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

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: P1217237

Luminaire Tested: 14-ID2-60-CNV-L930-U

Issue Date: 12/5/2025

Report Generated By 670265710 / DESKTOP-98SHLC4

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P1217237 |
| | 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-ID2-60-CNV-L930-U |
| Description: | 1X4 IN DEPTH TROFFER WITH 2INCH CURVE DROP LENS |
| Light Source: | 3000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4959.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 92.9 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): | 53.4 |
| 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 |

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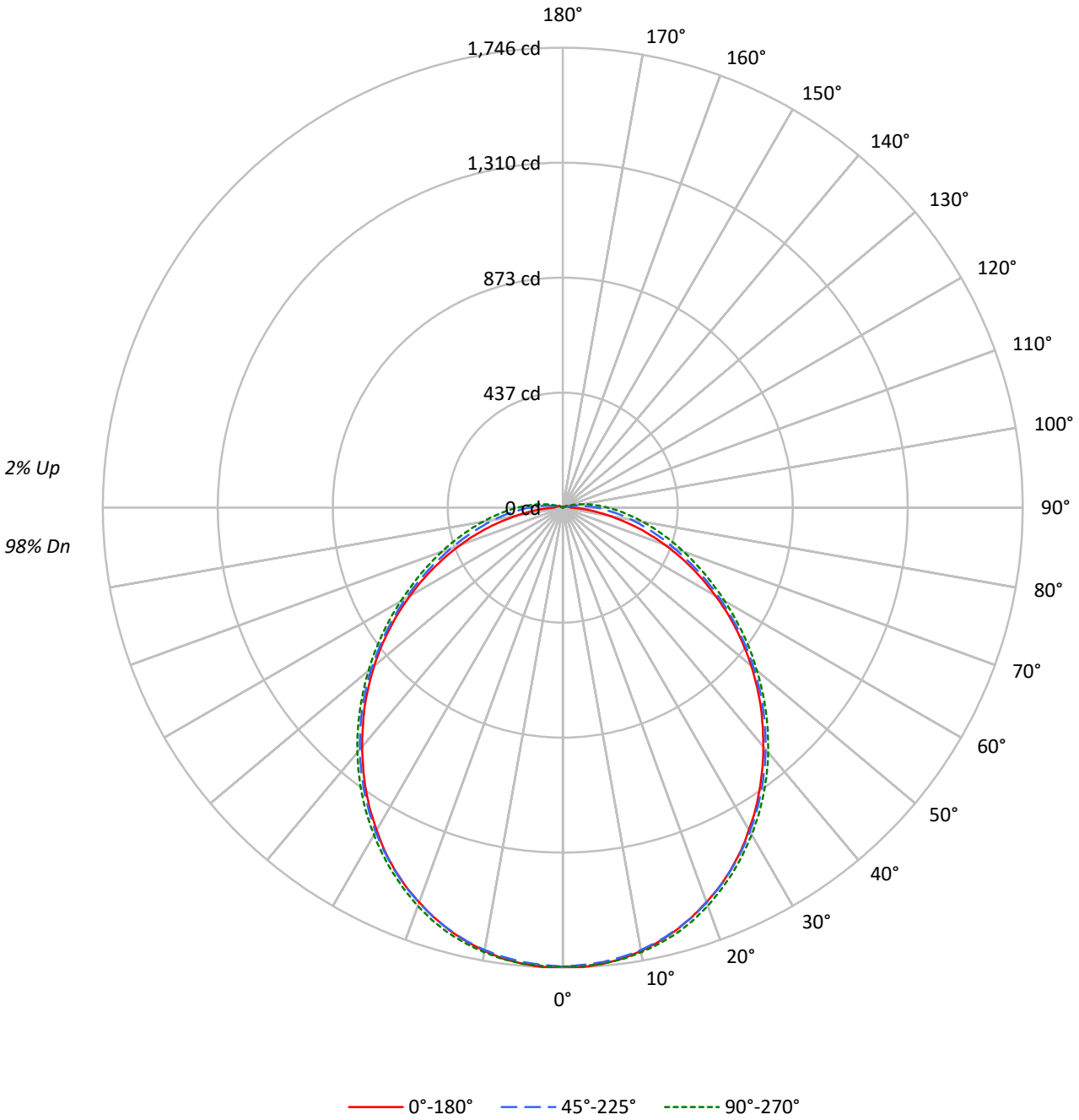
Scaled Data Report

TEST NUMBER: P1217237
CATALOG NUMBER: 14-ID2-60-CNV-L930-U

## Luminous Intensity Polar Plot



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TEST NUMBER: P1217237
CATALOG NUMBER: 14-ID2-60-CNV-L930-U

## COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 4689 | 4689 | 4689 |
| 5° | 4679 | 4620 | 4629 |
| 10° | 4637 | 4546 | 4555 |
| 15° | 4578 | 4453 | 4468 |
| 20° | 4499 | 4346 | 4354 |
| 25° | 4411 | 4220 | 4222 |
| 30° | 4292 | 4081 | 4079 |
| 35° | 4167 | 3927 | 3926 |
| 40° | 4026 | 3762 | 3757 |
| 45° | 3890 | 3586 | 3575 |
| 50° | 3731 | 3393 | 3383 |
| 55° | 3563 | 3183 | 3190 |
| 60° | 3370 | 2973 | 2993 |
| 65° | 3163 | 2754 | 2814 |
| 70° | 2926 | 2546 | 2665 |
| 75° | 2647 | 2389 | 2551 |
| 80° | 2285 | 2273 | 2499 |
| 85° | 1996 | 2234 | 2557 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3890 cd/sqm

