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

Cooper Lighting Solutions Photometric Lab
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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: LUMARK

Report Number: P1503443

Luminaire Tested: PRV-P-PB2D-722-U-T4RE-HSS

Issue Date: 07/22/2026

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1503443 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 7/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | LUMARK |
| Catalog Number: | PRV-P-PB2D-722-U-T4RE-HSS |
| Description: | PREVAIL PETITE DISCRETE LED 2 SQUARES AT 695MA 70CRI 2200K FIXTURE w/ TYPE IV ROADWAY ILLUMIANCE DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD |
| Light Source: | (20) 2200K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 7182.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 76.0 lumens/watt |
| Luminous Opening: | Rectangular (W 0.67' x L: 0.33' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - 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 |

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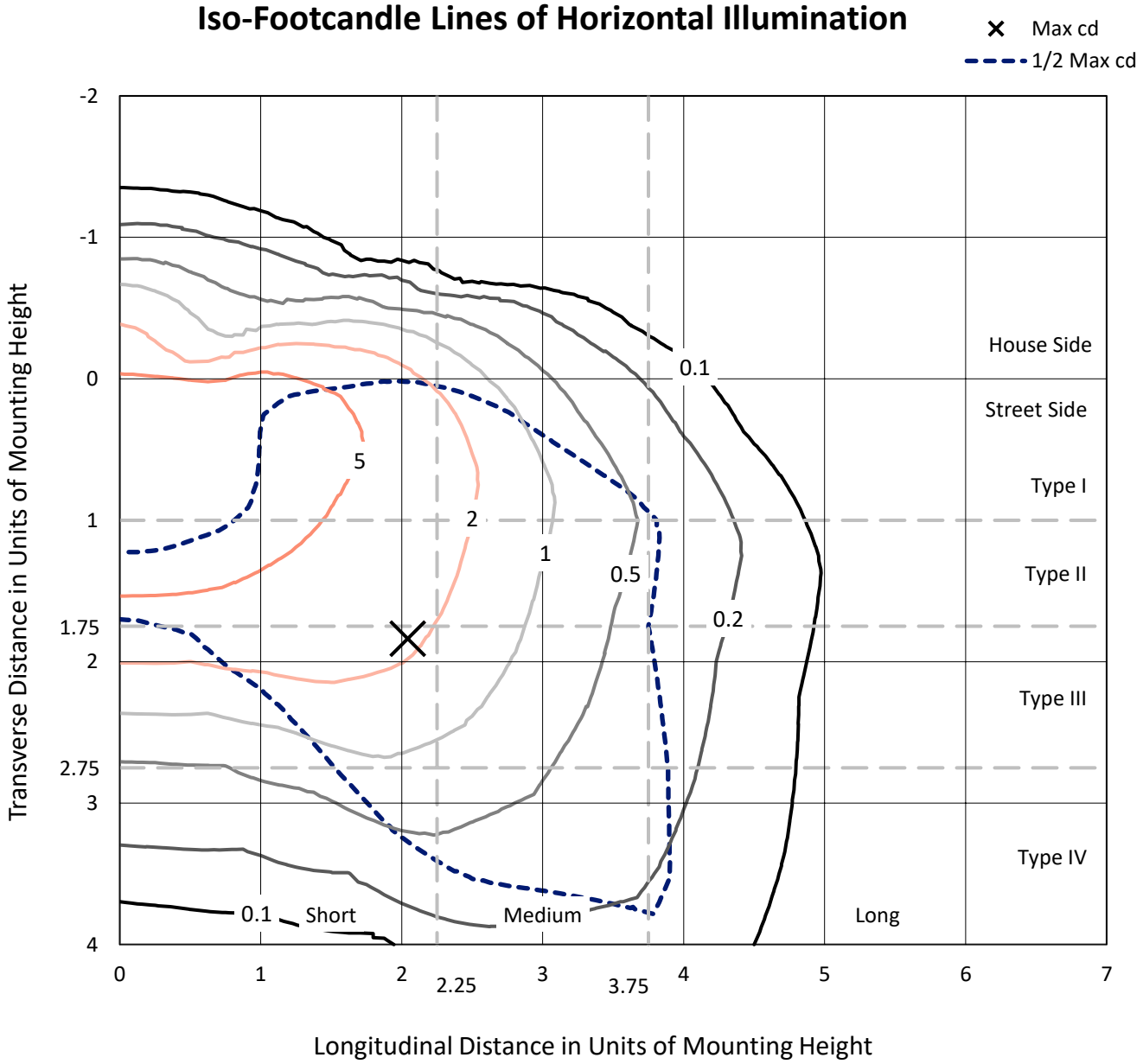
Scaled Data Report

REPORT NUMBER: P1503443
CATALOG NUMBER: PRV-P-PB2D-722-U-T4RE-HSS

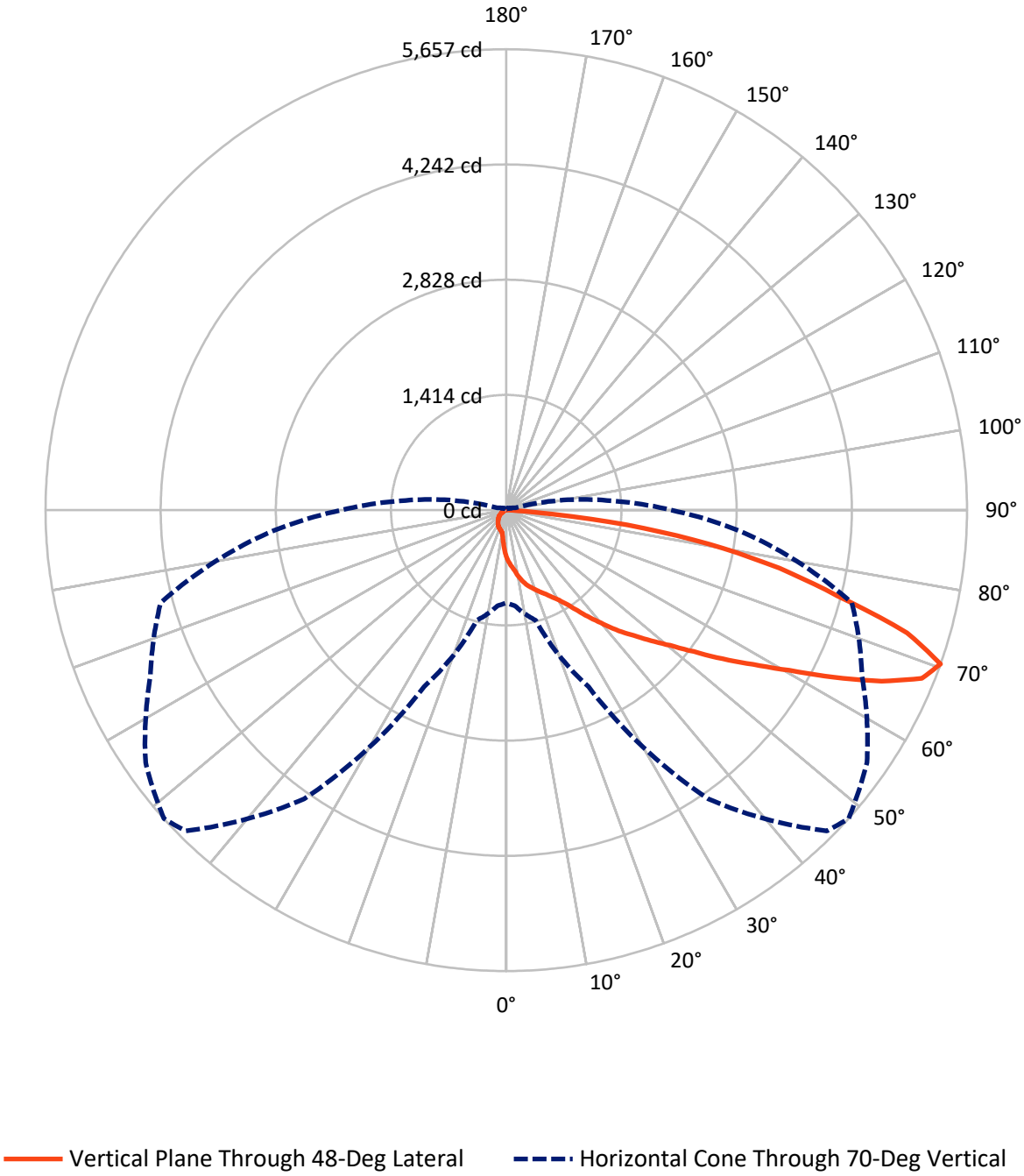
## Iso-Footcandle Lines of Horizontal Illumination




