | 414.4  | 377.1  | 339.8  | 335.6  |
| 50°   | 3360.5 | 3033.2 | 1587.0 | 578.0  | 563.5  | 482.7  | 430.9  | 383.3  | 362.6  | 323.2  | 319.1  |
| 52.5° | 3486.9 | 3138.9 | 1493.8 | 551.1  | 520.0  | 428.9  | 393.7  | 366.7  | 379.1  | 333.6  | 325.3  |
| 55°   | 3598.8 | 3188.6 | 1444.1 | 534.5  | 449.6  | 368.8  | 366.7  | 379.1  | 410.2  | 358.4  | 343.9  |
| 57.5° | 3696.2 | 3198.9 | 1442.0 | 501.4  | 379.1  | 319.1  | 348.1  | 366.7  | 447.5  | 377.1  | 364.6  |
| 60°   | 3783.2 | 3198.9 | 1518.7 | 449.6  | 314.9  | 292.1  | 335.6  | 343.9  | 387.4  | 360.5  | 360.5  |
| 62.5° | 3880.6 | 3250.7 | 1634.7 | 389.5  | 269.3  | 275.6  | 337.7  | 333.6  | 337.7  | 352.2  | 360.5  |
| 65°   | 4004.9 | 3379.2 | 1539.4 | 290.1  | 240.3  | 265.2  | 325.3  | 329.4  | 323.2  | 331.5  | 343.9  |
| 67.5° | 4021.5 | 3370.9 | 1137.4 | 250.7  | 219.6  | 254.8  | 314.9  | 323.2  | 288.0  | 290.1  | 304.6  |
| 69°   | 3897.2 | 3227.9 | 832.9  | 234.1  | 209.3  | 246.6  | 308.7  | 304.6  | 275.6  | 281.8  | 281.8  |
| 70°   | 3741.8 | 3078.8 | 685.8  | 225.8  | 203.0  | 242.4  | 300.4  | 298.3  | 275.6  | 275.6  | 263.1  |
| 72.5° | 3128.5 | 2475.9 | 372.9  | 201.0  | 188.5  | 227.9  | 283.8  | 269.3  | 290.1  | 252.8  | 232.0  |
| 75°   | 2312.2 | 1684.4 | 188.5  | 180.3  | 172.0  | 209.3  | 263.1  | 234.1  | 310.8  | 215.5  | 207.2  |
| 77.5° | 1535.2 | 936.5  | 157.5  | 159.5  | 151.2  | 186.5  | 225.8  | 196.8  | 221.7  | 157.5  | 147.1  |
| 80°   | 683.7  | 406.1  | 130.5  | 132.6  | 126.4  | 149.2  | 182.3  | 149.2  | 138.8  | 82.9   | 87.0   |
| 82.5° | 184.4  | 143.0  | 103.6  | 99.4   | 95.3   | 101.5  | 111.9  | 97.4   | 68.4   | 29.0   | 10.4   |
| 85°   | 58.0   | 55.9   | 51.8   | 55.9   | 49.7   | 43.5   | 47.7   | 37.3   | 22.8   | 4.1    | 0.0    |
| 87.5° | 4.1    | 4.1    | 6.2    | 4.1    | 4.1    | 2.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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

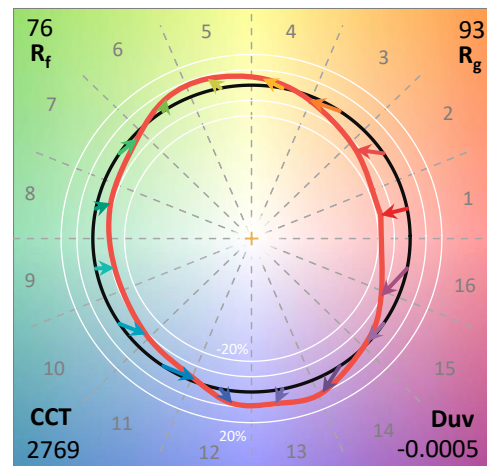
Data in this report applies to families of products including GKO-PB1E-727-U-T4W