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Scaled Data Report

TEST NUMBER: P1217237
CATALOG NUMBER: 14-ID2-60-CNV-L930-U

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 164.7 | 3.3 |
| 10°-20° | 468.8 | 9.5 |
| 20°-30° | 698.6 | 14.1 |
| 30°-40° | 822.1 | 16.6 |
| 40°-50° | 829.5 | 16.7 |
| 50°-60° | 731.3 | 14.7 |
| 60°-70° | 560.2 | 11.3 |
| 70°-80° | 366.9 | 7.4 |
| 80°-90° | 196.2 | 4.0 |
| 90°-100° | 83.4 | 1.7 |
| 100°-110° | 26.6 | 0.5 |
| 110°-120° | 6.2 | 0.1 |
| 120°-130° | 2.9 | 0.1 |
| 130°-140° | 1.4 | 0.0 |
| 140°-150° | 0.5 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 1332.2 | 26.9 |
| 0°-40° | 2154.2 | 43.4 |
| 0°-60° | 3715.0 | 74.9 |
| 0°-90° | 4838.3 | 97.6 |
| 90°-120° | 116.2 | 2.3 |
| 90°-150° | 121.0 | 2.4 |
| 90°-180° | 121.0 | 2.4 |
| 0°-180° | 4959.3 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1742 | 1742 | 1742 | 1742 | 1742 | |
| 5° | 1738 | 1736 | 1732 | 1732 | 1738 | 165 |
| 15° | 1661 | 1659 | 1659 | 1666 | 1672 | 468 |
| 25° | 1513 | 1511 | 1515 | 1522 | 1528 | 696 |
| 35° | 1304 | 1304 | 1314 | 1325 | 1329 | 815 |
| 45° | 1063 | 1064 | 1076 | 1088 | 1090 | 819 |
| 55° | 803 | 803 | 815 | 832 | 835 | 718 |
| 65° | 539 | 542 | 564 | 584 | 594 | 535 |
| 75° | 293 | 304 | 351 | 383 | 392 | 310 |
| 85° | 94 | 129 | 189 | 225 | 234 | 95 |
| 90° | 33 | 73 | 128 | 161 | 171 | 22 |
| 95° | 28 | 38 | 78 | 108 | 118 | 22 |
| 105° | 19 | 15 | 17 | 33 | 40 | 20 |
| 115° | 12 | 10 | 5 | 0 | 0 | 13 |
| 125° | 8 | 6 | 2 | 0 | 0 | 7 |
| 135° | 4 | 3 | 2 | 0 | 0 | 3 |
| 145° | 2 | 2 | 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 | |

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TEST NUMBER: P1217237
CATALOG NUMBER: 14-ID2-60-CNV-L930-U

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 1742.5 | 1742.5 | 1742.5 | 1742.5 | 1742.5 |
| 2.5° | 1745.8 | 1743.3 | 1737.5 | 1739.1 | 1741.6 |
| 5° | 1738.3 | 1735.8 | 1731.6 | 1732.5 | 1737.5 |
| 7.5° | 1727.5 | 1724.1 | 1720.8 | 1723.3 | 1729.1 |
| 10° | 1709.1 | 1707.5 | 1705.0 | 1708.3 | 1714.1 |
| 12.5° | 1687.5 | 1685.8 | 1685.0 | 1689.1 | 1695.8 |
| 15° | 1660.8 | 1659.1 | 1659.1 | 1665.8 | 1672.4 |
| 17.5° | 1629.9 | 1629.1 | 1630.8 | 1638.3 | 1643.3 |
| 20° | 1594.1 | 1593.2 | 1595.7 | 1603.2 | 1609.1 |
| 22.5° | 1556.6 | 1554.9 | 1557.4 | 1564.1 | 1569.9 |
| 25° | 1513.2 | 1510.7 | 1514.9 | 1522.4 | 1528.2 |
| 27.5° | 1466.5 | 1462.3 | 1469.0 | 1477.4 | 1482.4 |
| 30° | 1413.2 | 1414.0 | 1420.7 | 1429.0 | 1434.0 |
| 32.5° | 1360.6 | 1359.8 | 1368.1 | 1378.1 | 1383.1 |
| 35° | 1303.9 | 1303.9 | 1313.9 | 1324.8 | 1329.0 |
| 37.5° | 1244.7 | 1247.2 | 1257.3 | 1267.3 | 1272.3 |
| 40° | 1184.7 | 1188.1 | 1198.1 | 1208.9 | 1213.1 |
| 42.5° | 1123.0 | 1126.4 | 1137.2 | 1148.9 | 1152.2 |
| 45° | 1063.0 | 1063.8 | 1075.5 | 1088.0 | 1089.7 |
| 47.5° | 998.0 | 998.8 | 1011.3 | 1023.8 | 1026.3 |
| 50° | 933.8 | 934.6 | 947.1 | 960.4 | 962.1 |
| 52.5° | 868.7 | 869.6 | 880.4 | 896.3 | 899.6 |
| 55° | 802.9 | 802.9 | 815.4 | 832.1 | 835.4 |
| 57.5° | 737.0 | 737.0 | 750.4 | 767.9 | 772.0 |
| 60° | 669.5 | 671.1 | 687.8 | 704.5 | 710.3 |
| 62.5° | 604.4 | 606.1 | 624.5 | 642.0 | 649.5 |
| 65° | 539.4 | 541.9 | 563.6 | 584.4 | 593.6 |
| 67.5° | 476.1 | 479.4 | 504.4 | 531.1 | 539.4 |
| 70° | 412.7 | 419.4 | 449.4 | 478.6 | 487.7 |
| 72.5° | 351.8 | 359.3 | 399.4 | 430.2 | 438.5 |
| 75° | 292.6 | 304.3 | 351.0 | 382.7 | 391.8 |
| 77.5° | 235.1 | 252.6 | 306.0 | 340.2 | 348.5 |
| 80° | 180.9 | 206.8 | 264.3 | 298.5 | 307.6 |
| 82.5° | 135.1 | 164.2 | 225.9 | 261.0 | 269.3 |
| 85° | 94.2 | 129.2 | 189.3 | 225.1 | 234.3 |
| 87.5° | 60.9 | 99.2 | 156.7 | 191.8 | 201.8 |
| 90° | 33.3 | 73.4 | 127.6 | 160.9 | 170.9 |
| 92.5° | 30.0 | 53.4 | 101.7 | 133.4 | 143.4 |
| 95° | 27.5 | 37.5 | 78.4 | 108.4 | 118.4 |
| 97.5° | 25.0 | 25.0 | 58.4 | 85.9 | 95.0 |
| 100° | 23.3 | 18.3 | 41.7 | 65.9 | 75.0 |
| 102.5° | 20.8 | 16.7 | 27.5 | 48.4 | 56.7 |
| 105° | 19.2 | 15.0 | 16.7 | 33.3 | 40.0 |
| 107.5° | 17.5 | 13.3 | 8.3 | 20.8 | 26.7 |
| 110° | 15.8 | 12.5 | 6.7 | 10.0 | 15.8 |