Based on 10 foot mounting height. Maximum calculated value = 9.5 fc
Type IV - Short - N/A

REPORT NUMBER: P1503443
CATALOG NUMBER: PRV-P-PB2D-722-U-T4RE-HSS

## Luminous Intensity Polar Plot



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Scaled Data Report

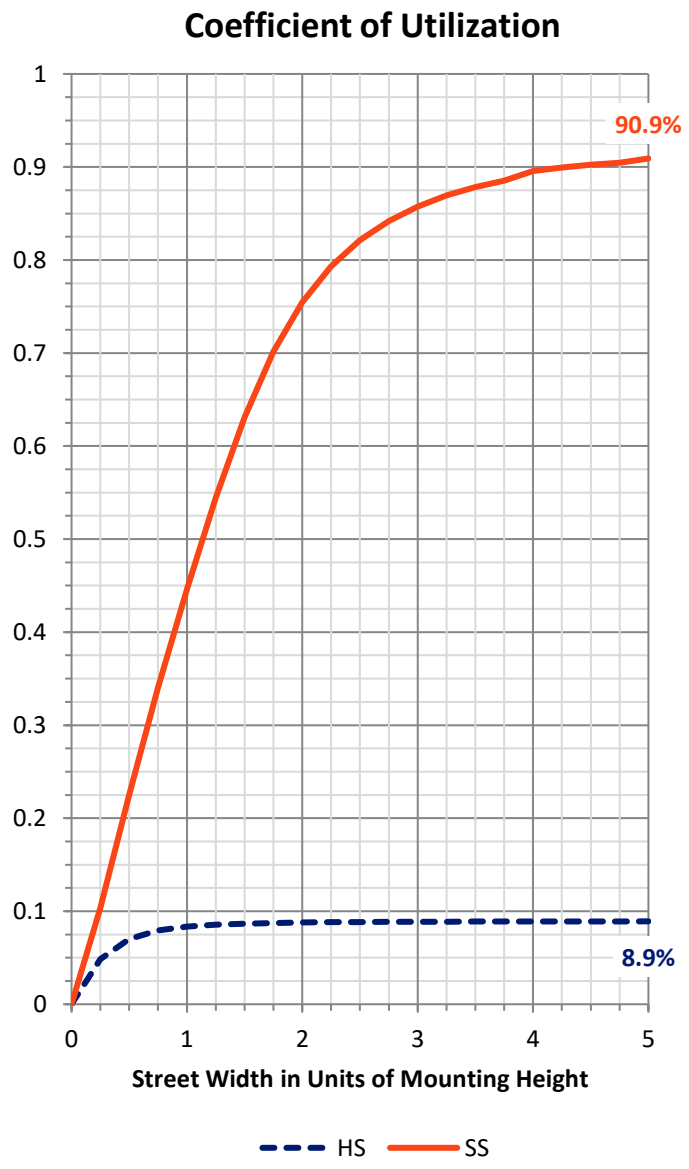
REPORT NUMBER: P1503443
CATALOG NUMBER: PRV-P-PB2D-722-U-T4RE-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 644.8 | 0.0 | 644.8 |
| | % Fixture | 9.0 | 0.0 | 9.0 |
| **Street Side** | Lumens | 6537.4 | 0.0 | 6537.4 |
| | % Fixture | 91.0 | 0.0 | 91.0 |
| **Total** | Lumens | 7182.2 | 0.0 | 7182.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 53.9 | 0.8 |
| 10°-20° | 172.4 | 2.4 |
| 20°-30° | 313.3 | 4.4 |
| 30°-40° | 534.6 | 7.4 |
| 40°-50° | 984.2 | 13.7 |
| 50°-60° | 1602.7 | 22.3 |
| 60°-70° | 2035.3 | 28.3 |
| 70°-80° | 1332.1 | 18.5 |
| 80°-90° | 153.6 | 2.1 |
| 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° | 7182.2 | 100.0 |
| 0°-180° | 7182.2 | 100.0 |

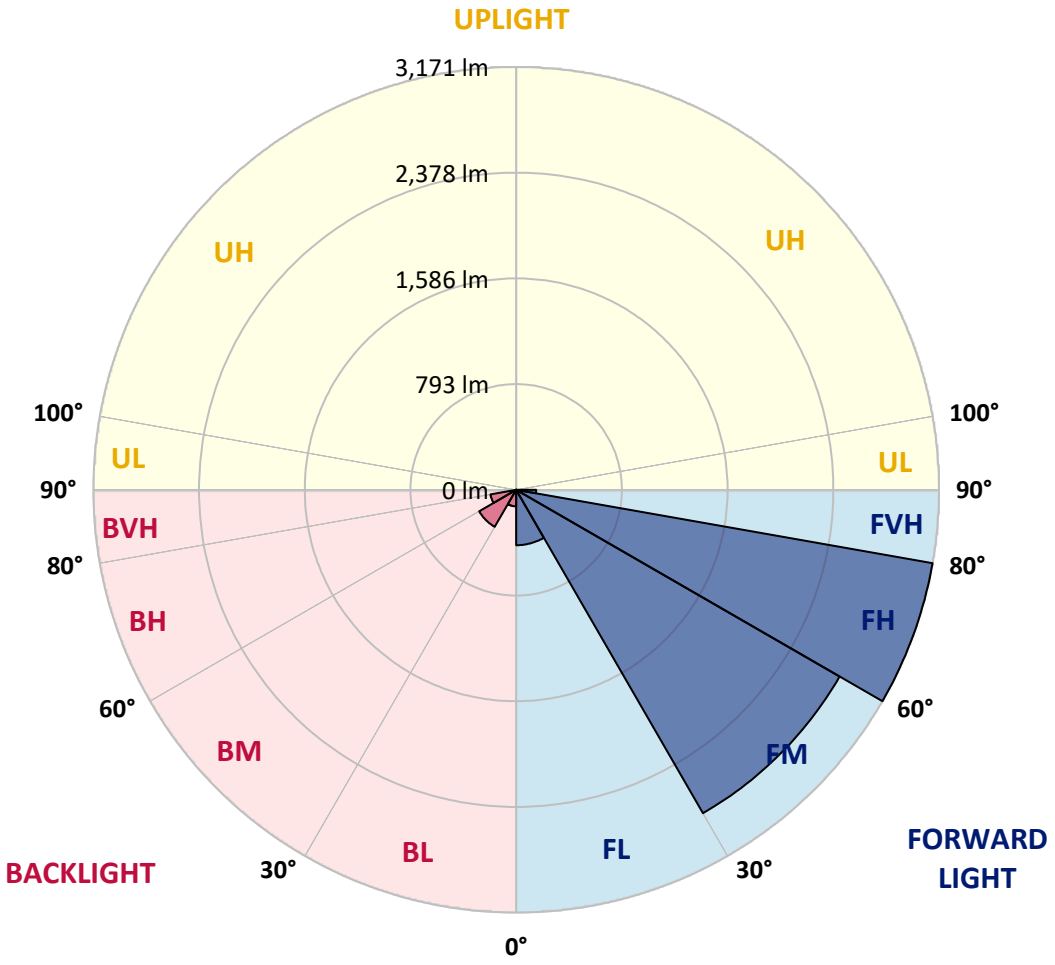


REPORT NUMBER: P1503443
CATALOG NUMBER: PRV-P-PB2D-722-U-T4RE-HSS

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

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 415.6 | 5.8 | | | |
| FM | (30°-60°) | 2800.7 | 39.0 | | | |
| FH | (60°-80°) | 3171.3 | 44.2 | | | G2/5000 |
| FVH | (80°-90°) | 149.8 | 2.1 | | | G2/225 |
| BL | (0°-30°) | 124.0 | 1.7 | B1/500 | | |
| BM | (30°-60°) | 320.8 | 4.5 | B1/1000 | | |
| BH | (60°-80°) | 196.1 | 2.7 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 3.8 | 0.1 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type IV Short



