

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: CORELITE

Report Number: P1217204

Luminaire Tested: 14-ID2-40-CNV-L850-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1217204  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2508-507-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 14-ID2-40-CNV-L850-U  
Description: 1X4 IN DEPTH TROFFER WITH 2INCH CURVE DROP LENS  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

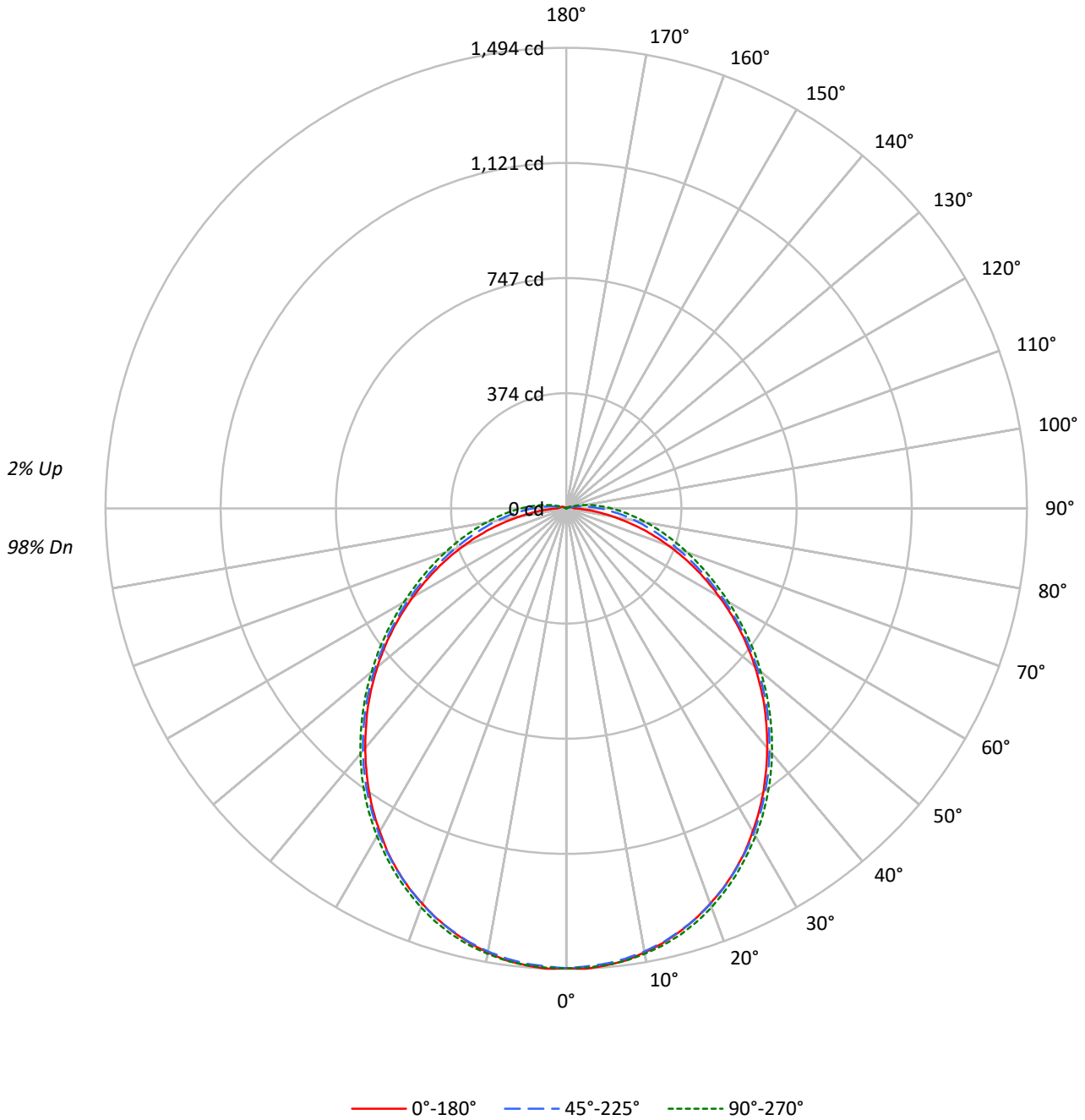
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4244.6 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.22 / 1.33  
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.16')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P1217204  
CATALOG NUMBER: 14-ID2-40-CNV-L850-U

### Luminous Intensity Polar Plot





TEST NUMBER: P1217204  
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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |     |    |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |     | 30  |     |     |     | 10  |     |     | 0  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 0   | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 105 | 105 | 105 | 100 | 100 | 100 | 100 | 100 | 98 |
| 1   | 107 | 102 | 98  | 94  | 104 | 100 | 96  | 92  | 95  | 92  | 88  | 91  | 88  | 85  | 87  | 84  | 82  | 82  | 82  | 80 |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  | 83  | 77  | 73  | 79  | 75  | 71  | 76  | 72  | 69  | 69  | 69  | 66 |
| 3   | 89  | 78  | 70  | 63  | 86  | 76  | 69  | 62  | 73  | 66  | 61  | 70  | 64  | 60  | 67  | 62  | 58  | 58  | 58  | 56 |
| 4   | 81  | 69  | 60  | 54  | 79  | 68  | 59  | 53  | 65  | 58  | 52  | 62  | 56  | 51  | 60  | 54  | 50  | 50  | 50  | 48 |
| 5   | 75  | 62  | 53  | 46  | 73  | 61  | 52  | 46  | 58  | 51  | 45  | 56  | 49  | 44  | 54  | 48  | 44  | 44  | 44  | 41 |
| 6   | 69  | 56  | 47  | 40  | 67  | 55  | 46  | 40  | 53  | 45  | 39  | 51  | 44  | 39  | 49  | 43  | 38  | 38  | 38  | 36 |
| 7   | 64  | 51  | 42  | 36  | 62  | 50  | 41  | 35  | 48  | 40  | 35  | 46  | 40  | 35  | 45  | 39  | 34  | 34  | 34  | 32 |
| 8   | 60  | 46  | 38  | 32  | 58  | 45  | 37  | 32  | 44  | 37  | 31  | 42  | 36  | 31  | 41  | 35  | 31  | 31  | 31  | 29 |
| 9   | 56  | 42  | 34  | 29  | 54  | 42  | 34  | 29  | 40  | 33  | 28  | 39  | 33  | 28  | 38  | 32  | 28  | 28  | 28  | 26 |
| 10  | 52  | 39  | 31  | 26  | 51  | 39  | 31  | 26  | 37  | 30  | 26  | 36  | 30  | 25  | 35  | 29  | 25  | 25  | 25  | 23 |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4013 | 4013 | 4013 |
| 5°  | 4005 | 3955 | 3962 |
| 10° | 3969 | 3891 | 3899 |
| 15° | 3918 | 3812 | 3824 |
| 20° | 3851 | 3720 | 3727 |
| 25° | 3775 | 3612 | 3614 |
| 30° | 3673 | 3493 | 3491 |
| 35° | 3566 | 3362 | 3360 |
| 40° | 3446 | 3220 | 3216 |
| 45° | 3329 | 3069 | 3060 |
| 50° | 3194 | 2904 | 2895 |
| 55° | 3050 | 2724 | 2731 |
| 60° | 2884 | 2545 | 2562 |
| 65° | 2708 | 2357 | 2409 |
| 70° | 2504 | 2179 | 2281 |
| 75° | 2266 | 2044 | 2183 |
| 80° | 1955 | 1945 | 2139 |
| 85° | 1708 | 1912 | 2188 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3329 cd/sqm