### 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     | CRI (Ra): | 71.7 |      |       |
| CIE u':                   | 0.2596   | R1:       | 68.0 | R9:  | -34.5 |
| CIE v':                   | 0.5253   | R2:       | 84.0 | R10: | 64.3  |
| Duv:                      | -0.0005  | R3:       | 94.6 | R11: | 60.9  |
| CIE x:                    | 0.4535   | R4:       | 65.9 | R12: | 54.4  |
| CIE y:                    | 0.4078   | R5:       | 67.3 | R13: | 71.2  |
| CIE z:                    | 0.1387   | R6:       | 78.7 | R14: | 97.6  |
| Peak Wavelength (nm):     | 597      | R7:       | 75.2 | R15: | 59.5  |
| Dominant Wavelength (nm): | 584      | R8:       | 39.8 |      |       |
| Purity:                   | 58.54014 |           |      |      |       |
| Rf:                       | 75.7     |           |      |      |       |
| Rg:                       | 93.2     |           |      |      |       |



### Test Conditions

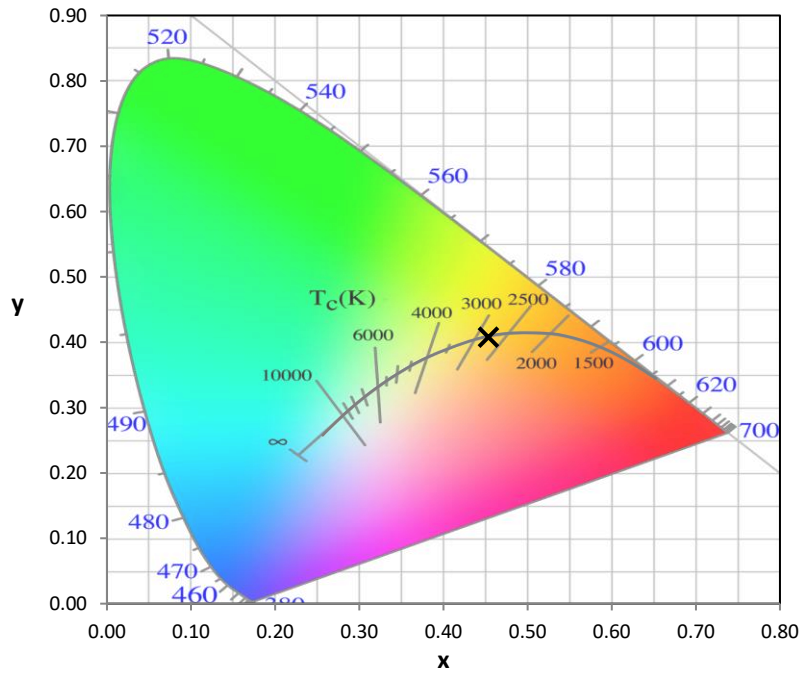
Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP2-2501-321-3