REPORT NUMBER: P1503443
CATALOG NUMBER: PRV-P-PB2D-722-U-T4RE-HSS

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 48° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | *581.0* | 581.0 | 581.0 | 581.0 | 581.0 |
| 2.5° | 663.4 | 663.4 | 661.1 | 658.9 | 654.5 | 645.6 | *641.1* | 632.2 | 621.1 | 607.7 | 592.1 |
| 5° | 750.2 | 739.1 | 743.5 | 734.6 | 716.8 | 696.8 | *692.3* | 676.7 | 654.5 | 630.0 | 601.0 |
| 7.5° | 850.4 | 850.4 | 839.2 | 825.9 | 803.6 | 761.3 | *750.2* | 721.3 | 685.6 | 650.0 | 605.5 |
| 10° | 930.5 | 926.0 | 919.4 | 908.2 | 888.2 | 841.5 | *828.1* | 790.3 | 723.5 | 670.1 | 614.4 |
| 12.5° | 979.5 | 975.0 | 970.6 | 961.7 | 941.6 | 912.7 | *897.1* | 861.5 | 779.1 | 696.8 | 630.0 |
| 15° | 1012.9 | 1010.6 | 1006.2 | 1001.7 | 986.2 | 968.3 | *952.8* | 926.0 | 848.1 | 741.3 | 652.2 |
| 17.5° | 1030.7 | 1030.7 | 1030.7 | 1030.7 | 1026.2 | 1008.4 | *999.5* | 981.7 | 919.4 | 790.3 | 674.5 |
| 20° | 1052.9 | 1055.2 | 1055.2 | 1059.6 | 1059.6 | 1055.2 | *1046.3* | 1035.1 | 988.4 | 854.8 | 701.2 |
| 22.5° | 1077.4 | 1081.9 | 1086.3 | 1095.2 | 1097.5 | 1097.5 | *1095.2* | 1088.6 | 1055.2 | 928.3 | 732.4 |
| 25° | 1115.3 | 1115.3 | 1119.7 | 1133.1 | 1144.2 | 1153.1 | *1146.4* | 1148.7 | 1119.7 | 1010.6 | 770.2 |
| 27.5° | 1179.8 | 1170.9 | 1173.1 | 1179.8 | 1197.6 | 1211.0 | *1211.0* | 1211.0 | 1191.0 | 1097.5 | 817.0 |
| 30° | 1244.4 | 1244.4 | 1248.8 | 1248.8 | 1264.4 | 1284.4 | *1282.2* | 1288.9 | 1268.9 | 1195.4 | 877.1 |
| 32.5° | 1326.7 | 1326.7 | 1329.0 | 1340.1 | 1357.9 | 1380.2 | *1380.2* | 1404.7 | 1377.9 | 1306.7 | 963.9 |
| 35° | 1420.2 | 1422.5 | 1440.3 | 1462.5 | 1480.3 | 1509.3 | *1518.2* | 1551.6 | 1538.2 | 1467.0 | 1086.3 |
| 37.5° | 1524.9 | 1531.5 | 1558.3 | 1593.9 | 1605.0 | 1660.7 | *1676.2* | 1707.4 | 1745.2 | 1734.1 | 1304.5 |
| 40° | 1642.8 | 1645.1 | 1680.7 | 1729.7 | 1754.2 | 1816.5 | *1838.7* | 1907.8 | 2003.5 | 2050.2 | 1627.3 |
| 42.5° | 1838.7 | 1829.8 | 1841.0 | 1898.8 | 1905.5 | 1985.7 | *2025.7* | 2114.8 | 2268.4 | 2395.3 | 1963.4 |
| 45° | 2150.4 | 2132.6 | 2088.1 | 2061.4 | 2028.0 | 2150.4 | *2194.9* | 2312.9 | 2566.7 | 2704.7 | 2270.6 |
| 47.5° | 2477.6 | 2455.4 | 2395.3 | 2341.8 | 2232.8 | 2339.6 | *2393.0* | 2544.4 | 2818.2 | 2980.7 | 2517.7 |
| 50° | 2758.1 | 2749.2 | 2704.7 | 2649.0 | 2524.4 | 2560.0 | *2609.0* | 2813.8 | 3063.1 | 3272.3 | 2744.8 |
| 52.5° | 2962.9 | 2956.2 | 2949.6 | 2958.5 | 2851.6 | 2851.6 | *2882.8* | 3087.6 | 3303.5 | 3506.1 | 2942.9 |
| 55° | 3114.3 | 3121.0 | 3127.6 | 3205.6 | 3178.8 | 3161.0 | *3221.1* | 3374.7 | 3555.1 | 3739.8 | 3114.3 |
| 57.5° | 3089.8 | 3112.1 | 3287.9 | 3441.5 | 3481.6 | 3546.1 | *3568.4* | 3686.4 | 3820.0 | 3984.7 | 3283.5 |
| 60° | 2747.0 | 2780.4 | 3058.6 | 3670.8 | 3837.8 | 3960.2 | *3989.1* | 4038.1 | 4096.0 | 4278.5 | 3535.0 |
| 62.5° | 2386.4 | 2413.1 | 2657.9 | 3633.0 | 4222.9 | 4498.9 | *4512.3* | 4516.7 | 4463.3 | 4641.4 | 3744.3 |
| 65° | 2072.5 | 2099.2 | 2297.3 | 3301.3 | 4554.6 | 5064.3 | *5062.1* | 4964.2 | 4846.2 | 4826.1 | 3673.0 |
| 67.5° | 1616.1 | 1658.4 | 1896.6 | 2831.6 | 4599.1 | 5514.0 | *5505.1* | 5331.5 | 5062.1 | 4721.5 | 3343.6 |
| 70° | *1139.8* | *1175.4* | *1400.2* | *2390.8* | *4325.3* | *5567.4* | *5656.5* | *5404.9* | *4819.5* | *4392.1* | *2862.7* |
| 72.5° | 906.0 | 941.6 | 1095.2 | 1923.3 | 4087.1 | 5095.5 | *5146.7* | 4841.7 | 4227.3 | 3802.1 | 2194.9 |
| 75° | 538.7 | 583.2 | 750.2 | 1375.7 | 3697.5 | 4305.2 | *4196.2* | 4076.0 | 3399.2 | 3158.8 | 1605.0 |
| 77.5° | 233.7 | 260.5 | 382.9 | 734.6 | 2568.9 | 3590.7 | *3430.4* | 3047.5 | 2355.2 | 2130.4 | 894.9 |
| 80° | 111.3 | 118.0 | 142.5 | 296.1 | 1224.3 | 2571.1 | *2531.1* | 2063.6 | 1297.8 | 1004.0 | 327.2 |
