

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: P1216897

Luminaire Tested: 14-ID2-70-CFR2-L930-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1216897  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2508-507-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 14-ID2-70-CFR2-L930-U  
Description: 1X4 IN DEPTH TROFFER WITH 2INCH CUBE REGRESS LENS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

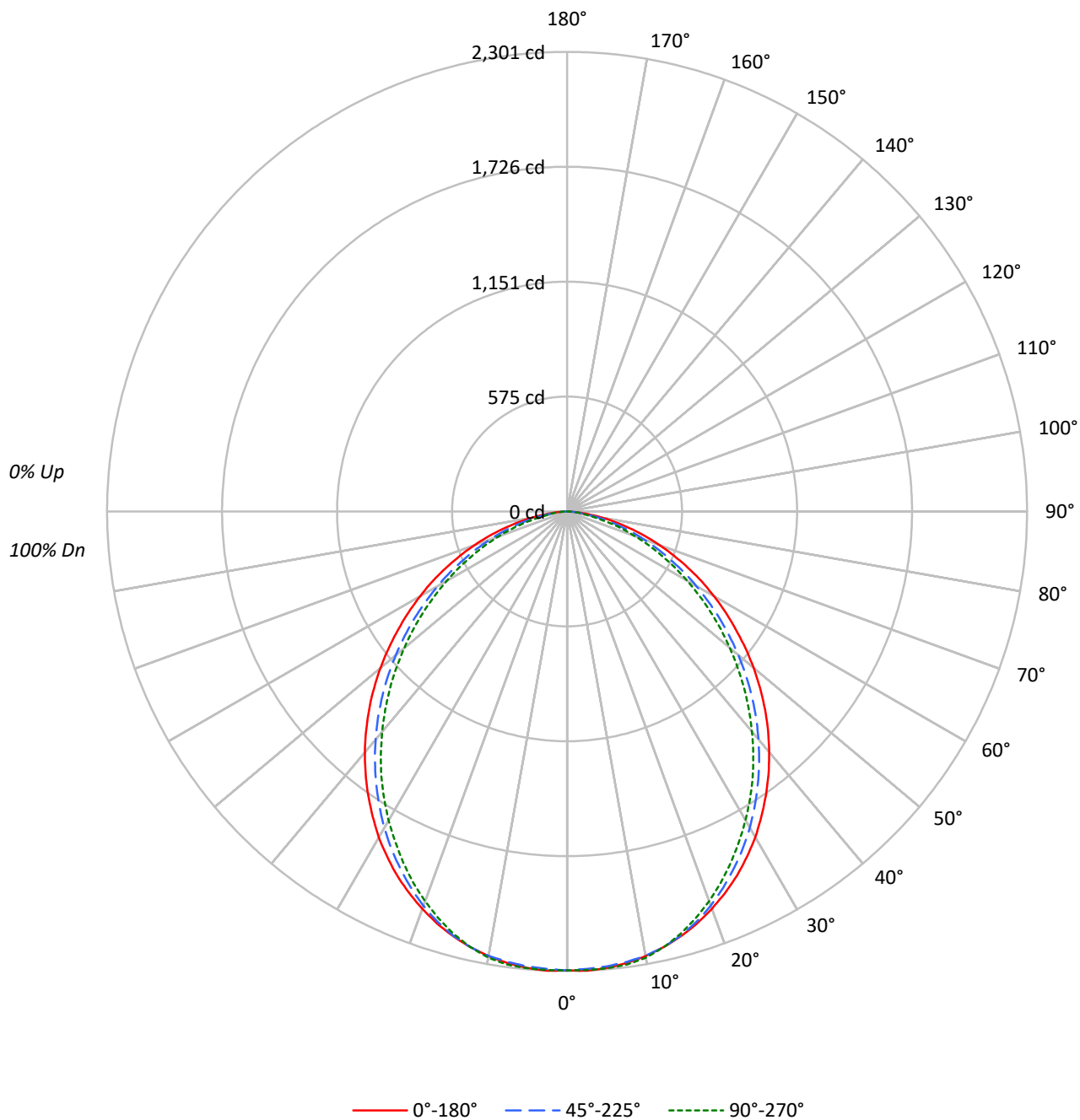
Lumens per Lamp: N/A  
Luminaire Lumens: 5574.4 lumens  
Efficiency: N/A  
Efficacy: 94.5 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.16 / 1.28  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 59  
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: P1216897  
CATALOG NUMBER: 14-ID2-70-CFR2-L930-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1216897