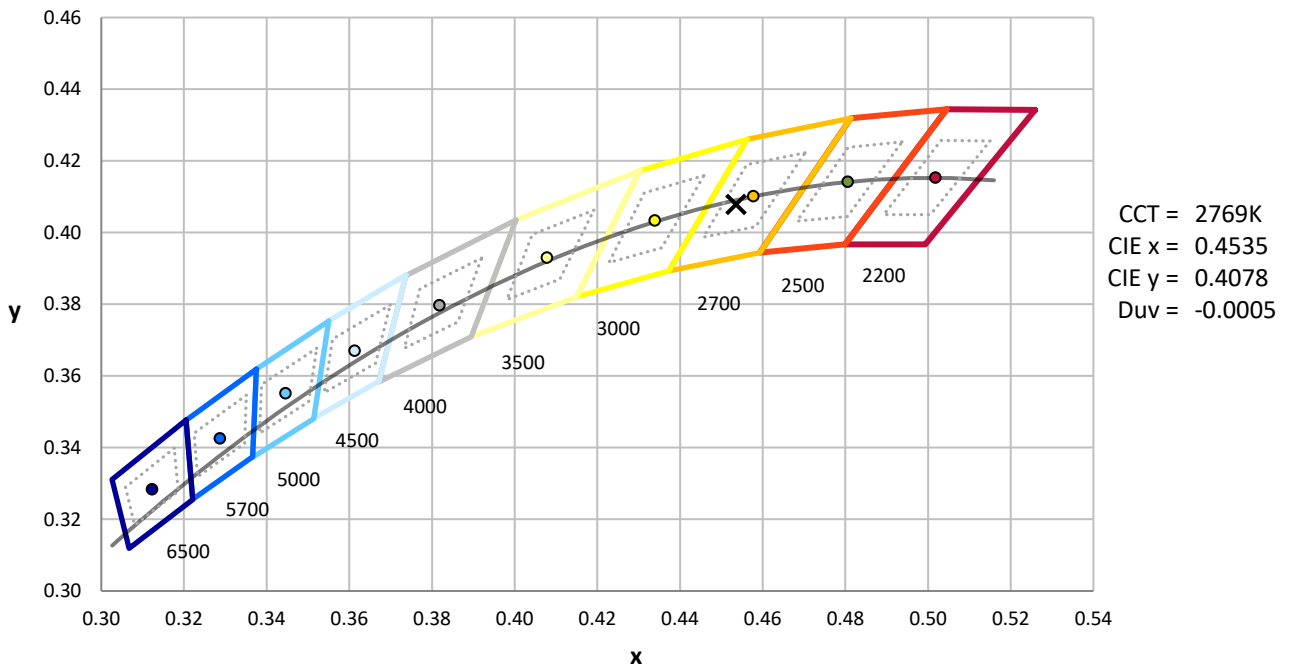
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



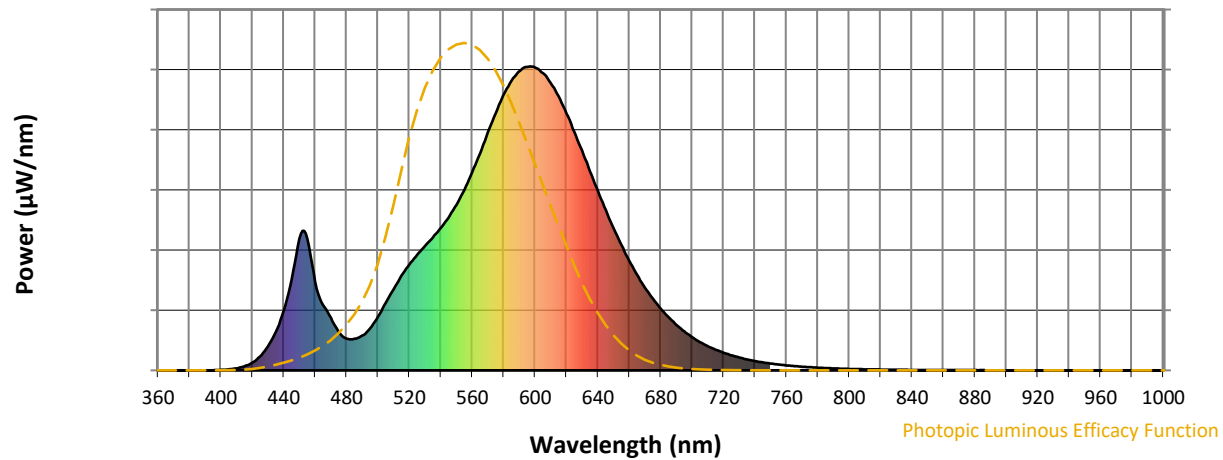
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