| 82.5° | 57.9 | 60.1 | 84.6 | 122.4 | 396.2 | 1357.9 | *1500.4* | 1173.1 | 523.1 | 289.4 | 62.3 |
| 85° | 22.3 | 26.7 | 35.6 | 57.9 | 73.5 | 307.2 | *358.4* | 394.0 | 160.3 | 55.7 | 26.7 |
| 87.5° | 2.2 | 4.5 | 6.7 | 8.9 | 11.1 | 13.4 | *13.4* | 15.6 | 13.4 | 6.7 | 4.5 |
| 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: P1503443
CATALOG NUMBER: PRV-P-PB2D-722-U-T4RE-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 | 581.0 |
| 2.5° | 583.2 | 574.3 | 552.1 | 536.5 | 516.5 | 496.4 | 485.3 | 469.7 | 463.0 | 465.3 | 463.0 |
| 5° | 581.0 | 563.2 | 518.7 | 471.9 | 438.5 | 402.9 | 385.1 | 362.9 | 356.2 | 349.5 | 356.2 |
| 7.5° | 581.0 | 549.8 | 480.8 | 414.1 | 365.1 | 331.7 | 309.4 | 298.3 | 293.8 | 293.8 | 293.8 |
| 10° | 581.0 | 536.5 | 445.2 | 362.9 | 309.4 | 282.7 | 278.3 | 280.5 | 282.7 | 284.9 | 284.9 |
| 12.5° | 585.5 | 529.8 | 407.4 | 320.6 | 271.6 | 264.9 | 269.4 | 273.8 | 278.3 | 278.3 | 280.5 |
| 15° | 594.4 | 525.4 | 378.4 | 282.7 | 258.2 | 258.2 | 260.5 | 264.9 | 269.4 | 271.6 | 271.6 |
| 17.5° | 607.7 | 520.9 | 347.3 | 260.5 | 249.3 | 249.3 | 251.5 | 253.8 | 260.5 | 262.7 | 262.7 |
| 20° | 621.1 | 516.5 | 320.6 | 247.1 | 242.6 | 242.6 | 242.6 | 244.9 | 249.3 | 251.5 | 251.5 |
| 22.5° | 638.9 | 514.2 | 291.6 | 238.2 | 233.7 | 233.7 | 233.7 | 233.7 | 236.0 | 238.2 | 238.2 |
| 25° | 656.7 | 512.0 | 264.9 | 229.3 | 227.1 | 224.8 | 222.6 | 222.6 | 222.6 | 224.8 | 224.8 |
| 27.5° | 679.0 | 509.8 | 240.4 | 218.2 | 215.9 | 213.7 | 213.7 | 209.3 | 211.5 | 213.7 | 211.5 |
| 30° | 710.1 | 509.8 | 222.6 | 207.0 | 202.6 | 202.6 | 200.3 | 195.9 | 198.1 | 198.1 | 198.1 |
| 32.5° | 761.3 | 527.6 | 213.7 | 195.9 | 189.2 | 189.2 | 184.8 | 182.5 | 182.5 | 182.5 | 182.5 |
| 35° | 839.2 | 569.9 | 215.9 | 191.4 | 180.3 | 173.6 | 169.2 | 167.0 | 164.7 | 162.5 | 162.5 |
| 37.5° | 966.1 | 625.5 | 231.5 | 193.7 | 171.4 | 162.5 | 155.8 | 149.1 | 144.7 | 140.2 | 138.0 |
| 40° | 1197.6 | 763.5 | 253.8 | 202.6 | 164.7 | 149.1 | 140.2 | 129.1 | 120.2 | 115.8 | 111.3 |
| 42.5° | 1462.5 | 941.6 | 284.9 | 209.3 | 160.3 | 135.8 | 122.4 | 109.1 | 100.2 | 93.5 | 91.3 |
| 45° | 1689.6 | 1115.3 | 358.4 | 211.5 | 151.4 | 124.7 | 106.9 | 91.3 | 84.6 | 77.9 | 75.7 |
| 47.5° | 1861.0 | 1246.6 | 434.1 | 207.0 | 144.7 | 113.5 | 91.3 | 77.9 | 71.2 | 64.6 | 62.3 |
| 50° | 2021.3 | 1351.2 | 489.7 | 195.9 | 138.0 | 102.4 | 77.9 | 66.8 | 60.1 | 55.7 | 53.4 |
| 52.5° | 2145.9 | 1431.4 | 527.6 | 182.5 | 129.1 | 91.3 | 69.0 | 57.9 | 51.2 | 49.0 | 49.0 |
| 55° | 2263.9 | 1511.5 | 554.3 | 173.6 | 118.0 | 77.9 | 60.1 | 53.4 | 46.7 | 44.5 | 44.5 |
| 57.5° | 2373.0 | 1602.8 | 596.6 | 164.7 | 100.2 | 69.0 | 53.4 | 49.0 | 44.5 | 40.1 | 37.8 |
| 60° | 2571.1 | 1789.8 | 627.8 | 133.6 | 82.4 | 60.1 | 49.0 | 44.5 | 40.1 | 35.6 | 35.6 |
| 62.5° | 2729.2 | 1898.8 | 536.5 | 86.8 | 69.0 | 53.4 | 46.7 | 40.1 | 35.6 | 31.2 | 31.2 |
| 65° | 2662.4 | 1818.7 | 369.5 | 69.0 | 57.9 | 49.0 | 40.1 | 35.6 | 28.9 | 24.5 | 24.5 |
| 67.5° | 2404.2 | 1609.5 | 222.6 | 57.9 | 49.0 | 42.3 | 35.6 | 28.9 | 22.3 | 17.8 | 17.8 |
| 70° | *2025.7* | *1302.3* | *115.8* | *49.0* | *40.1* | *33.4* | *26.7* | *22.3* | *15.6* | *13.4* | *11.1* |
| 72.5° | 1567.2 | 877.1 | 57.9 | 42.3 | 35.6 | 28.9 | 22.3 | 17.8 | 11.1 | 8.9 | 6.7 |
| 75° | 1081.9 | 547.6 | 44.5 | 35.6 | 28.9 | 22.3 | 17.8 | 13.4 | 6.7 | 4.5 | 4.5 |
| 77.5° | 569.9 | 269.4 | 35.6 | 31.2 | 24.5 | 20.0 | 13.4 | 8.9 | 4.5 | 2.2 | 2.2 |
| 80° | 213.7 | 80.1 | 28.9 | 24.5 | 20.0 | 15.6 | 8.9 | 4.5 | 2.2 | 0.0 | 0.0 |
| 82.5° | 40.1 | 24.5 | 17.8 | 17.8 | 13.4 | 8.9 | 4.5 | 2.2 | 0.0 | 0.0 | 0.0 |
| 85° | 20.0 | 13.4 | 6.7 | 6.7 | 4.5 | 2.2 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 4.5 | 4.5 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP2-2501-321-2