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Scaled Data Report

TEST NUMBER: P1217237
CATALOG NUMBER: 14-ID2-60-CNV-L930-U

**CANDELA DISTRIBUTION (continued):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 112.5° | *14.2* | 10.8 | 5.8 | 2.5 | 5.8 |
| 115° | *12.5* | 10.0 | 5.0 | 0.0 | 0.0 |
| 117.5° | *10.8* | 9.2 | 4.2 | 0.0 | 0.0 |
| 120° | *10.0* | 7.5 | 4.2 | 0.0 | 0.0 |
| 122.5° | *9.2* | 6.7 | 3.3 | 0.0 | 0.0 |
| 125° | *7.5* | 5.8 | 2.5 | 0.0 | 0.0 |
| 127.5° | *6.7* | 5.0 | 2.5 | 0.0 | 0.0 |
| 130° | *5.8* | 5.0 | 1.7 | 0.0 | 0.0 |
| 132.5° | *5.0* | 4.2 | 1.7 | 0.0 | 0.0 |
| 135° | *4.2* | 3.3 | 1.7 | 0.0 | 0.0 |
| 137.5° | *4.2* | 3.3 | 0.8 | 0.0 | 0.0 |
| 140° | *3.3* | 2.5 | 0.8 | 0.0 | 0.0 |
| 142.5° | *2.5* | 1.7 | 0.8 | 0.0 | 0.0 |
| 145° | *2.5* | 1.7 | 0.0 | 0.0 | 0.0 |
| 147.5° | *1.7* | 1.7 | 0.0 | 0.0 | 0.0 |
| 150° | *1.7* | 0.8 | 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: P1217237
CATALOG NUMBER: 14-ID2-60-CNV-L930-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 | 15.43 | 17.02 | 15.84 | 17.39 | 17.77 | 16.08 | 17.67 | 16.48 | 18.03 | 18.41 |
| | 3H | 17.03 | 18.48 | 17.45 | 18.85 | 19.27 | 18.05 | 19.50 | 18.47 | 19.88 | 20.30 |
| | 4H | 17.60 | 18.97 | 18.04 | 19.36 | 19.80 | 18.95 | 20.31 | 19.38 | 20.71 | 21.14 |
| | 6H | 18.00 | 19.27 | 18.45 | 19.68 | 20.13 | 19.82 | 21.09 | 20.27 | 21.50 | 21.95 |
| | 8H | 18.12 | 19.33 | 18.58 | 19.77 | 20.23 | 20.24 | 21.46 | 20.71 | 21.89 | 22.35 |
| | 12H | 18.20 | 19.36 | 18.67 | 19.79 | 20.28 | 20.68 | 21.85 | 21.15 | 22.28 | 22.77 |
| 4H | 2H | 16.07 | 17.44 | 16.51 | 17.84 | 18.27 | 16.59 | 17.95 | 17.03 | 18.35 | 18.79 |
| | 3H | 17.90 | 19.05 | 18.34 | 19.50 | 19.95 | 18.80 | 19.95 | 19.24 | 20.40 | 20.85 |
| | 4H | 18.59 | 19.64 | 19.06 | 20.10 | 20.59 | 19.85 | 20.90 | 20.32 | 21.36 | 21.85 |
| | 6H | 19.11 | 20.03 | 19.60 | 20.52 | 21.03 | 20.90 | 21.83 | 21.39 | 22.31 | 22.82 |
| | 8H | 19.28 | 20.15 | 19.78 | 20.63 | 21.15 | 21.42 | 22.28 | 21.91 | 22.77 | 23.29 |
| | 12H | 19.41 | 20.19 | 19.92 | 20.71 | 21.23 | 21.96 | 22.75 | 22.48 | 23.27 | 23.79 |
| 8H | 4H | 19.01 | 19.88 | 19.51 | 20.37 | 20.89 | 20.12 | 20.99 | 20.62 | 21.48 | 22.00 |
| | 6H | 19.68 | 20.42 | 20.21 | 20.95 | 21.48 | 21.34 | 22.07 | 21.87 | 22.60 | 23.13 |
| | 8H | 19.94 | 20.60 | 20.48 | 21.14 | 21.68 | 21.99 | 22.65 | 22.53 | 23.19 | 23.73 |
| | 12H | 20.15 | 20.73 | 20.69 | 21.27 | 21.88 | 22.70 | 23.29 | 23.24 | 23.82 | 24.43 |
| 12H | 4H | 19.11 | 19.89 | 19.62 | 20.41 | 20.93 | 20.15 | 20.93 | 20.66 | 21.45 | 21.97 |
| | 6H | 19.84 | 20.50 | 20.38 | 21.04 | 21.59 | 21.40 | 22.06 | 21.94 | 22.61 | 23.15 |
| | 8H | 20.17 | 20.76 | 20.72 | 21.29 | 21.90 | 22.12 | 22.71 | 22.67 | 23.24 | 23.85 |

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: SP1-2506-458-9

Test Date: 08/26/2025

Luminaire Tested: 22ID2-55-CFR1-L930-U

Data in this report applies to families of products including 22ID2-55-CFR1-L930-U

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

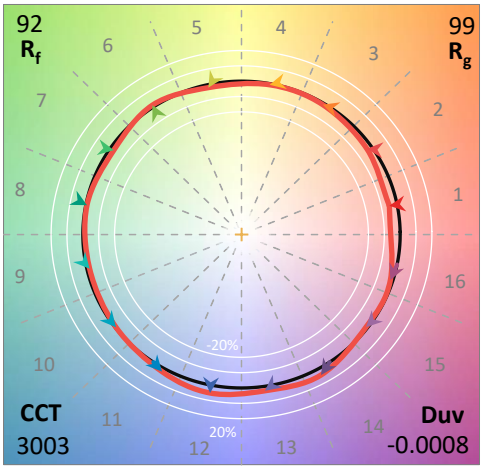
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2506-458-9 |
| 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-L930-U** |
| Description: | 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 3000K 90CRI |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3003 |
| CIE u': | 0.2507 |
| CIE v': | 0.5202 |
| Duv: | -0.0008 |
| CIE x: | 0.4356 |
| CIE y: | 0.4017 |
| CIE z: | 0.1627 |
| Peak Wavelength (nm): | 618 |
| Dominant Wavelength (nm): | 583 |
| Purity: | 51.31044 |
| Rf: | 91.9 |
| Rg: | 99.2 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | 93.2 | | | | |
| R1: | 93.7 | R9: | 59.0 | | |
| R2: | 97.2 | R10: | 92.7 | | |
| R3: | 98.7 | R11: | 94.9 | | |
| R4: | 93.5 | R12: | 82.6 | | |
| R5: | 93.6 | R13: | 94.8 | | |
| R6: | 96.3 | R14: | 99.1 | | |
| R7: | 91.5 | R15: | 89.5 | | |
| R8: | 81.5 | | | | |