TEST NUMBER: P1217204  
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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 141.0  | 3.3       |
| 10°-20°   | 401.2  | 9.5       |
| 20°-30°   | 597.9  | 14.1      |
| 30°-40°   | 703.6  | 16.6      |
| 40°-50°   | 709.9  | 16.7      |
| 50°-60°   | 625.9  | 14.7      |
| 60°-70°   | 479.5  | 11.3      |
| 70°-80°   | 314.0  | 7.4       |
| 80°-90°   | 167.9  | 4.0       |
| 90°-100°  | 71.4   | 1.7       |
| 100°-110° | 22.8   | 0.5       |
| 110°-120° | 5.4    | 0.1       |
| 120°-130° | 2.4    | 0.1       |
| 130°-140° | 1.2    | 0.0       |
| 140°-150° | 0.4    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1140.2 | 26.9      |
| 0°-40°    | 1843.8 | 43.4      |
| 0°-60°    | 3179.6 | 74.9      |
| 0°-90°    | 4141.0 | 97.6      |
| 90°-120°  | 99.5   | 2.3       |
| 90°-150°  | 103.6  | 2.4       |
| 90°-180°  | 104.0  | 2.5       |
| 0°-180°   | 4244.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1491 | 1491  | 1491 | 1491  | 1491 |      |
| 5°   | 1488 | 1486  | 1482 | 1483  | 1487 | 141  |
| 15°  | 1421 | 1420  | 1420 | 1426  | 1431 | 401  |
| 25°  | 1295 | 1293  | 1297 | 1303  | 1308 | 596  |
| 35°  | 1116 | 1116  | 1125 | 1134  | 1137 | 698  |
| 45°  | 910  | 910   | 920  | 931   | 933  | 701  |
| 55°  | 687  | 687   | 698  | 712   | 715  | 614  |
| 65°  | 462  | 464   | 482  | 500   | 508  | 458  |
| 75°  | 250  | 260   | 300  | 328   | 335  | 266  |
| 85°  | 81   | 111   | 162  | 193   | 200  | 82   |
| 90°  | 28   | 63    | 109  | 138   | 146  | 18   |
| 95°  | 24   | 32    | 67   | 93    | 101  | 18   |
| 105° | 16   | 13    | 14   | 28    | 34   | 17   |
| 115° | 11   | 9     | 4    | 0     | 0    | 11   |
| 125° | 6    | 5     | 2    | 0     | 0    | 6    |
| 135° | 4    | 3     | 1    | 0     | 0    | 3    |
| 145° | 2    | 1     | 0    | 0     | 0    | 1    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    | 0    |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1491.4 | 1491.4 | 1491.4 | 1491.4 | 1491.4 |
| 2.5°   | 1494.2 | 1492.1 | 1487.1 | 1488.5 | 1490.7 |
| 5°     | 1487.8 | 1485.7 | 1482.1 | 1482.8 | 1487.1 |
| 7.5°   | 1478.5 | 1475.7 | 1472.8 | 1475.0 | 1480.0 |
| 10°    | 1462.8 | 1461.4 | 1459.3 | 1462.1 | 1467.1 |
| 12.5°  | 1444.3 | 1442.9 | 1442.1 | 1445.7 | 1451.4 |
| 15°    | 1421.4 | 1420.0 | 1420.0 | 1425.7 | 1431.4 |
| 17.5°  | 1395.0 | 1394.3 | 1395.8 | 1402.2 | 1406.5 |
| 20°    | 1364.4 | 1363.6 | 1365.8 | 1372.2 | 1377.2 |
| 22.5°  | 1332.3 | 1330.8 | 1333.0 | 1338.7 | 1343.7 |
| 25°    | 1295.1 | 1293.0 | 1296.6 | 1303.0 | 1308.0 |
| 27.5°  | 1255.2 | 1251.6 | 1257.3 | 1264.5 | 1268.7 |
| 30°    | 1209.5 | 1210.2 | 1215.9 | 1223.1 | 1227.4 |
| 32.5°  | 1164.6 | 1163.8 | 1171.0 | 1179.5 | 1183.8 |
| 35°    | 1116.0 | 1116.0 | 1124.6 | 1133.9 | 1137.4 |
| 37.5°  | 1065.4 | 1067.5 | 1076.1 | 1084.6 | 1088.9 |
| 40°    | 1014.0 | 1016.9 | 1025.4 | 1034.7 | 1038.3 |
| 42.5°  | 961.2  | 964.0  | 973.3  | 983.3  | 986.2  |
| 45°    | 909.8  | 910.5  | 920.5  | 931.2  | 932.6  |
| 47.5°  | 854.2  | 854.9  | 865.6  | 876.3  | 878.4  |
| 50°    | 799.2  | 799.9  | 810.6  | 822.0  | 823.5  |
| 52.5°  | 743.5  | 744.3  | 753.5  | 767.1  | 770.0  |
| 55°    | 687.2  | 687.2  | 697.9  | 712.2  | 715.0  |
| 57.5°  | 630.8  | 630.8  | 642.2  | 657.2  | 660.8  |
| 60°    | 573.0  | 574.4  | 588.7  | 603.0  | 608.0  |
| 62.5°  | 517.3  | 518.8  | 534.5  | 549.5  | 555.9  |
| 65°    | 461.7  | 463.8  | 482.4  | 500.2  | 508.1  |
| 67.5°  | 407.5  | 410.3  | 431.7  | 454.5  | 461.7  |
| 70°    | 353.2  | 358.9  | 384.6  | 409.6  | 417.4  |
| 72.5°  | 301.1  | 307.6  | 341.8  | 368.2  | 375.3  |
| 75°    | 250.5  | 260.5  | 300.4  | 327.5  | 335.4  |
| 77.5°  | 201.2  | 216.2  | 261.9  | 291.1  | 298.3  |
| 80°    | 154.8  | 177.0  | 226.2  | 255.5  | 263.3  |
| 82.5°  | 115.6  | 140.6  | 193.4  | 223.4  | 230.5  |
| 85°    | 80.6   | 110.6  | 162.0  | 192.7  | 200.5  |
| 87.5°  | 52.1   | 84.9   | 134.2  | 164.1  | 172.7  |
| 90°    | 28.5   | 62.8   | 109.2  | 137.7  | 146.3  |
| 92.5°  | 25.7   | 45.7   | 87.1   | 114.2  | 122.7  |
| 95°    | 23.5   | 32.1   | 67.1   | 92.8   | 101.3  |
| 97.5°  | 21.4   | 21.4   | 50.0   | 73.5   | 81.3   |
| 100°   | 20.0   | 15.7   | 35.7   | 56.4   | 64.2   |
| 102.5° | 17.8   | 14.3   | 23.5   | 41.4   | 48.5   |
| 105°   | 16.4   | 12.8   | 14.3   | 28.5   | 34.3   |
| 107.5° | 15.0   | 11.4   | 7.1    | 17.8   | 22.8   |
| 110°   | 13.6   | 10.7   | 5.7    | 8.6    | 13.6   |