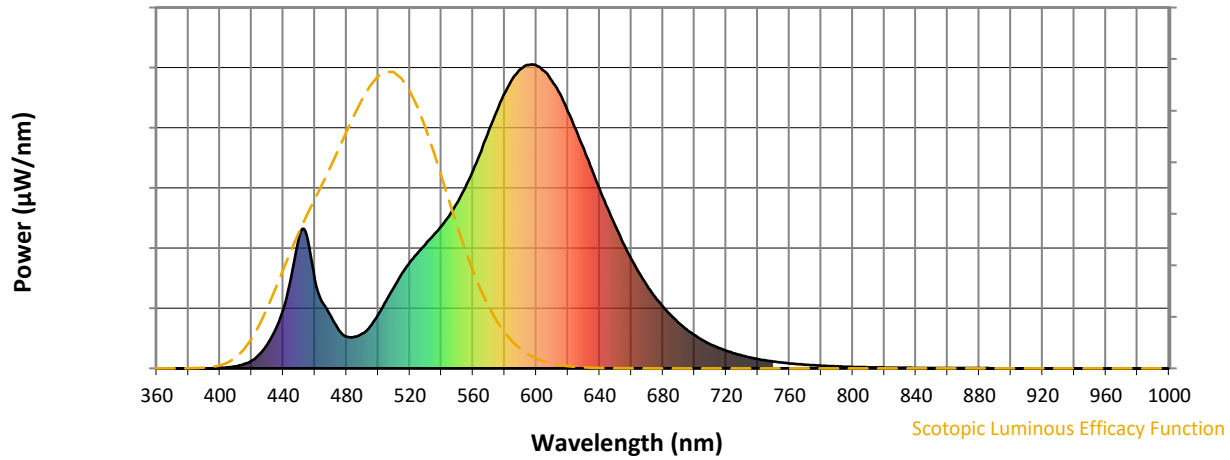


### Photopic Lumens: NR

| $\lambda$<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               | 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                             |                   |                                        |                                |

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### Scotopic Flux vs. Wavelength



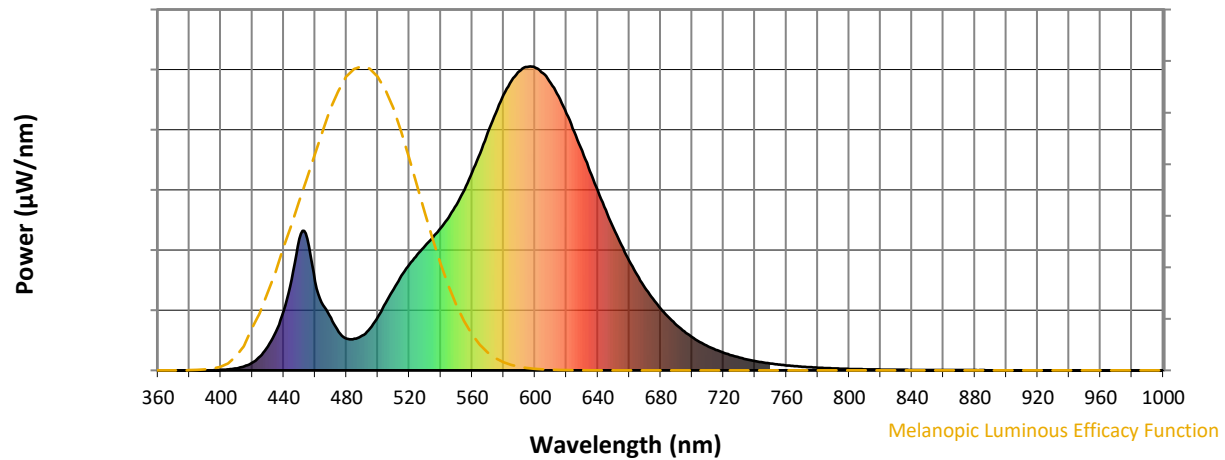
Scotopic Lumens: NR

S/P: 1.14

| $\lambda$<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                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.08