Test Date: 04/09/2025

Luminaire Tested: GKO-PB1E-722-U-T4W

Data in this report applies to families of products including GKO-PB1E-722-U-T4W

Report Generated By FNC07603 / LDUCLS01DT447
Version: v7.04

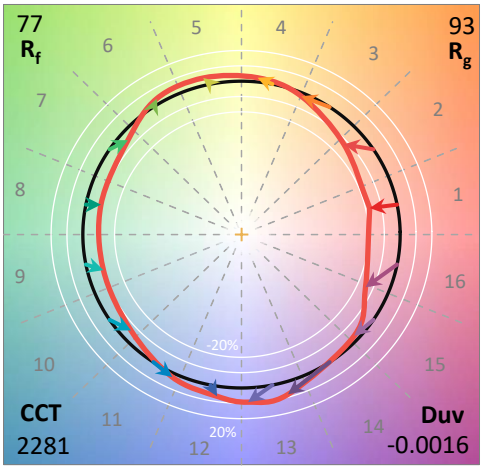
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP2-2501-321-2 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP2 - 165CM SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 04/10/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GKO-PB1E-722-U-T4W** |
| Description: | Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution |

## Spectral Parameters

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CCT (K): | 2281 | CRI (Ra): | | 70.6 | | | |
| CIE u': | 0.2851 | R1: | | 68.4 | R9: | | -35.1 |
| CIE v': | 0.5324 | R2: | | 88.7 | R10: | | 78.0 |
| Duv: | -0.0016 | R3: | | 85.7 | R11: | | 60.2 |
| CIE x: | 0.4942 | R4: | | 63.2 | R12: | | 73.8 |
| CIE y: | 0.4102 | R5: | | 69.0 | R13: | | 72.8 |
| CIE z: | 0.0956 | R6: | | 88.6 | R14: | | 92.4 |
| Peak Wavelength (nm): | 602 | R7: | | 68.8 | R15: | | 58.4 |
| Dominant Wavelength (nm): | 587 | R8: | | 32.6 | | | |
| Purity: | 71.48321 | | | | | | |

| | |
|---|---|
| Rf: | 76.9 |
| Rg: | 92.6 |



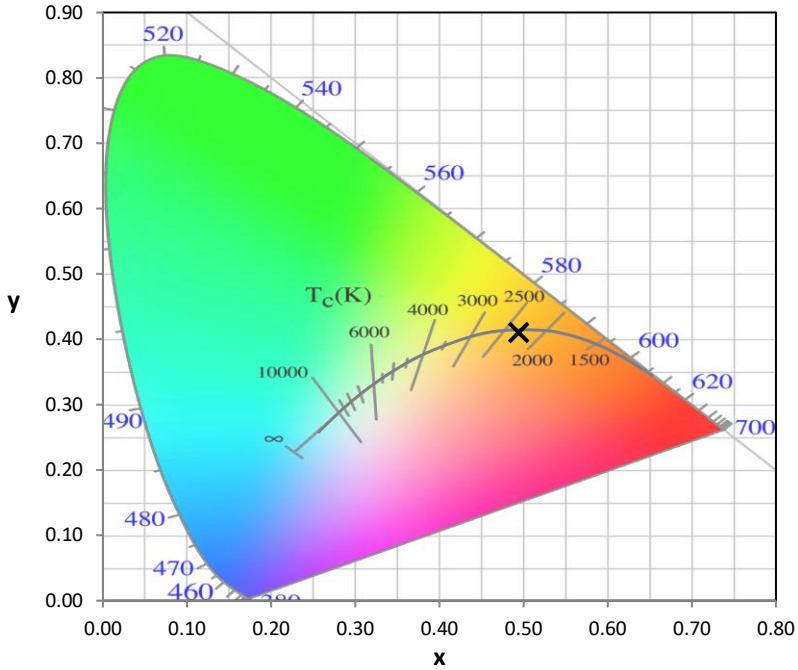

## Test Conditions

| | |
|---|---|
| Stabilization Time: | 40M |
| Operation Time: | 1H 40M |
| Sphere Temperature (°C): | 25.0 |

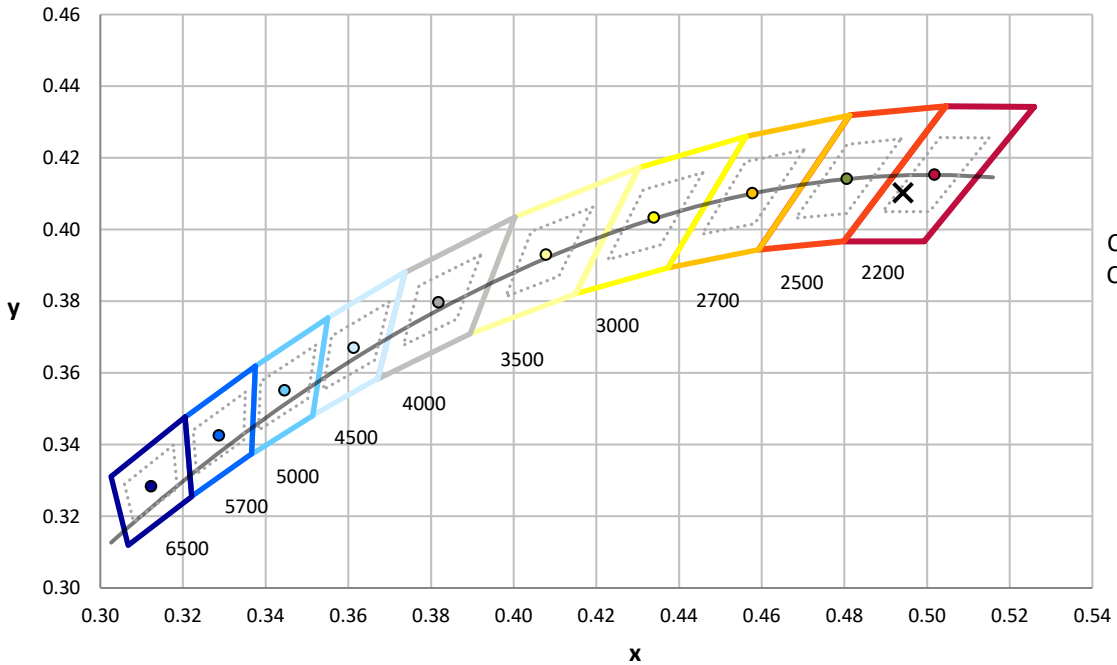
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN2187 | 1/6/2025 | 7/6/2025 |
| Power Meter | INXT2011002 | 1/21/2025 | 1/21/2026 |
| AC Power Source | IN0458 | 10/22/2024 | 10/22/2025 |
| DC Power 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: SP2-2501-321-2

## CIE 1931 Chromaticity Diagram




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




CCT = 2281K
CIE x = 0.4942
CIE y = 0.4102
Duv = -0.0016

Point lies inside the ANSI 2200K 4-step quadrangle

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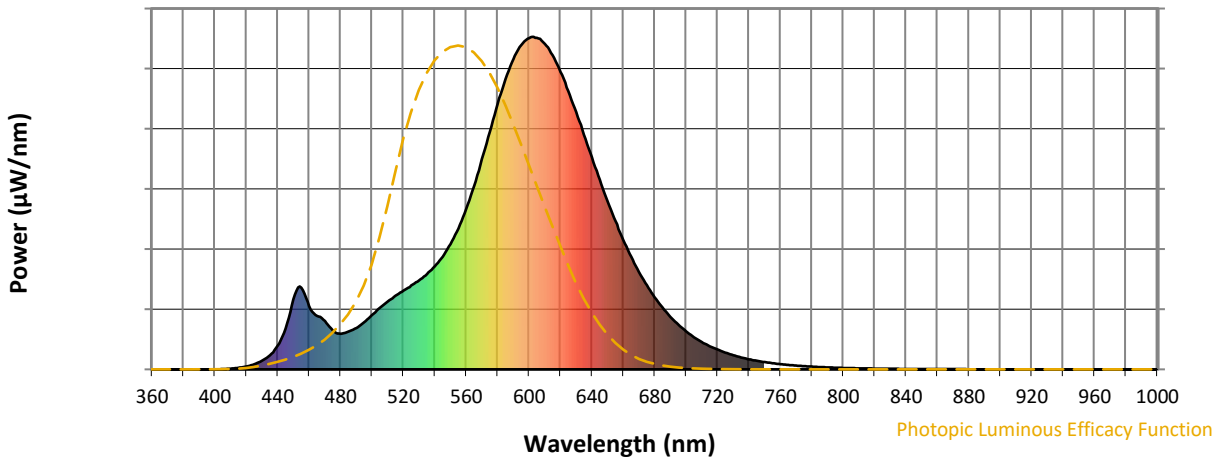
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 124 | NR | 620 | 894 | NR | 750 | 22 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 141 | NR | 625 | 837 | NR | 755 | 19 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 163 | NR | 630 | 774 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 184 | NR | 635 | 706 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 204 | NR | 640 | 638 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 221 | NR | 645 | 570 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 237 | NR | 650 | 505 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 252 | NR | 655 | 446 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 268 | NR | 660 | 389 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 1 | NR | 535 | 287 | NR | 665 | 339 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 2 | NR | 540 | 310 | NR | 670 | 292 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 5 | NR | 545 | 339 | NR | 675 | 253 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 9 | NR | 550 | 377 | NR | 680 | 217 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 15 | NR | 555 | 424 | NR | 685 | 186 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 26 | NR | 560 | 482 | NR | 690 | 158 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 43 | NR | 565 | 551 | NR | 695 | 135 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 71 | NR | 570 | 632 | NR | 700 | 114 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 123 | NR | 575 | 714 | NR | 705 | 97 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 210 | NR | 580 | 797 | NR | 710 | 82 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 873 | NR | 715 | 70 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 190 | NR | 590 | 934 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 161 | NR | 595 | 975 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 145 | NR | 600 | 996 | NR | 730 | 43 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 117 | NR | 605 | 997 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 107 | NR | 610 | 978 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 113 | NR | 615 | 945 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