## Test Conditions

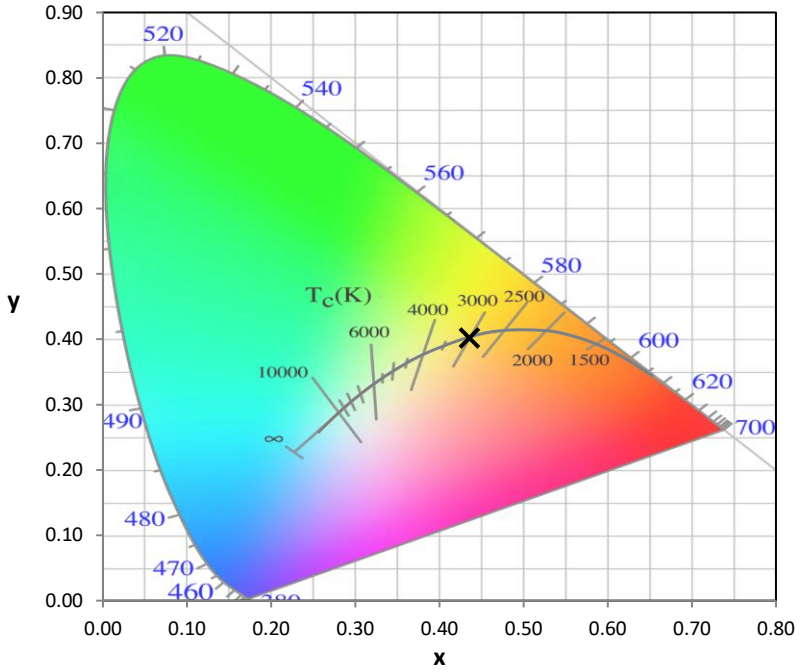
| | |
|---|---|
| Stabilization Time: | 32M |
| Operation Time: | 1H 32M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2506-458-9

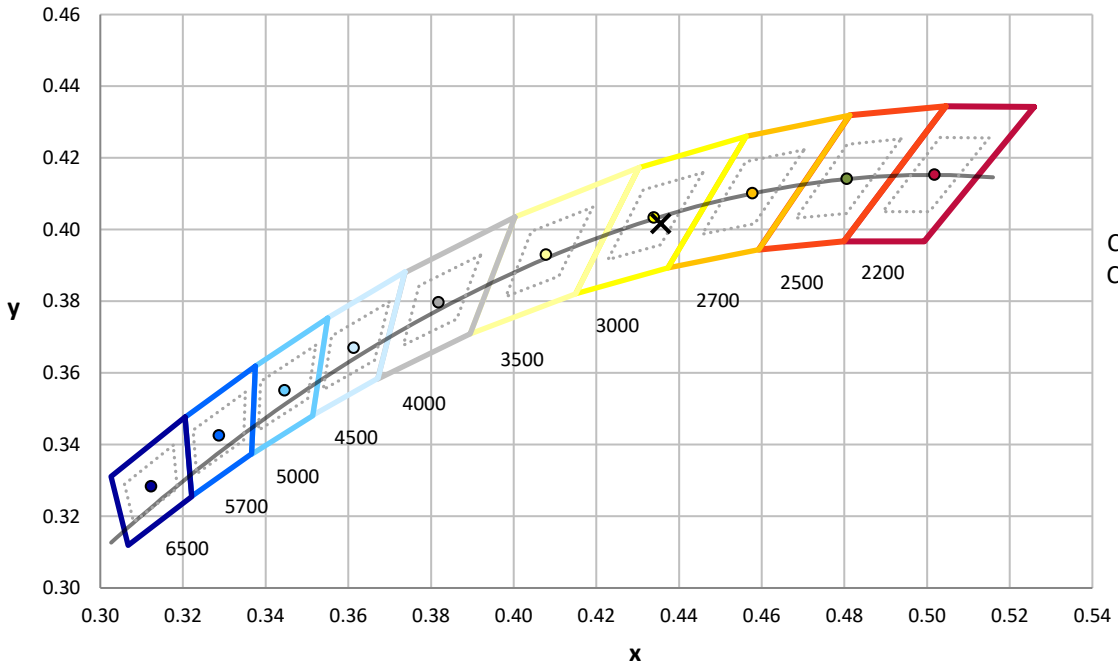
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 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 |