TEST NUMBER: P1217204  
 CATALOG NUMBER: 14-ID2-40-CNV-L850-U

**CANDELA DISTRIBUTION (continued):**

|        | 0°   | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|-----|-------|-----|
| 112.5° | 12.1 | 9.3   | 5.0 | 2.1   | 5.0 |
| 115°   | 10.7 | 8.6   | 4.3 | 0.0   | 0.0 |
| 117.5° | 9.3  | 7.8   | 3.6 | 0.0   | 0.0 |
| 120°   | 8.6  | 6.4   | 3.6 | 0.0   | 0.0 |
| 122.5° | 7.8  | 5.7   | 2.9 | 0.0   | 0.0 |
| 125°   | 6.4  | 5.0   | 2.1 | 0.0   | 0.0 |
| 127.5° | 5.7  | 4.3   | 2.1 | 0.0   | 0.0 |
| 130°   | 5.0  | 4.3   | 1.4 | 0.0   | 0.0 |
| 132.5° | 4.3  | 3.6   | 1.4 | 0.0   | 0.0 |
| 135°   | 3.6  | 2.9   | 1.4 | 0.0   | 0.0 |
| 137.5° | 3.6  | 2.9   | 0.7 | 0.0   | 0.0 |
| 140°   | 2.9  | 2.1   | 0.7 | 0.0   | 0.0 |
| 142.5° | 2.1  | 1.4   | 0.7 | 0.0   | 0.0 |
| 145°   | 2.1  | 1.4   | 0.0 | 0.0   | 0.0 |
| 147.5° | 1.4  | 1.4   | 0.0 | 0.0   | 0.0 |
| 150°   | 1.4  | 0.7   | 0.0 | 0.0   | 0.0 |
| 152.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 155°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 157.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 160°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 162.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 165°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 167.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 170°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 172.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 175°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 177.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 180°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |

TEST NUMBER: P1217204

CATALOG NUMBER: 14-ID2-40-CNV-L850-U

**CIE UGR TABLE:**

| Reflectances:   |                 |                  |       |       |       |       |                |       |       |       |       |
|-----------------|-----------------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
|                 | Ceiling         | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
|                 | Wall            | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
|                 | Reference plane | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |                 | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H            | 14.89            | 16.48 | 15.30 | 16.85 | 17.23 | 15.54          | 17.13 | 15.94 | 17.49 | 17.87 |
|                 | 3H              | 16.49            | 17.94 | 16.91 | 18.31 | 18.73 | 17.51          | 18.96 | 17.93 | 19.33 | 19.75 |
|                 | 4H              | 17.06            | 18.43 | 17.50 | 18.82 | 19.26 | 18.41          | 19.77 | 18.84 | 20.17 | 20.60 |
|                 | 6H              | 17.46            | 18.73 | 17.91 | 19.14 | 19.59 | 19.28          | 20.55 | 19.73 | 20.96 | 21.41 |
|                 | 8H              | 17.58            | 18.79 | 18.04 | 19.23 | 19.69 | 19.70          | 20.92 | 20.16 | 21.35 | 21.81 |
|                 | 12H             | 17.66            | 18.82 | 18.13 | 19.25 | 19.74 | 20.14          | 21.31 | 20.61 | 21.74 | 22.22 |
| 4H              | 2H              | 15.53            | 16.90 | 15.97 | 17.30 | 17.73 | 16.05          | 17.41 | 16.48 | 17.81 | 18.25 |
|                 | 3H              | 17.36            | 18.51 | 17.80 | 18.95 | 19.41 | 18.25          | 19.41 | 18.70 | 19.85 | 20.31 |
|                 | 4H              | 18.05            | 19.10 | 18.52 | 19.56 | 20.05 | 19.31          | 20.36 | 19.78 | 20.82 | 21.31 |
|                 | 6H              | 18.57            | 19.49 | 19.06 | 19.98 | 20.49 | 20.36          | 21.29 | 20.85 | 21.77 | 22.28 |
|                 | 8H              | 18.74            | 19.61 | 19.24 | 20.09 | 20.61 | 20.88          | 21.74 | 21.37 | 22.23 | 22.75 |
|                 | 12H             | 18.87            | 19.65 | 19.38 | 20.17 | 20.69 | 21.42          | 22.21 | 21.94 | 22.73 | 23.25 |
| 8H              | 4H              | 18.47            | 19.34 | 18.97 | 19.83 | 20.35 | 19.58          | 20.45 | 20.08 | 20.94 | 21.46 |
|                 | 6H              | 19.14            | 19.87 | 19.67 | 20.41 | 20.93 | 20.80          | 21.53 | 21.33 | 22.06 | 22.59 |
|                 | 8H              | 19.40            | 20.06 | 19.94 | 20.60 | 21.14 | 21.45          | 22.11 | 21.99 | 22.65 | 23.19 |
|                 | 12H             | 19.61            | 20.19 | 20.15 | 20.73 | 21.34 | 22.16          | 22.75 | 22.70 | 23.28 | 23.89 |
| 12H             | 4H              | 18.57            | 19.35 | 19.08 | 19.87 | 20.39 | 19.60          | 20.39 | 20.12 | 20.91 | 21.43 |
|                 | 6H              | 19.30            | 19.96 | 19.84 | 20.50 | 21.04 | 20.86          | 21.52 | 21.40 | 22.07 | 22.61 |
|                 | 8H              | 19.63            | 20.22 | 20.18 | 20.75 | 21.36 | 21.58          | 22.17 | 22.12 | 22.70 | 23.31 |



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



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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-7

Test Date: 08/26/2025

Luminaire Tested: 22ID2-55-CFR1-L850-U

Data in this report applies to families of products including 22ID2-55-CFR1-L850-U

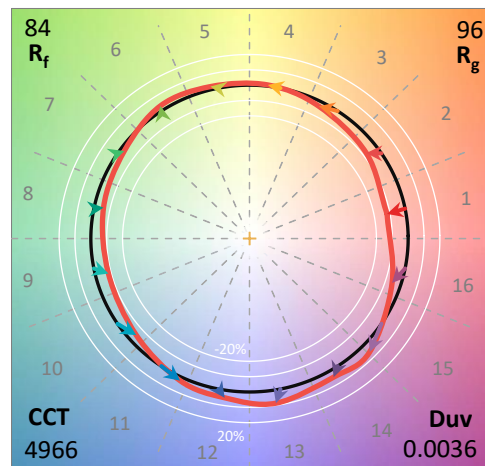
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 08/27/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Corelite  
 Catalog Number: **22ID2-55-CFR1-L850-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 5000K 80CRI