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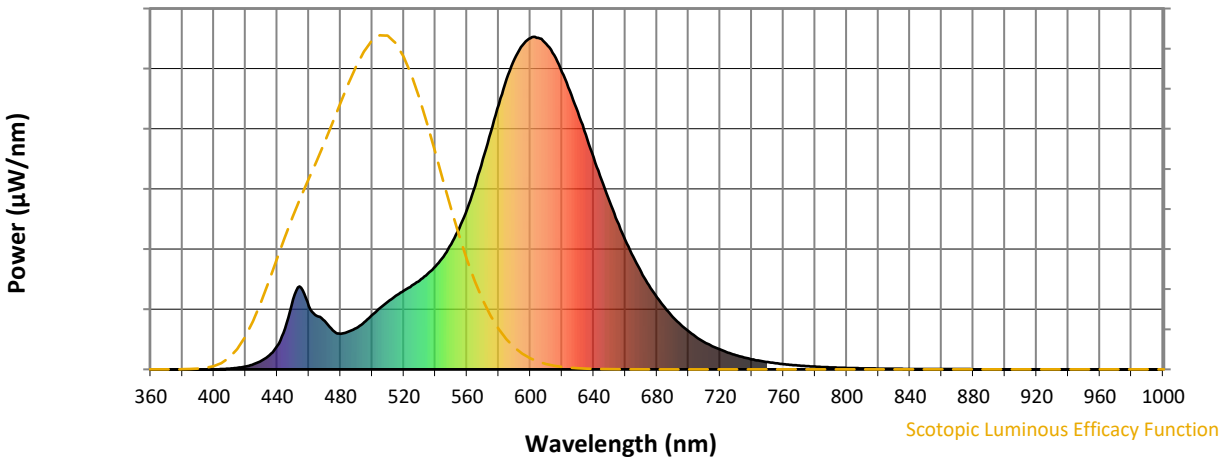
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 0.98**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 124 | NR | 620 | 894 | NR | 750 | 22 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 141 | NR | 625 | 837 | NR | 755 | 19 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 163 | NR | 630 | 774 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 184 | NR | 635 | 706 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 204 | NR | 640 | 638 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 221 | NR | 645 | 570 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 237 | NR | 650 | 505 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 252 | NR | 655 | 446 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 268 | NR | 660 | 389 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 1 | NR | 535 | 287 | NR | 665 | 339 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 2 | NR | 540 | 310 | NR | 670 | 292 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 5 | NR | 545 | 339 | NR | 675 | 253 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 9 | NR | 550 | 377 | NR | 680 | 217 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 15 | NR | 555 | 424 | NR | 685 | 186 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 26 | NR | 560 | 482 | NR | 690 | 158 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 43 | NR | 565 | 551 | NR | 695 | 135 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 71 | NR | 570 | 632 | NR | 700 | 114 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 123 | NR | 575 | 714 | NR | 705 | 97 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 210 | NR | 580 | 797 | NR | 710 | 82 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 873 | NR | 715 | 70 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 190 | NR | 590 | 934 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 161 | NR | 595 | 975 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 145 | NR | 600 | 996 | NR | 730 | 43 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 117 | NR | 605 | 997 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 107 | NR | 610 | 978 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 113 | NR | 615 | 945 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

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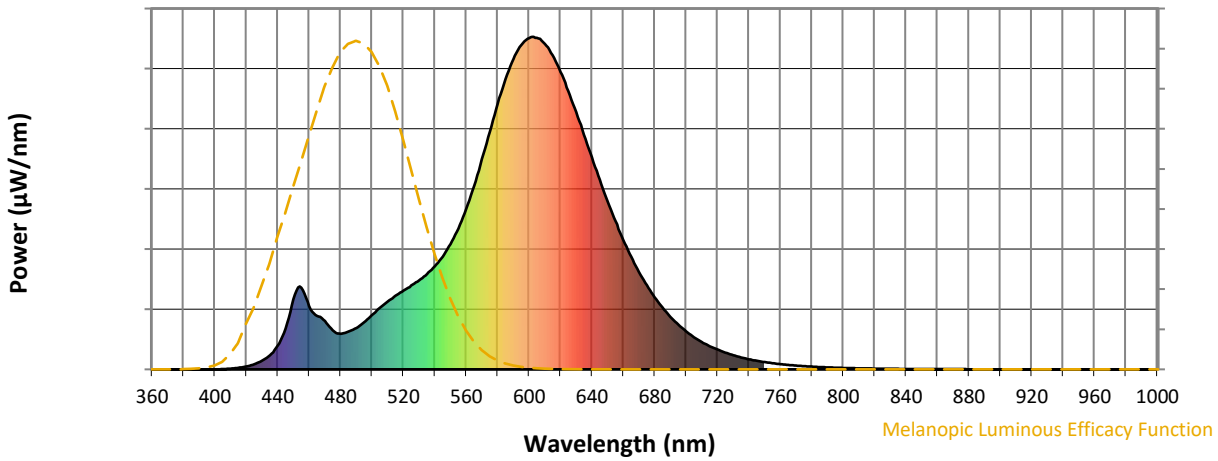
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 1.75**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 124 | NR | 620 | 894 | NR | 750 | 22 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 141 | NR | 625 | 837 | NR | 755 | 19 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 163 | NR | 630 | 774 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 184 | NR | 635 | 706 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 204 | NR | 640 | 638 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 221 | NR | 645 | 570 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 237 | NR | 650 | 505 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 252 | NR | 655 | 446 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 268 | NR | 660 | 389 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 1 | NR | 535 | 287 | NR | 665 | 339 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 2 | NR | 540 | 310 | NR | 670 | 292 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 5 | NR | 545 | 339 | NR | 675 | 253 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 9 | NR | 550 | 377 | NR | 680 | 217 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 15 | NR | 555 | 424 | NR | 685 | 186 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 26 | NR | 560 | 482 | NR | 690 | 158 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 43 | NR | 565 | 551 | NR | 695 | 135 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 71 | NR | 570 | 632 | NR | 700 | 114 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 123 | NR | 575 | 714 | NR | 705 | 97 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 210 | NR | 580 | 797 | NR | 710 | 82 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 873 | NR | 715 | 70 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 190 | NR | 590 | 934 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 161 | NR | 595 | 975 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 145 | NR | 600 | 996 | NR | 730 | 43 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 117 | NR | 605 | 997 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 107 | NR | 610 | 978 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 113 | NR | 615 | 945 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

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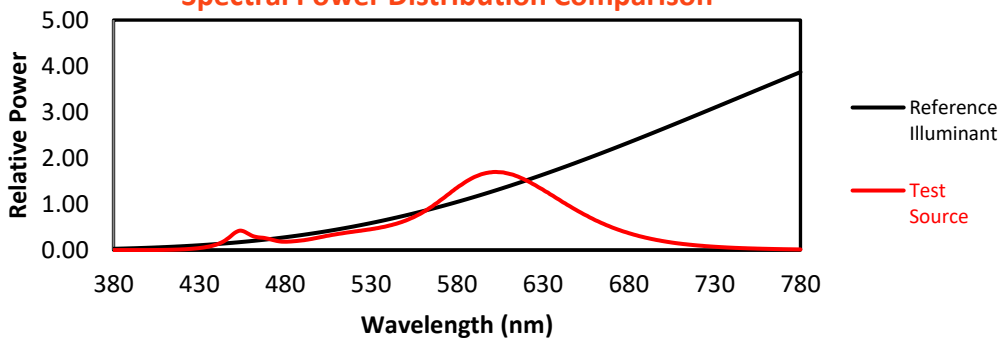
# TM-30-18