REPORT NUMBER: SP1-2506-458-9

## CIE 1931 Chromaticity Diagram




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

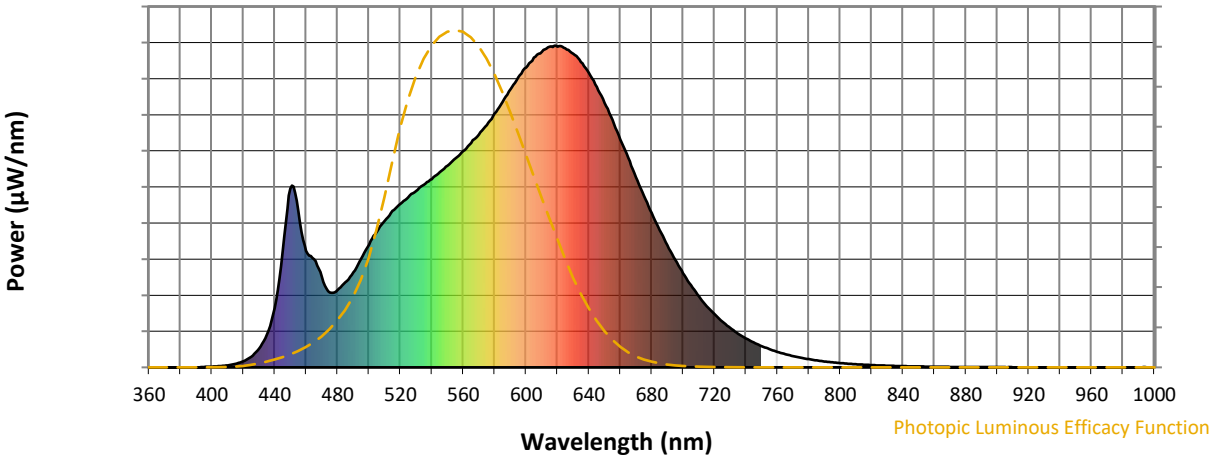



CCT = 3003K
CIE x = 0.4356
CIE y = 0.4017
Duv = -0.0008

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2506-458-9

## Photopic Flux vs. Wavelength

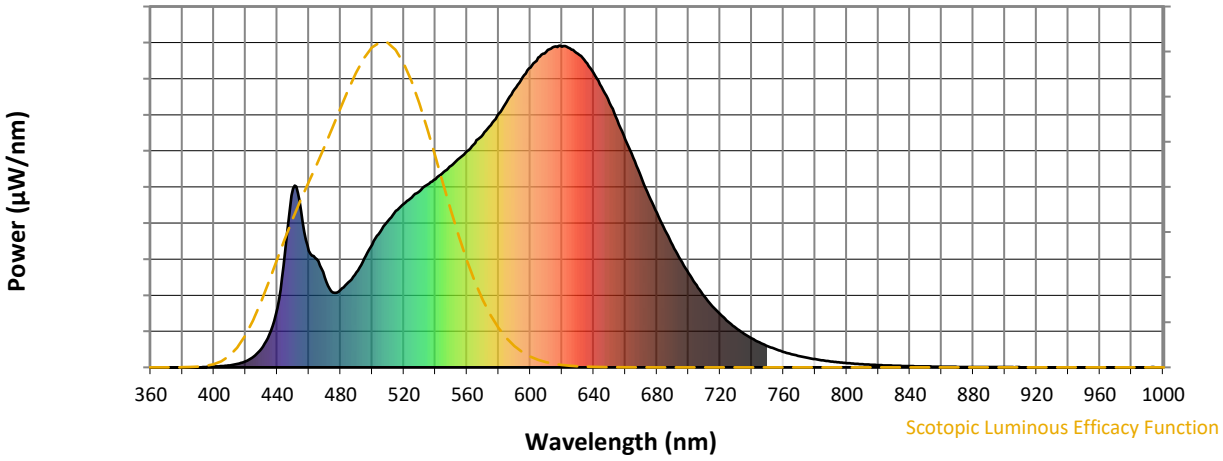



## Photopic Lumens: NR

| 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 | 296 | NR | 620 | 997 | NR | 750 | 66 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 338 | NR | 625 | 992 | NR | 755 | 56 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 381 | NR | 630 | 975 | NR | 760 | 48 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 421 | NR | 635 | 949 | NR | 765 | 41 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 456 | NR | 640 | 916 | NR | 770 | 35 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 487 | NR | 645 | 871 | NR | 775 | 30 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 508 | NR | 650 | 821 | NR | 780 | 26 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 529 | NR | 655 | 769 | NR | 785 | 22 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 548 | NR | 660 | 709 | NR | 790 | 18 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 568 | NR | 665 | 652 | NR | 795 | 16 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 585 | NR | 670 | 591 | NR | 800 | 13 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 607 | NR | 675 | 534 | NR | 805 | 11 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 627 | NR | 680 | 480 | NR | 810 | 10 | NR | 940 | 0 | NR |
| 425 | 33 | NR | 555 | 649 | NR | 685 | 427 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 673 | NR | 690 | 380 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 103 | NR | 565 | 697 | NR | 695 | 334 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 184 | NR | 570 | 723 | NR | 700 | 292 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 360 | NR | 575 | 753 | NR | 705 | 255 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 557 | NR | 580 | 789 | NR | 710 | 221 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 486 | NR | 585 | 825 | NR | 715 | 190 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 362 | NR | 590 | 864 | NR | 720 | 166 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 337 | NR | 595 | 902 | NR | 725 | 143 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 279 | NR | 600 | 932 | NR | 730 | 122 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 233 | NR | 605 | 963 | NR | 735 | 105 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 241 | NR | 610 | 981 | NR | 740 | 90 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 264 | NR | 615 | 997 | NR | 745 | 77 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2506-458-9

## Scotopic Flux vs. Wavelength

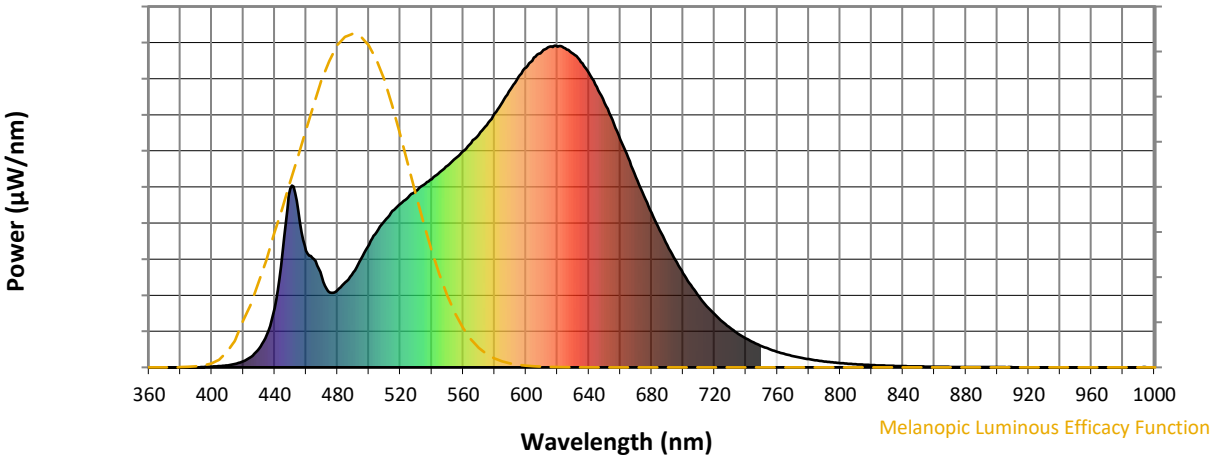



**Scotopic Lumens: NR** **S/P: 1.43**

| 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 | 296 | NR | 620 | 997 | NR | 750 | 66 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 338 | NR | 625 | 992 | NR | 755 | 56 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 381 | NR | 630 | 975 | NR | 760 | 48 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 421 | NR | 635 | 949 | NR | 765 | 41 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 456 | NR | 640 | 916 | NR | 770 | 35 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 487 | NR | 645 | 871 | NR | 775 | 30 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 508 | NR | 650 | 821 | NR | 780 | 26 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 529 | NR | 655 | 769 | NR | 785 | 22 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 548 | NR | 660 | 709 | NR | 790 | 18 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 568 | NR | 665 | 652 | NR | 795 | 16 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 585 | NR | 670 | 591 | NR | 800 | 13 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 607 | NR | 675 | 534 | NR | 805 | 11 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 627 | NR | 680 | 480 | NR | 810 | 10 | NR | 940 | 0 | NR |
| 425 | 33 | NR | 555 | 649 | NR | 685 | 427 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 673 | NR | 690 | 380 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 103 | NR | 565 | 697 | NR | 695 | 334 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 184 | NR | 570 | 723 | NR | 700 | 292 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 360 | NR | 575 | 753 | NR | 705 | 255 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 557 | NR | 580 | 789 | NR | 710 | 221 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 486 | NR | 585 | 825 | NR | 715 | 190 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 362 | NR | 590 | 864 | NR | 720 | 166 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 337 | NR | 595 | 902 | NR | 725 | 143 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 279 | NR | 600 | 932 | NR | 730 | 122 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 233 | NR | 605 | 963 | NR | 735 | 105 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 241 | NR | 610 | 981 | NR | 740 | 90 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 264 | NR | 615 | 997 | NR | 745 | 77 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2506-458-9