**Spectral Parameters**

CCT (K): 4966  
 CIE u': 0.2093  
 CIE v': 0.4890  
 Duv: 0.0036  
 CIE x: 0.3468  
 CIE y: 0.3601  
 CIE z: 0.2931  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 570  
 Purity: 12.1135  
 Rf: 84  
 Rg: 96.2

|           |      |      |      |
|-----------|------|------|------|
| CRI (Ra): | 83.1 |      |      |
| R1:       | 81.0 | R9:  | 10.3 |
| R2:       | 87.8 | R10: | 70.9 |
| R3:       | 92.7 | R11: | 81.3 |
| R4:       | 82.4 | R12: | 55.9 |
| R5:       | 81.0 | R13: | 82.8 |
| R6:       | 82.6 | R14: | 96.1 |
| R7:       | 88.5 | R15: | 75.1 |
| R8:       | 68.6 |      |      |



**Test Conditions**

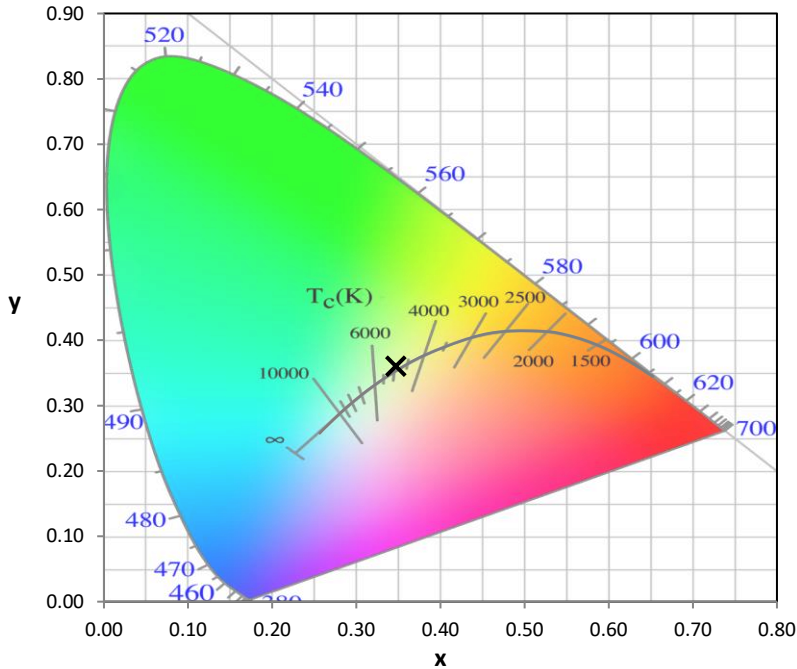
Stabilization Time: 37M  
 Operation Time: 1H 37M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2506-458-7

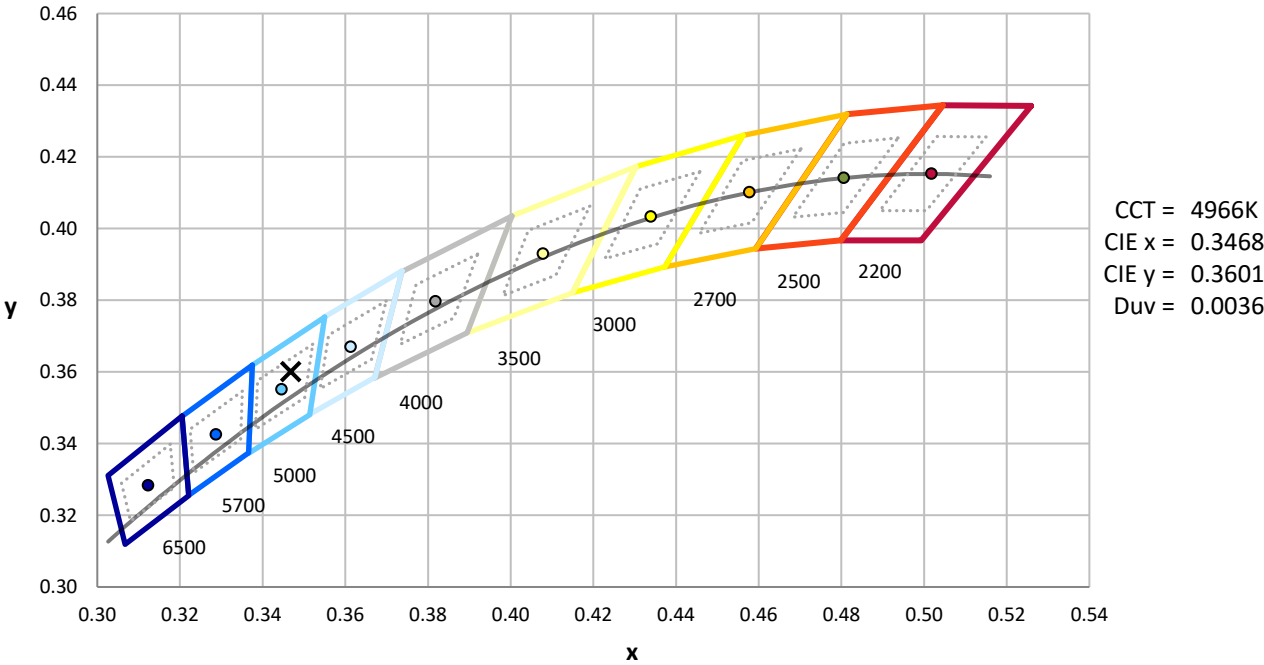
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 6/16/2025        | 12/16/2025           |
| Power Meter                    | XITRON INXT2011004    | 1/21/2025        | 1/21/2026            |
| AC Power Source                | CHROMA 61603 IN0063   | 10/22/2024       | 10/22/2025           |
| DC Power Source                | AGILENT E3634A IN0208 | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | ONSET IN0085          | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | ONSET IN0046          | 10/22/2024       | 10/22/2025           |

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CIE 1931 Chromaticity Diagram



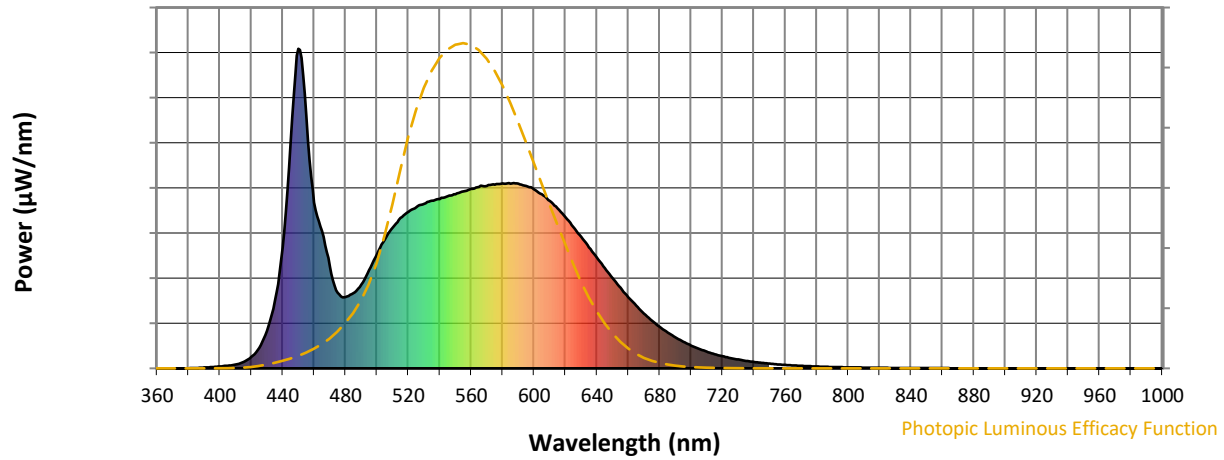
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**