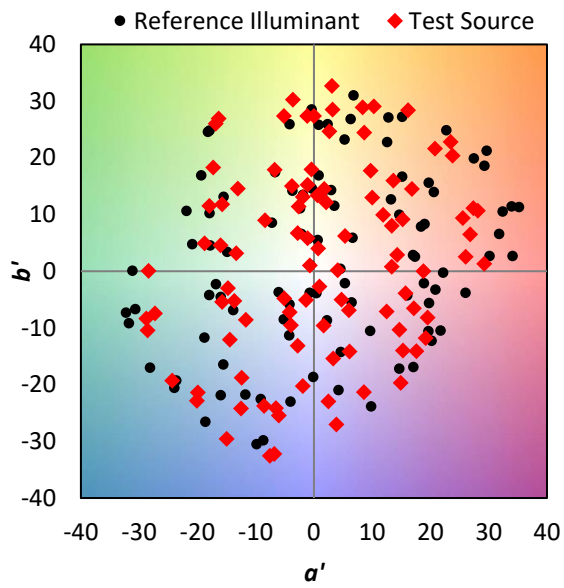
## Summary

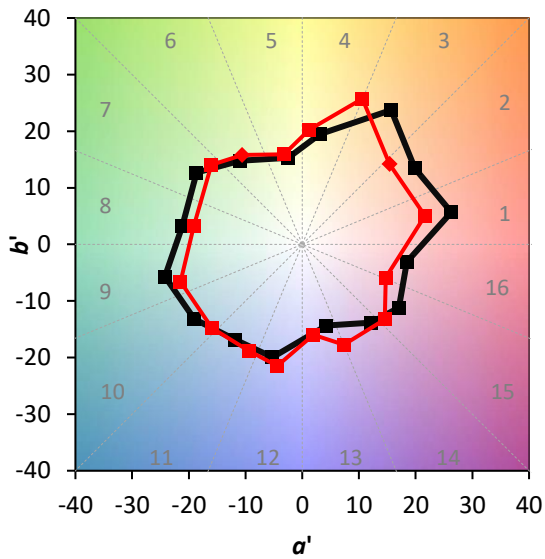
$R_f$ = 76.9
$R_g$ = 92.6
CIE $R_a$ = 70.6
$R_9$ = -35.1

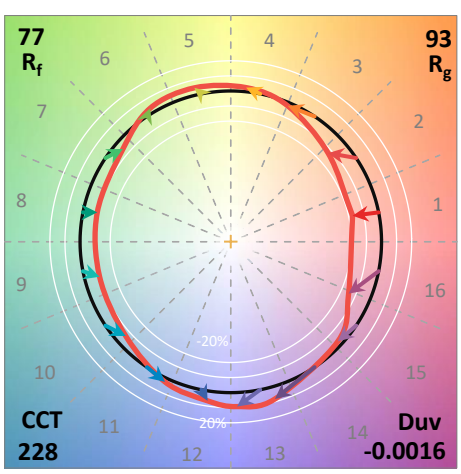
## Spectral Power Distribution Comparison