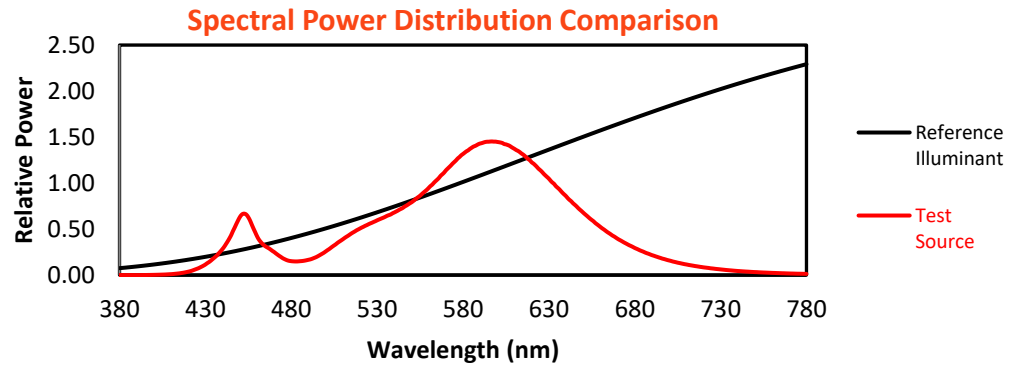
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 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               |           |                             |                  |

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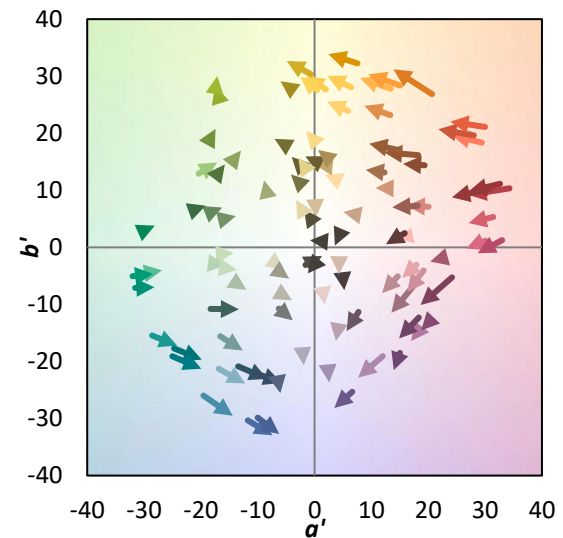
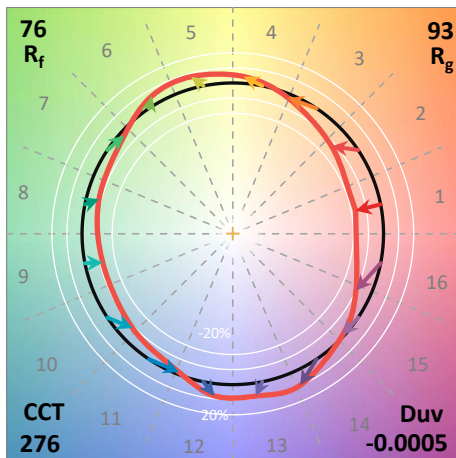
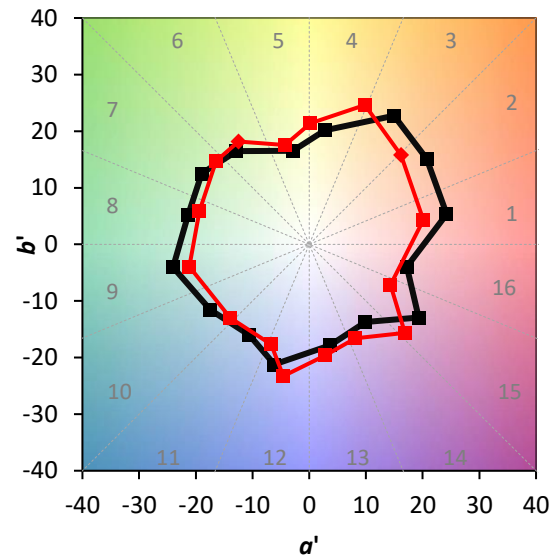
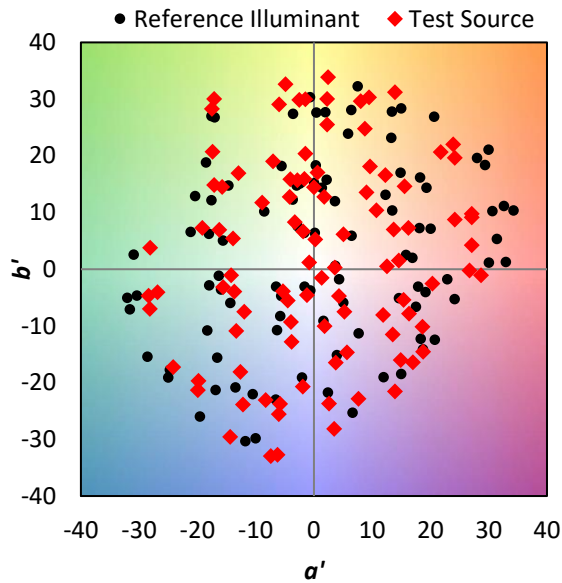
TM-30-18