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.82**

| 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 | 296 | NR | 620 | 997 | NR | 750 | 66 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 338 | NR | 625 | 992 | NR | 755 | 56 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 381 | NR | 630 | 975 | NR | 760 | 48 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 421 | NR | 635 | 949 | NR | 765 | 41 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 456 | NR | 640 | 916 | NR | 770 | 35 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 487 | NR | 645 | 871 | NR | 775 | 30 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 508 | NR | 650 | 821 | NR | 780 | 26 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 529 | NR | 655 | 769 | NR | 785 | 22 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 548 | NR | 660 | 709 | NR | 790 | 18 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 568 | NR | 665 | 652 | NR | 795 | 16 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 585 | NR | 670 | 591 | NR | 800 | 13 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 607 | NR | 675 | 534 | NR | 805 | 11 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 627 | NR | 680 | 480 | NR | 810 | 10 | NR | 940 | 0 | NR |
| 425 | 33 | NR | 555 | 649 | NR | 685 | 427 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 673 | NR | 690 | 380 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 103 | NR | 565 | 697 | NR | 695 | 334 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 184 | NR | 570 | 723 | NR | 700 | 292 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 360 | NR | 575 | 753 | NR | 705 | 255 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 557 | NR | 580 | 789 | NR | 710 | 221 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 486 | NR | 585 | 825 | NR | 715 | 190 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 362 | NR | 590 | 864 | NR | 720 | 166 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 337 | NR | 595 | 902 | NR | 725 | 143 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 279 | NR | 600 | 932 | NR | 730 | 122 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 233 | NR | 605 | 963 | NR | 735 | 105 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 241 | NR | 610 | 981 | NR | 740 | 90 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 264 | NR | 615 | 997 | NR | 745 | 77 | NR | 875 | 1 | NR | | | |

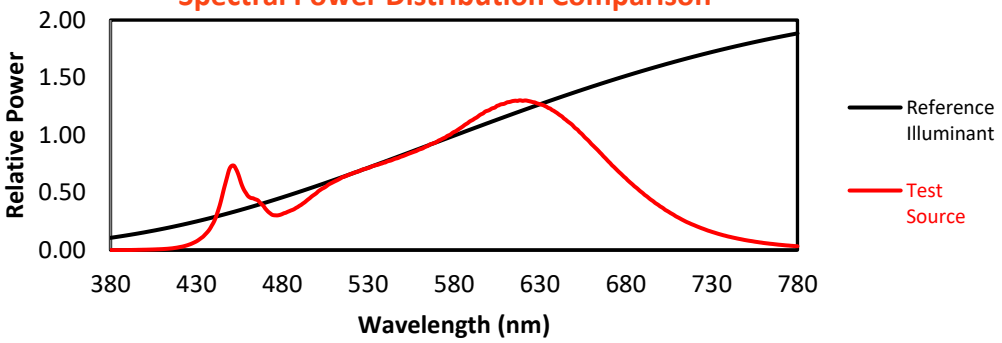
REPORT NUMBER: SP1-2506-458-9

# TM-30-18

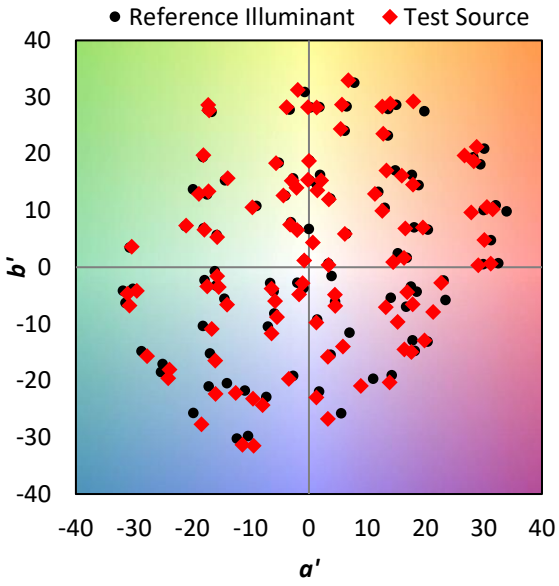
## Summary

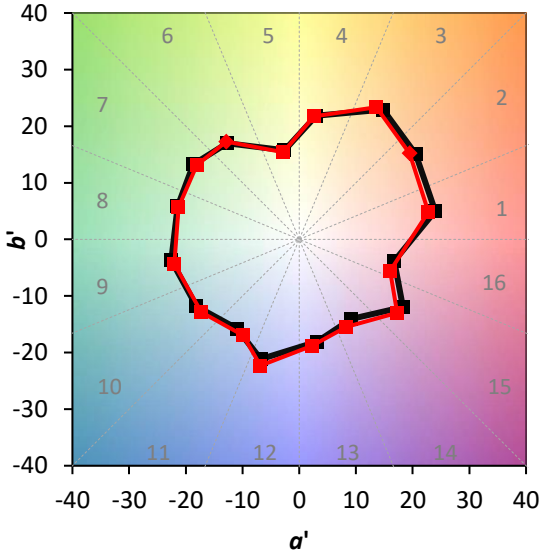
$R_f$ = 91.9
$R_g$ = 99.2
CIE $R_a$ = 93.2
$R_9$ = 59.0

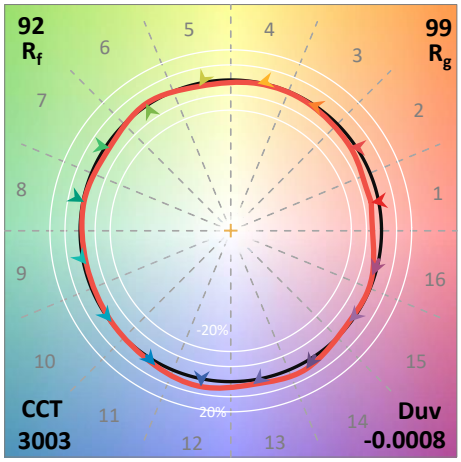
## Spectral Power Distribution Comparison