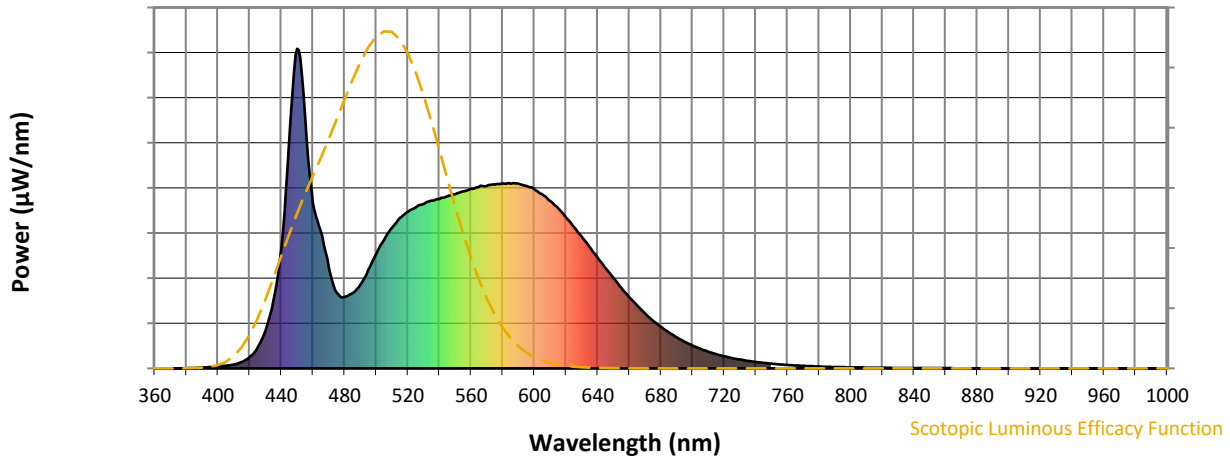


**Photopic Lumens: NR**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 262                      | NR            | 620    | 472                      | NR            | 750    | 15                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 307                      | NR            | 625    | 443                      | NR            | 755    | 13                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 358                      | NR            | 630    | 412                      | NR            | 760    | 11                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 403                      | NR            | 635    | 379                      | NR            | 765    | 9                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 440                      | NR            | 640    | 346                      | NR            | 770    | 8                        | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 471                      | NR            | 645    | 313                      | NR            | 775    | 7                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 490                      | NR            | 650    | 282                      | NR            | 780    | 6                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 504                      | NR            | 655    | 252                      | NR            | 785    | 5                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 515                      | NR            | 660    | 223                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 9                        | NR            | 535    | 524                      | NR            | 665    | 197                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 530                      | NR            | 670    | 171                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 20                       | NR            | 545    | 539                      | NR            | 675    | 149                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 545                      | NR            | 680    | 130                      | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 64                       | NR            | 555    | 554                      | NR            | 685    | 112                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 117                      | NR            | 560    | 562                      | NR            | 690    | 97                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 212                      | NR            | 565    | 567                      | NR            | 695    | 83                       | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 378                      | NR            | 570    | 571                      | NR            | 700    | 71                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 709                      | NR            | 575    | 574                      | NR            | 705    | 61                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 579                      | NR            | 710    | 52                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 789                      | NR            | 585    | 578                      | NR            | 715    | 44                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 519                      | NR            | 590    | 578                      | NR            | 720    | 38                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 429                      | NR            | 595    | 571                      | NR            | 725    | 32                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 316                      | NR            | 600    | 560                      | NR            | 730    | 28                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 236                      | NR            | 605    | 545                      | NR            | 735    | 24                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 224                      | NR            | 610    | 524                      | NR            | 740    | 20                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 235                      | NR            | 615    | 501                      | NR            | 745    | 17                       | NR            | 875    | 0                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



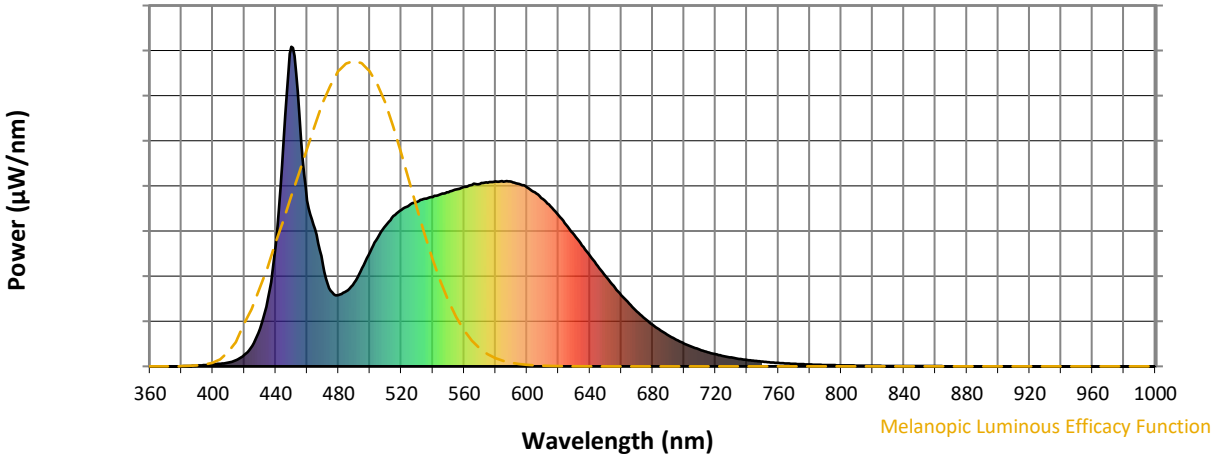
**Scotopic Lumens: NR**

**S/P: 1.94**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 262                      | NR            | 620    | 472                      | NR            | 750    | 15                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 307                      | NR            | 625    | 443                      | NR            | 755    | 13                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 358                      | NR            | 630    | 412                      | NR            | 760    | 11                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 403                      | NR            | 635    | 379                      | NR            | 765    | 9                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 440                      | NR            | 640    | 346                      | NR            | 770    | 8                        | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 471                      | NR            | 645    | 313                      | NR            | 775    | 7                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 490                      | NR            | 650    | 282                      | NR            | 780    | 6                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 504                      | NR            | 655    | 252                      | NR            | 785    | 5                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 515                      | NR            | 660    | 223                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 9                        | NR            | 535    | 524                      | NR            | 665    | 197                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 530                      | NR            | 670    | 171                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 20                       | NR            | 545    | 539                      | NR            | 675    | 149                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 545                      | NR            | 680    | 130                      | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 64                       | NR            | 555    | 554                      | NR            | 685    | 112                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 117                      | NR            | 560    | 562                      | NR            | 690    | 97                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 212                      | NR            | 565    | 567                      | NR            | 695    | 83                       | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 378                      | NR            | 570    | 571                      | NR            | 700    | 71                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 709                      | NR            | 575    | 574                      | NR            | 705    | 61                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 579                      | NR            | 710    | 52                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 789                      | NR            | 585    | 578                      | NR            | 715    | 44                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 519                      | NR            | 590    | 578                      | NR            | 720    | 38                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 429                      | NR            | 595    | 571                      | NR            | 725    | 32                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 316                      | NR            | 600    | 560                      | NR            | 730    | 28                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 236                      | NR            | 605    | 545                      | NR            | 735    | 24                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 224                      | NR            | 610    | 524                      | NR            | 740    | 20                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 235                      | NR            | 615    | 501                      | NR            | 745    | 17                       | NR            | 875    | 0                        | NR            |        |                          |               |