### Summary

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

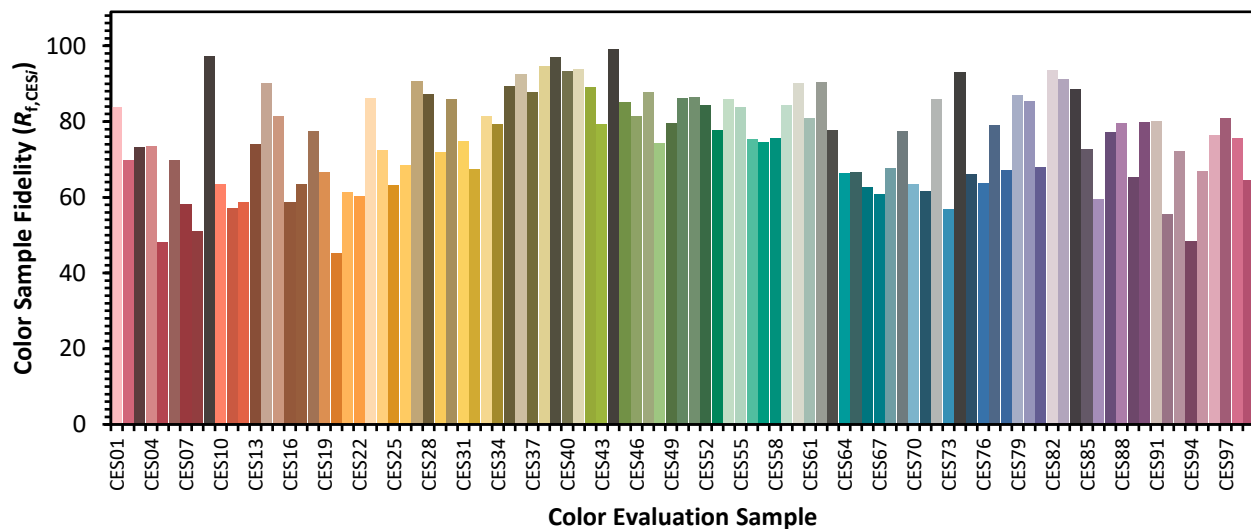


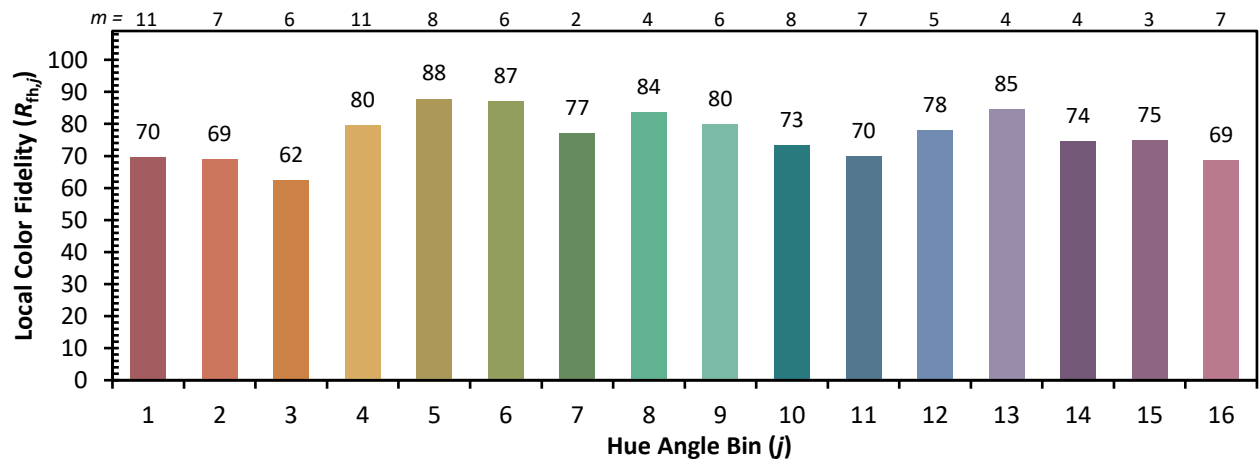