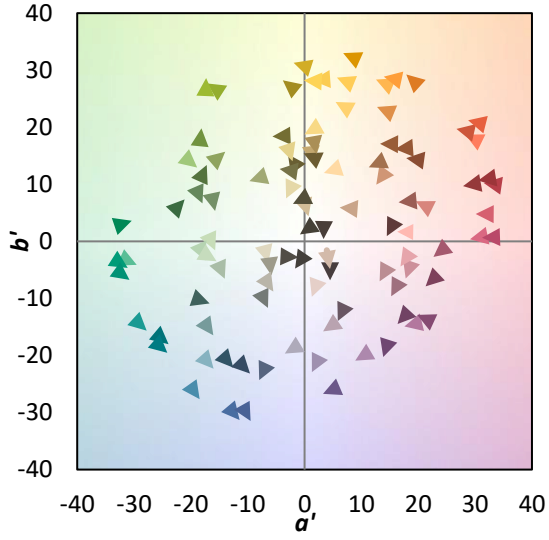



## Color Vector Graphics



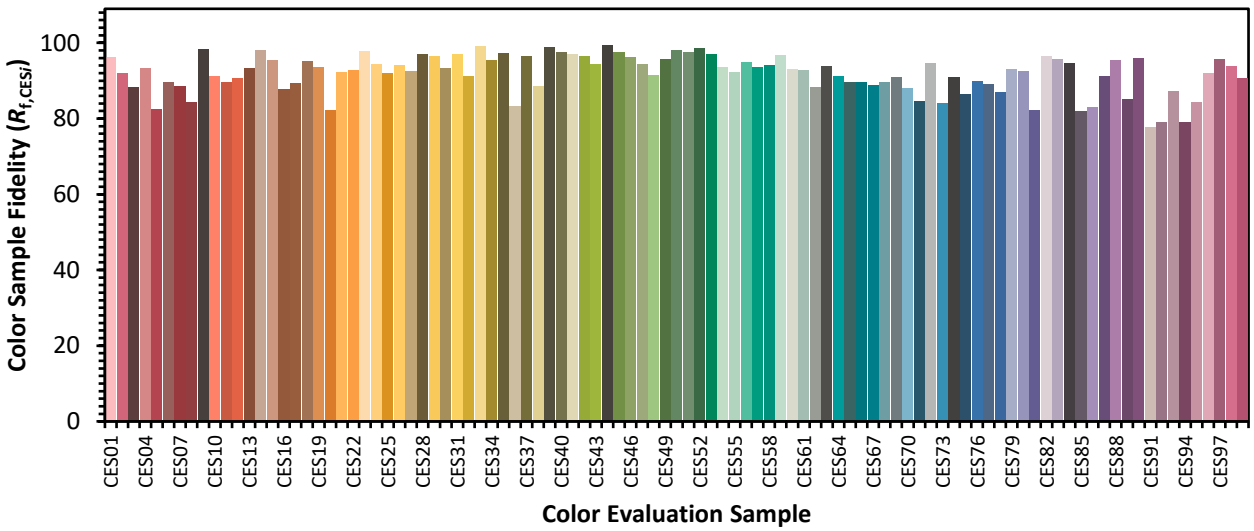



REPORT NUMBER: SP1-2506-458-9

# TM-30-18

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

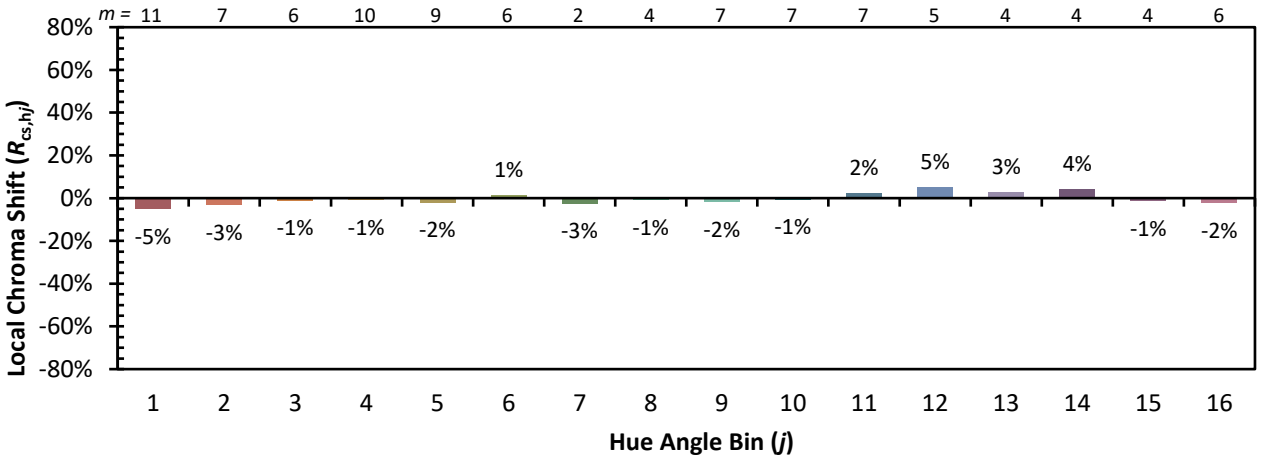
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 94 | CES51 = 97 | CES76 = 90 |
| CES02 = 63 | CES27 = 92 | CES52 = 99 | CES77 = 89 |
| CES03 = 32 | CES28 = 97 | CES53 = 97 | CES78 = 87 |
| CES04 = 70 | CES29 = 97 | CES54 = 94 | CES79 = 93 |
| CES05 = 51 | CES30 = 93 | CES55 = 92 | CES80 = 93 |
| CES06 = 51 | CES31 = 97 | CES56 = 95 | CES81 = 82 |
| CES07 = 43 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 42 | CES33 = 99 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 95 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 97 | CES60 = 93 | CES85 = 82 |
| CES11 = 59 | CES36 = 83 | CES61 = 93 | CES86 = 83 |
| CES12 = 65 | CES37 = 97 | CES62 = 88 | CES87 = 91 |
| CES13 = 44 | CES38 = 89 | CES63 = 94 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 85 |
| CES15 = 72 | CES40 = 98 | CES65 = 90 | CES90 = 96 |
| CES16 = 48 | CES41 = 97 | CES66 = 90 | CES91 = 78 |
| CES17 = 50 | CES42 = 96 | CES67 = 89 | CES92 = 79 |
| CES18 = 57 | CES43 = 94 | CES68 = 90 | CES93 = 87 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 79 |
| CES20 = 67 | CES45 = 98 | CES70 = 88 | CES95 = 84 |
| CES21 = 86 | CES46 = 96 | CES71 = 85 | CES96 = 92 |
| CES22 = 79 | CES47 = 94 | CES72 = 95 | CES97 = 96 |
| CES23 = 92 | CES48 = 91 | CES73 = 84 | CES98 = 94 |
| CES24 = 91 | CES49 = 96 | CES74 = 91 | CES99 = 91 |
| CES25 = 72 | CES50 = 98 | CES75 = 87 | |