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Melanopic Flux vs. Wavelength



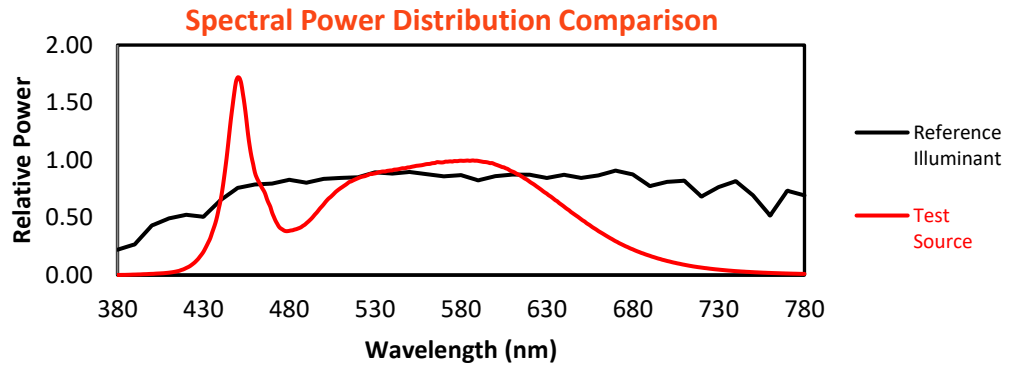
Melanopic Lumens: NR

M/P: 4.11

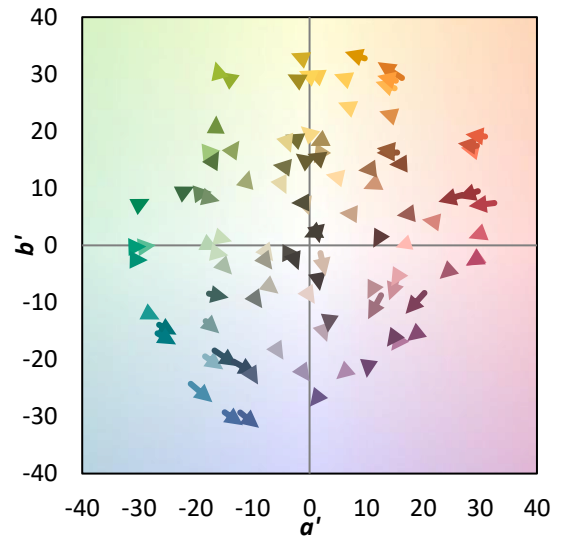
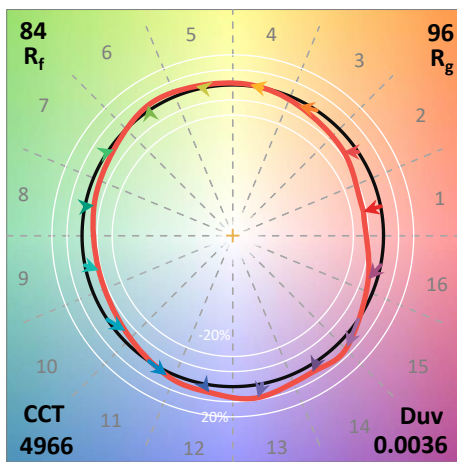
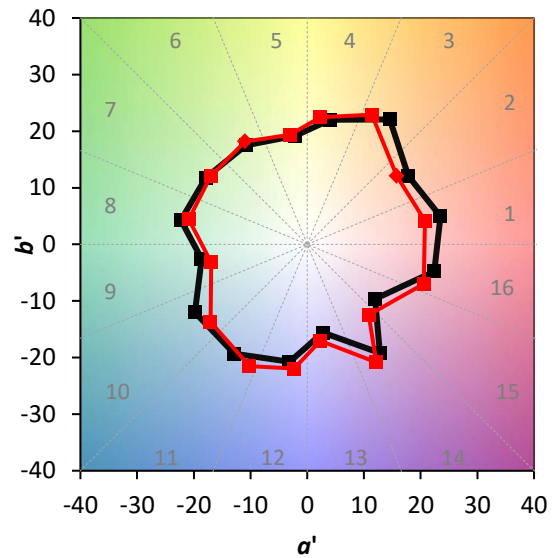
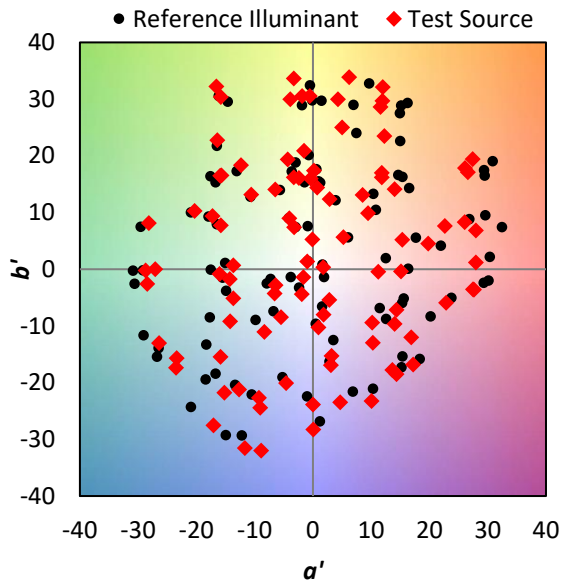
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 262                      | NR            | 620    | 472                      | NR            | 750    | 15                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 307                      | NR            | 625    | 443                      | NR            | 755    | 13                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 358                      | NR            | 630    | 412                      | NR            | 760    | 11                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 403                      | NR            | 635    | 379                      | NR            | 765    | 9                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 440                      | NR            | 640    | 346                      | NR            | 770    | 8                        | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 471                      | NR            | 645    | 313                      | NR            | 775    | 7                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 490                      | NR            | 650    | 282                      | NR            | 780    | 6                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 504                      | NR            | 655    | 252                      | NR            | 785    | 5                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 515                      | NR            | 660    | 223                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 9                        | NR            | 535    | 524                      | NR            | 665    | 197                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 530                      | NR            | 670    | 171                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 20                       | NR            | 545    | 539                      | NR            | 675    | 149                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 545                      | NR            | 680    | 130                      | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 64                       | NR            | 555    | 554                      | NR            | 685    | 112                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 117                      | NR            | 560    | 562                      | NR            | 690    | 97                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 212                      | NR            | 565    | 567                      | NR            | 695    | 83                       | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 378                      | NR            | 570    | 571                      | NR            | 700    | 71                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 709                      | NR            | 575    | 574                      | NR            | 705    | 61                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 579                      | NR            | 710    | 52                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 789                      | NR            | 585    | 578                      | NR            | 715    | 44                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 519                      | NR            | 590    | 578                      | NR            | 720    | 38                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 429                      | NR            | 595    | 571                      | NR            | 725    | 32                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 316                      | NR            | 600    | 560                      | NR            | 730    | 28                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 236                      | NR            | 605    | 545                      | NR            | 735    | 24                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 224                      | NR            | 610    | 524                      | NR            | 740    | 20                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 235                      | NR            | 615    | 501                      | NR            | 745    | 17                       | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 84$   
 $R_g = 96.2$   
 CIE  $R_a = 83.1$   
 $R_9 = 10.3$