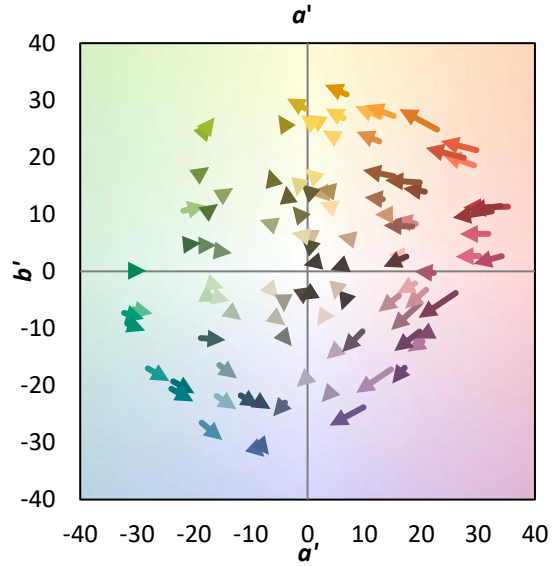



## Color Vector Graphics



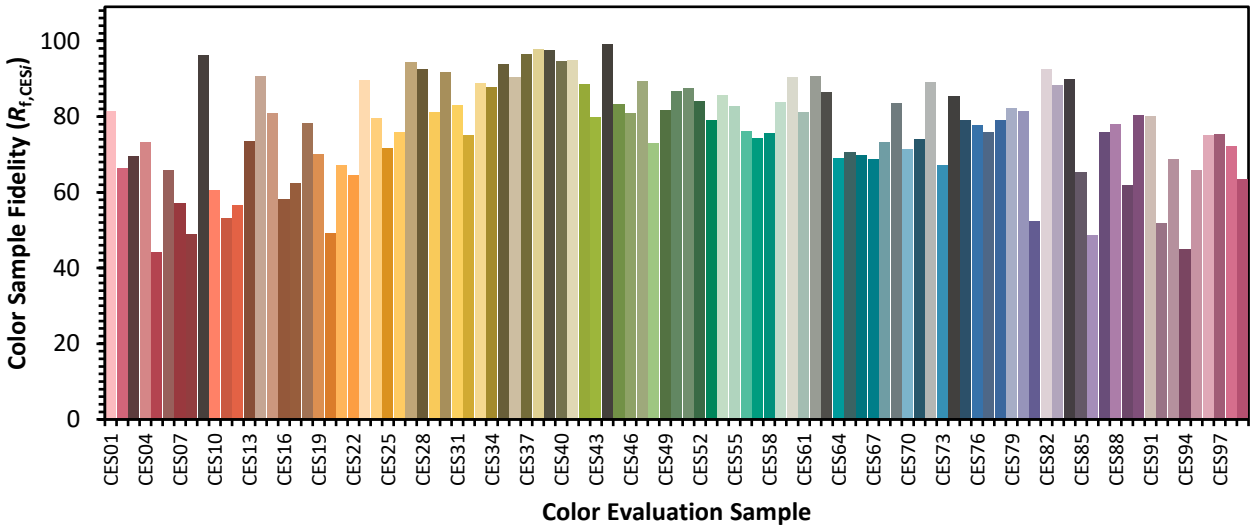



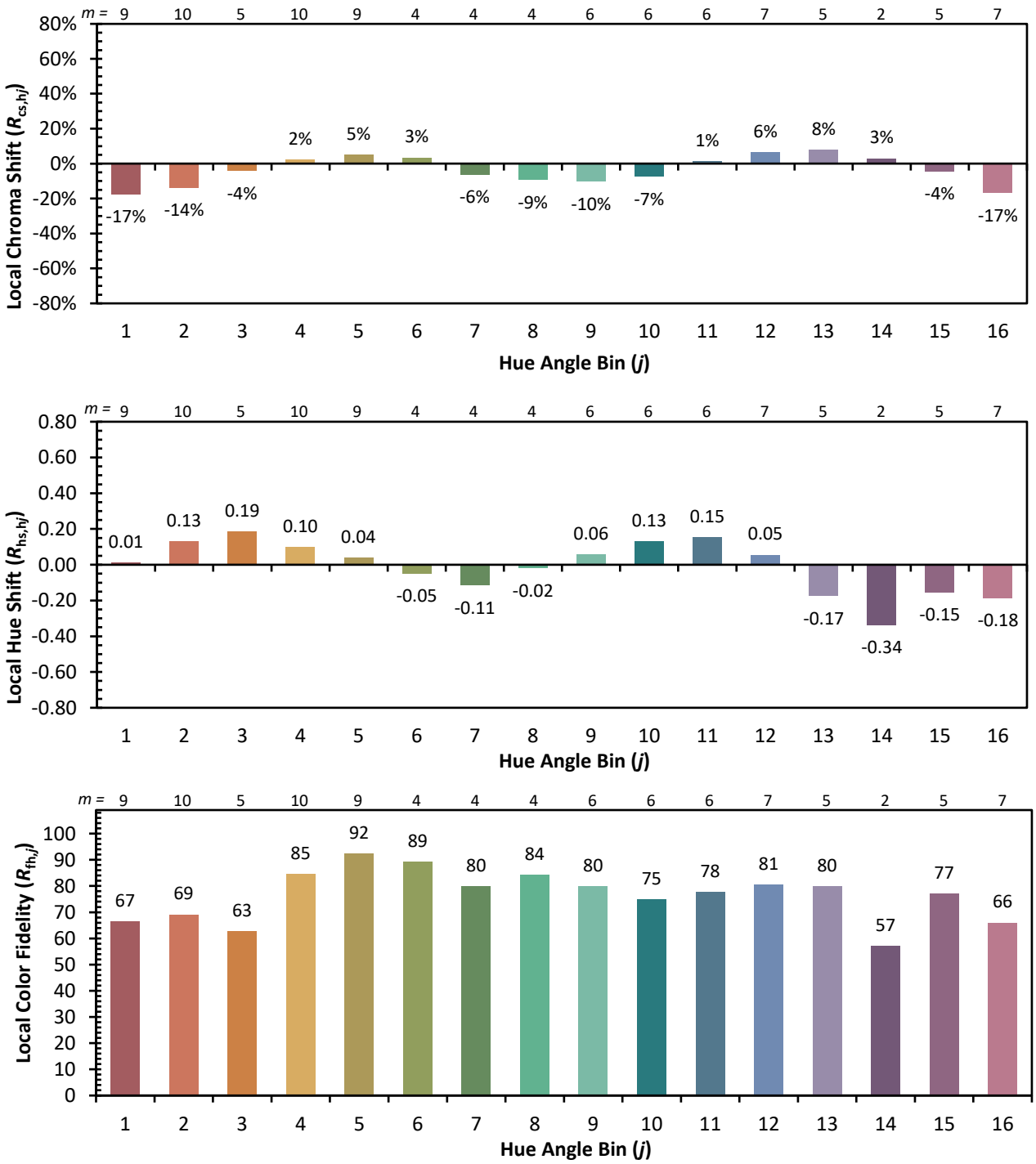



**Individual Sample Fidelity Index ($R_{f,i}$)**

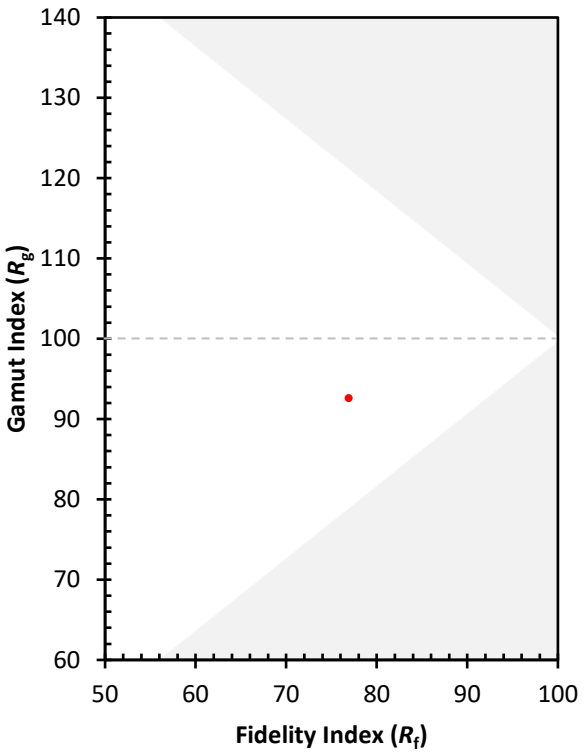
| | | | |
|---|---|---|---|
| CES01 = 87 | CES26 = 76 | CES51 = 88 | CES76 = 78 |
| CES02 = 65 | CES27 = 94 | CES52 = 84 | CES77 = 76 |
| CES03 = 32 | CES28 = 93 | CES53 = 79 | CES78 = 79 |
| CES04 = 72 | CES29 = 81 | CES54 = 86 | CES79 = 82 |
| CES05 = 51 | CES30 = 92 | CES55 = 83 | CES80 = 81 |
| CES06 = 52 | CES31 = 83 | CES56 = 76 | CES81 = 52 |
| CES07 = 44 | CES32 = 75 | CES57 = 74 | CES82 = 92 |
| CES08 = 42 | CES33 = 89 | CES58 = 76 | CES83 = 88 |
| CES09 = 29 | CES34 = 88 | CES59 = 84 | CES84 = 90 |
| CES10 = 79 | CES35 = 94 | CES60 = 91 | CES85 = 65 |
| CES11 = 62 | CES36 = 90 | CES61 = 81 | CES86 = 49 |
| CES12 = 68 | CES37 = 96 | CES62 = 91 | CES87 = 76 |
| CES13 = 44 | CES38 = 98 | CES63 = 86 | CES88 = 78 |
| CES14 = 75 | CES39 = 98 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 95 | CES65 = 71 | CES90 = 80 |
| CES16 = 48 | CES41 = 95 | CES66 = 70 | CES91 = 80 |
| CES17 = 51 | CES42 = 89 | CES67 = 69 | CES92 = 52 |
| CES18 = 57 | CES43 = 80 | CES68 = 73 | CES93 = 69 |
| CES19 = 74 | CES44 = 99 | CES69 = 84 | CES94 = 45 |
| CES20 = 68 | CES45 = 83 | CES70 = 71 | CES95 = 66 |
| CES21 = 88 | CES46 = 81 | CES71 = 74 | CES96 = 75 |
| CES22 = 81 | CES47 = 89 | CES72 = 89 | CES97 = 75 |
| CES23 = 92 | CES48 = 73 | CES73 = 67 | CES98 = 72 |
| CES24 = 92 | CES49 = 82 | CES74 = 85 | CES99 = 64 |
| CES25 = 73 | CES50 = 87 | CES75 = 79 | |

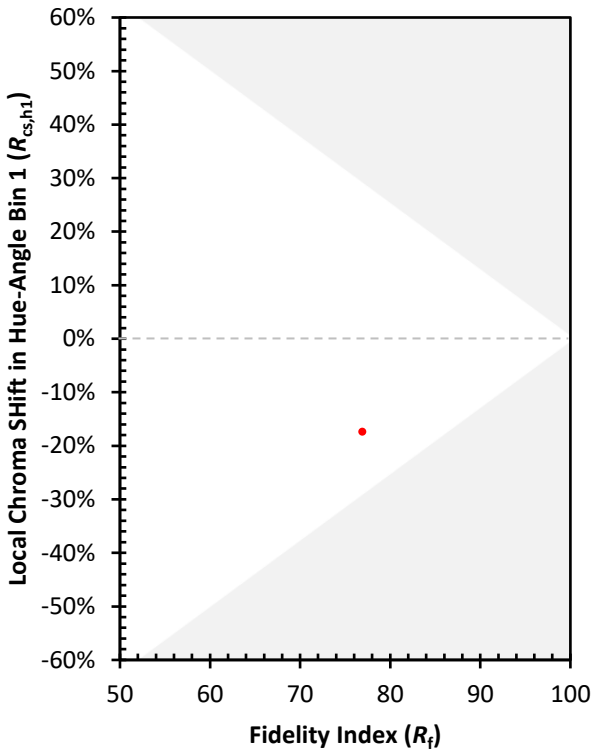


## Color Rendition by Hue-Angle Bin



## Measure Comparisons




(END OF REPORT)