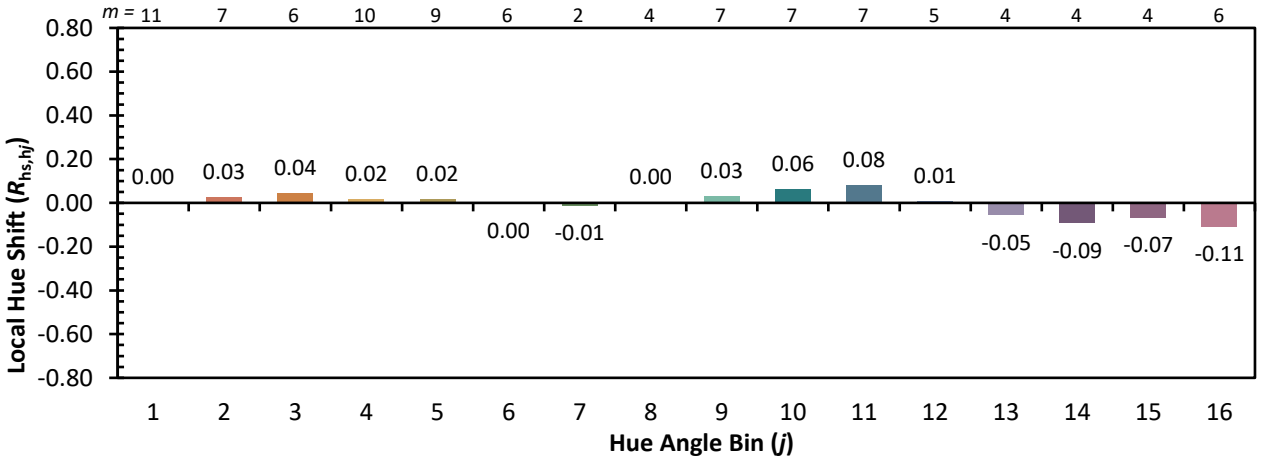


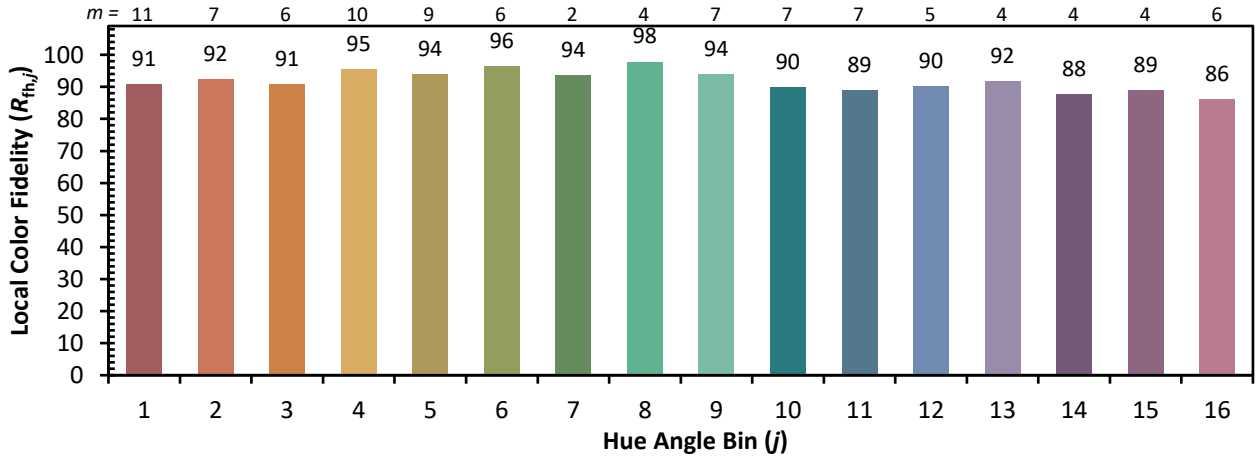
REPORT NUMBER: SP1-2506-458-9

# TM-30-18

## Color Rendition by Hue-Angle Bin



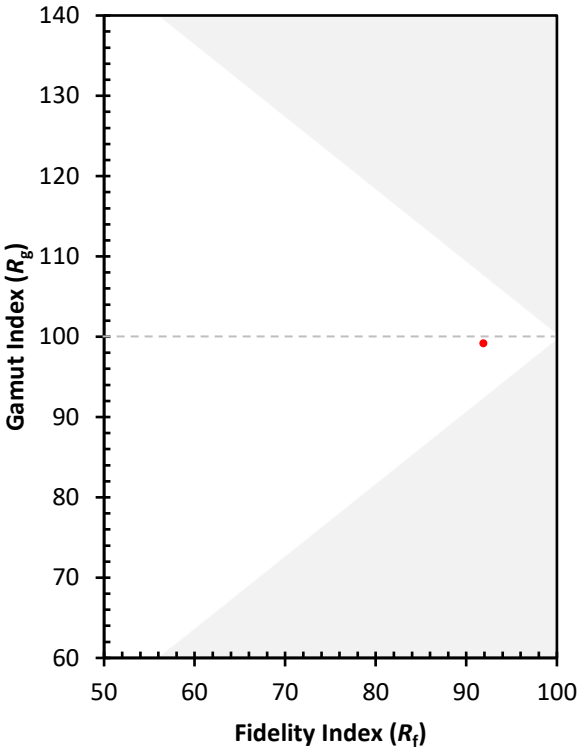



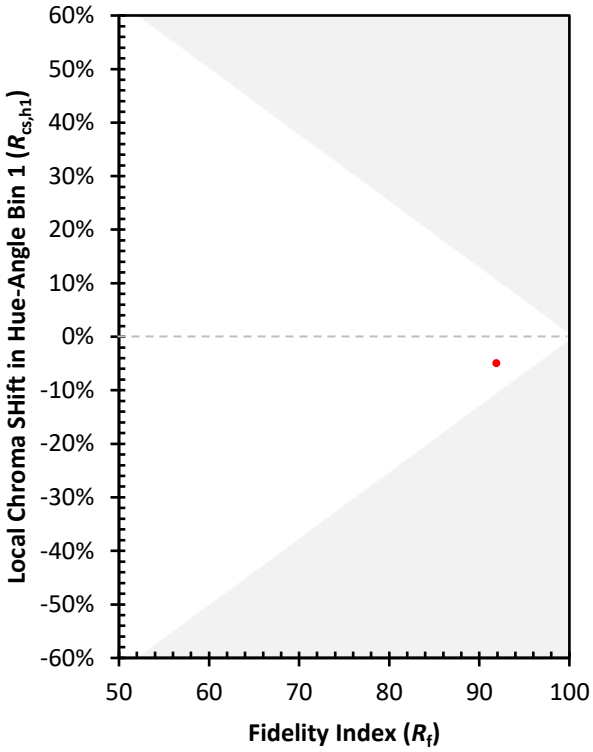



REPORT NUMBER: SP1-2506-458-9

# TM-30-18

## Measure Comparisons




(END OF REPORT)