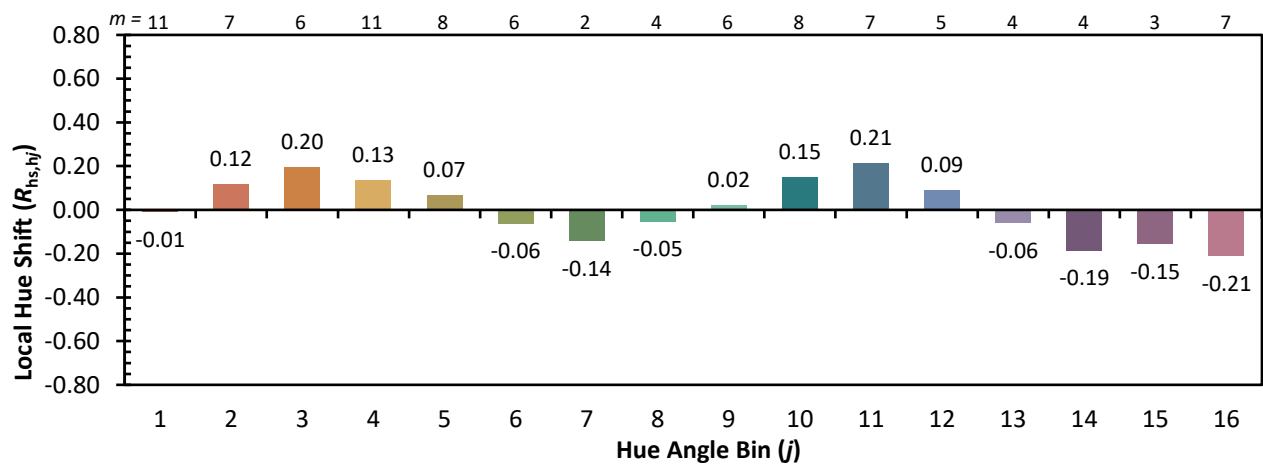
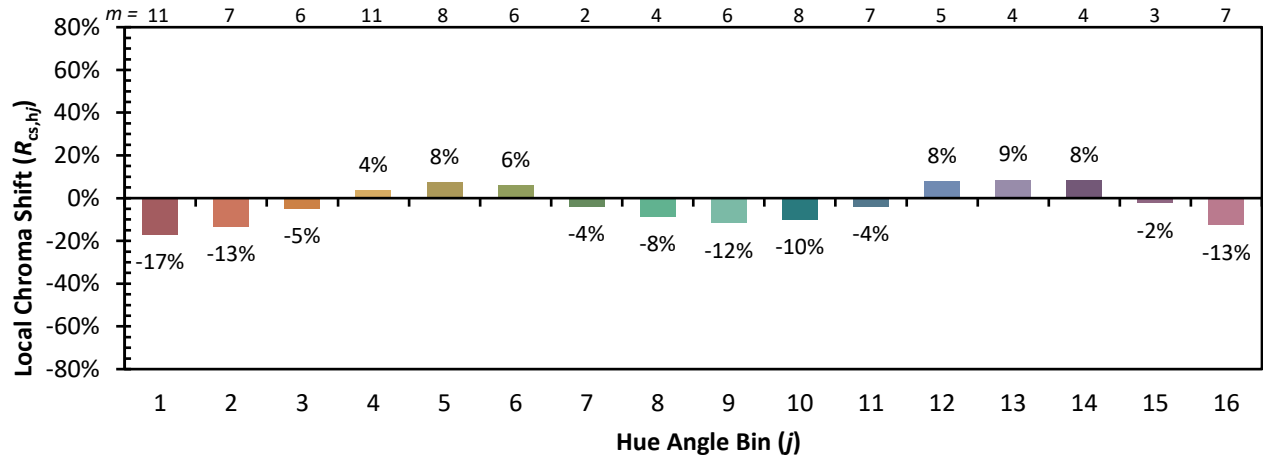
### Color Vector Graphics