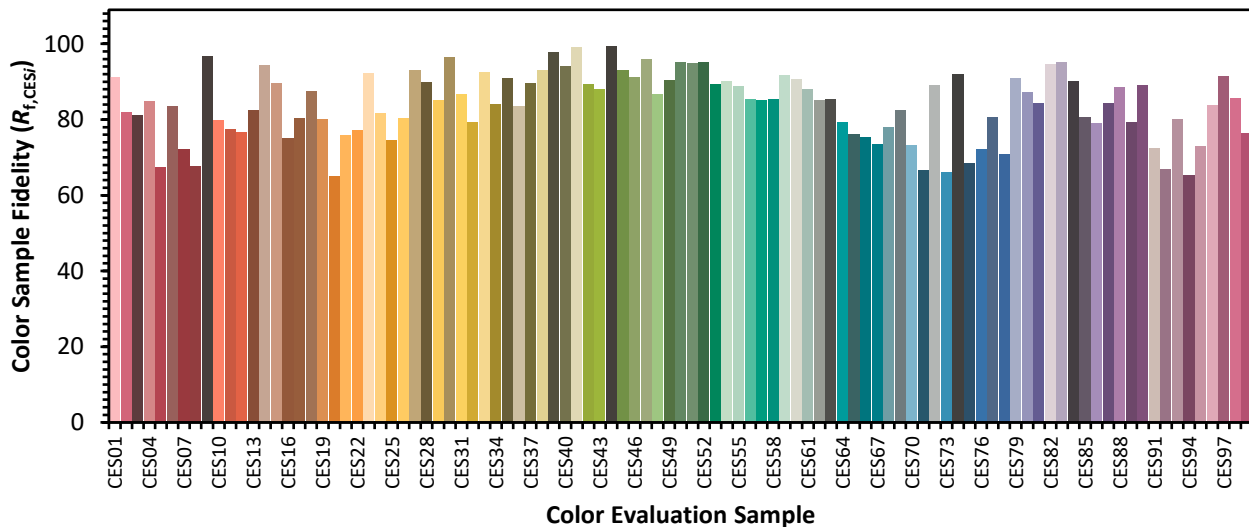
**Color Vector Graphics**



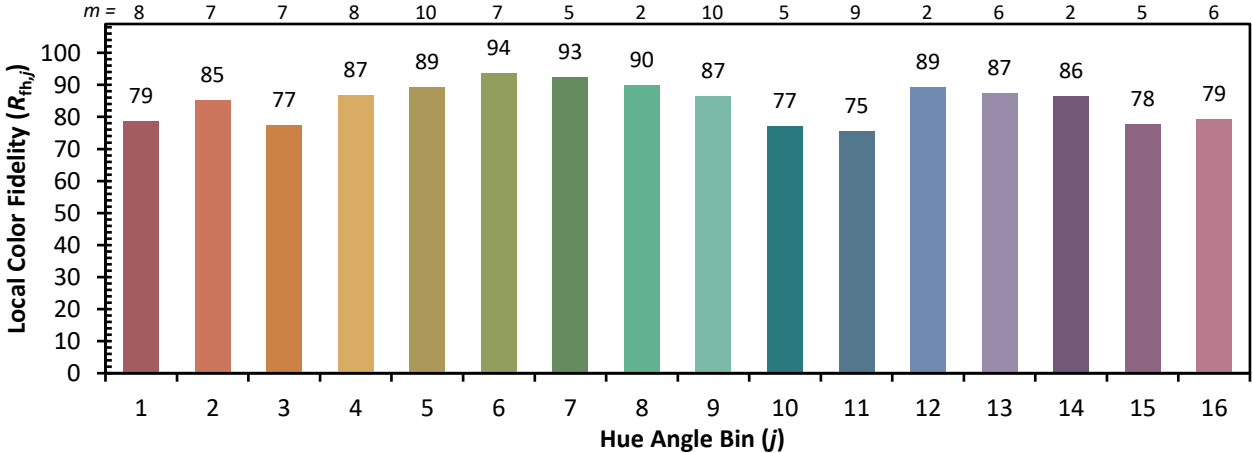
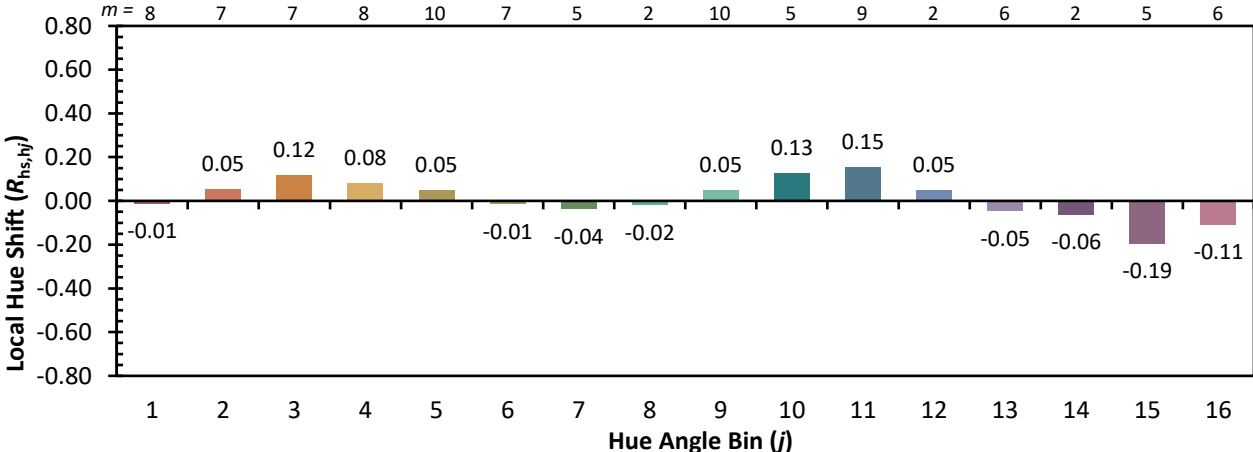
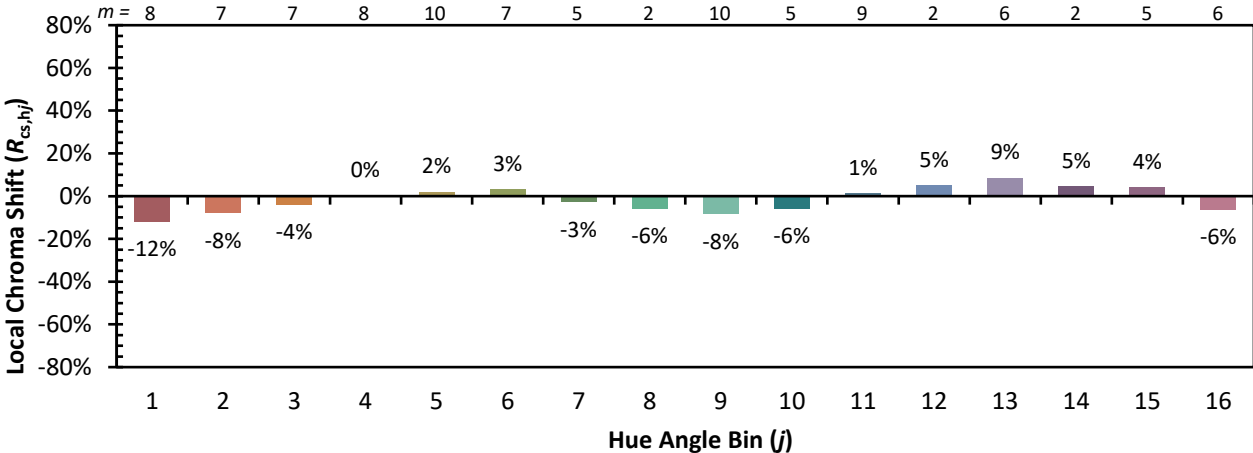


Individual Sample Fidelity Index ( $R_{f,i}$ )

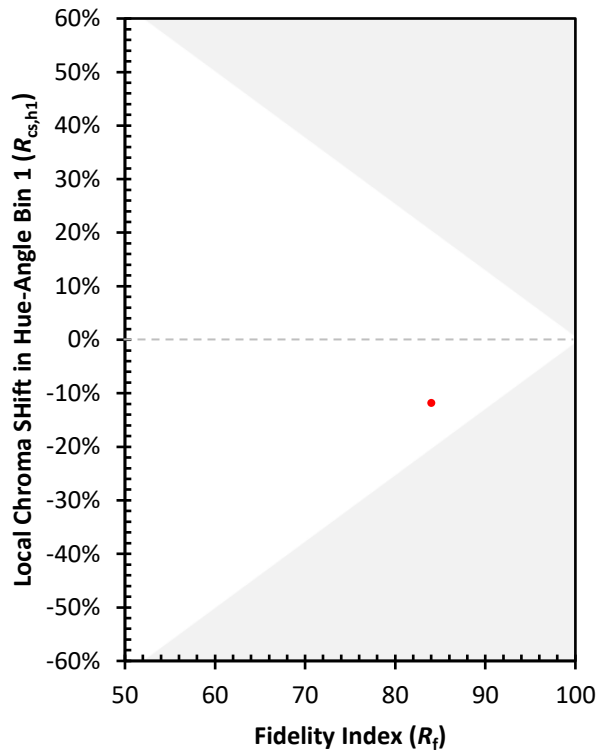
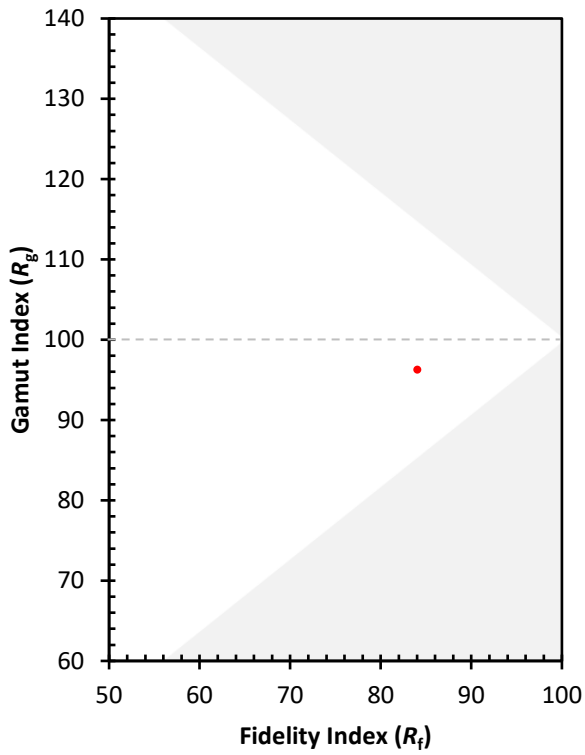
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 80 | CES51 = 95 | CES76 = 72 |
| CES02 = 60 | CES27 = 93 | CES52 = 95 | CES77 = 81 |
| CES03 = 30 | CES28 = 90 | CES53 = 89 | CES78 = 71 |
| CES04 = 69 | CES29 = 85 | CES54 = 90 | CES79 = 91 |
| CES05 = 47 | CES30 = 97 | CES55 = 89 | CES80 = 87 |
| CES06 = 50 | CES31 = 87 | CES56 = 86 | CES81 = 84 |
| CES07 = 40 | CES32 = 79 | CES57 = 85 | CES82 = 95 |
| CES08 = 39 | CES33 = 92 | CES58 = 85 | CES83 = 95 |
| CES09 = 29 | CES34 = 84 | CES59 = 92 | CES84 = 90 |
| CES10 = 73 | CES35 = 91 | CES60 = 91 | CES85 = 81 |
| CES11 = 56 | CES36 = 83 | CES61 = 88 | CES86 = 79 |
| CES12 = 62 | CES37 = 90 | CES62 = 85 | CES87 = 84 |
| CES13 = 42 | CES38 = 93 | CES63 = 85 | CES88 = 89 |
| CES14 = 74 | CES39 = 98 | CES64 = 79 | CES89 = 79 |
| CES15 = 71 | CES40 = 94 | CES65 = 76 | CES90 = 89 |
| CES16 = 46 | CES41 = 99 | CES66 = 75 | CES91 = 72 |
| CES17 = 48 | CES42 = 89 | CES67 = 73 | CES92 = 67 |
| CES18 = 55 | CES43 = 88 | CES68 = 78 | CES93 = 80 |
| CES19 = 70 | CES44 = 99 | CES69 = 82 | CES94 = 65 |
| CES20 = 64 | CES45 = 93 | CES70 = 73 | CES95 = 73 |
| CES21 = 85 | CES46 = 91 | CES71 = 67 | CES96 = 84 |
| CES22 = 77 | CES47 = 96 | CES72 = 89 | CES97 = 92 |
| CES23 = 91 | CES48 = 87 | CES73 = 66 | CES98 = 86 |
| CES24 = 90 | CES49 = 90 | CES74 = 92 | CES99 = 77 |
| CES25 = 71 | CES50 = 95 | CES75 = 68 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)