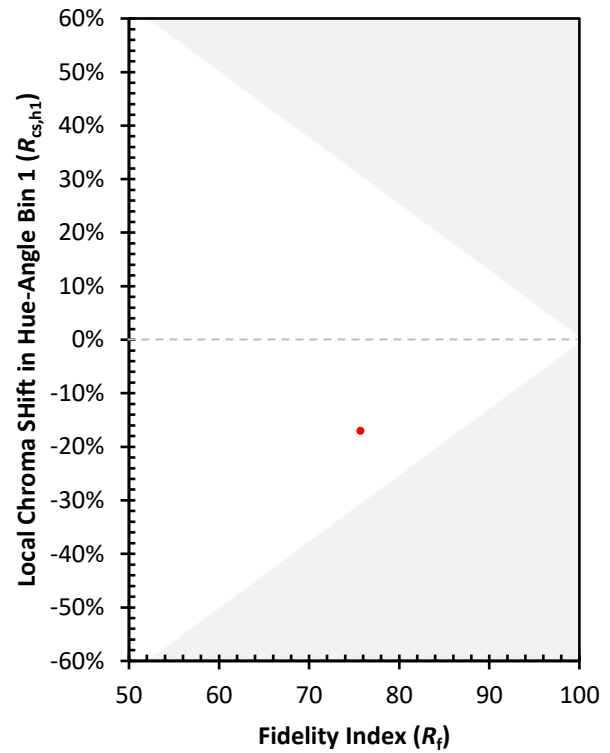
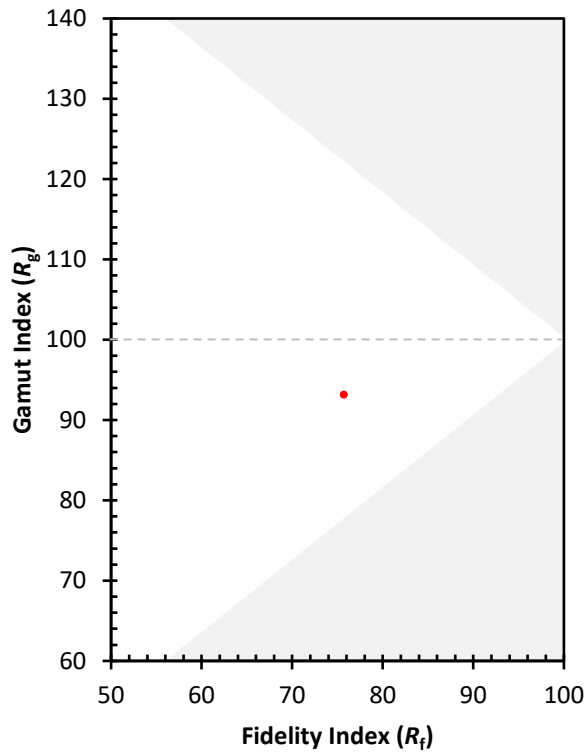
Individual Sample Fidelity Index ( $R_{f,i}$ )

|            |            |            |            |
|------------|------------|------------|------------|
| 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)