CATALOG NUMBER: 14-ID2-70-CFR2-L930-U

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 100 |
| 1   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  |  | 95  | 93  | 90  |  | 86  |
| 2   | 100 | 93  | 86  | 81  | 98  | 91  | 85  | 80  | 87  | 82  | 78  |  | 84  | 80  | 76  |  | 72  |
| 3   | 92  | 82  | 74  | 68  | 89  | 80  | 73  | 67  | 77  | 71  | 66  |  | 75  | 70  | 65  |  | 62  |
| 4   | 84  | 73  | 65  | 58  | 82  | 72  | 64  | 58  | 69  | 62  | 57  |  | 67  | 61  | 56  |  | 53  |
| 5   | 78  | 66  | 57  | 51  | 76  | 64  | 56  | 50  | 62  | 55  | 50  |  | 60  | 54  | 49  |  | 47  |
| 6   | 72  | 59  | 51  | 44  | 70  | 58  | 50  | 44  | 57  | 49  | 44  |  | 55  | 48  | 44  |  | 41  |
| 7   | 67  | 54  | 45  | 40  | 65  | 53  | 45  | 39  | 52  | 44  | 39  |  | 50  | 44  | 39  |  | 37  |
| 8   | 62  | 49  | 41  | 35  | 61  | 49  | 41  | 35  | 47  | 40  | 35  |  | 46  | 40  | 35  |  | 33  |
| 9   | 58  | 45  | 37  | 32  | 57  | 45  | 37  | 32  | 44  | 37  | 32  |  | 43  | 36  | 32  |  | 30  |
| 10  | 55  | 42  | 34  | 29  | 54  | 41  | 34  | 29  | 40  | 34  | 29  |  | 40  | 33  | 29  |  | 27  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 6183 | 6183 | 6183 |
| 5°  | 6196 | 6175 | 6202 |
| 10° | 6177 | 6172 | 6199 |
| 15° | 6133 | 6126 | 6101 |
| 20° | 6063 | 6017 | 5947 |
| 25° | 5972 | 5859 | 5757 |
| 30° | 5853 | 5682 | 5546 |
| 35° | 5697 | 5468 | 5320 |
| 40° | 5526 | 5233 | 5055 |
| 45° | 5328 | 4973 | 4767 |
| 50° | 5099 | 4678 | 4447 |
| 55° | 4835 | 4364 | 4108 |
| 60° | 4562 | 4016 | 3738 |
| 65° | 4255 | 3633 | 3321 |
| 70° | 3869 | 3213 | 2858 |
| 75° | 3389 | 2730 | 2250 |
| 80° | 2737 | 2021 | 1571 |
| 85° | 1846 | 1482 | 1315 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5328 cd/sqm

TEST NUMBER: P1216897  
 CATALOG NUMBER: 14-ID2-70-CFR2-L930-U

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 217.7  | 3.9       |
| 10°-20°   | 618.7  | 11.1      |
| 20°-30°   | 909.9  | 16.3      |
| 30°-40°   | 1046.2 | 18.8      |
| 40°-50°   | 1017.0 | 18.2      |
| 50°-60°   | 843.6  | 15.1      |
| 60°-70°   | 578.2  | 10.4      |
| 70°-80°   | 283.2  | 5.1       |
| 80°-90°   | 59.9   | 1.1       |
| 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°-30°    | 1746.3 | 31.3      |
| 0°-40°    | 2792.5 | 50.1      |
| 0°-60°    | 4653.2 | 83.5      |
| 0°-90°    | 5574.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5574.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2298 | 2298  | 2298 | 2298  | 2298 |      |
| 5°  | 2294 | 2291  | 2286 | 2289  | 2296 | 218  |
| 15° | 2202 | 2203  | 2199 | 2190  | 2190 | 621  |
| 25° | 2011 | 2014  | 1973 | 1947  | 1939 | 926  |
| 35° | 1734 | 1725  | 1664 | 1631  | 1619 | 1084 |
| 45° | 1400 | 1376  | 1307 | 1267  | 1252 | 1079 |
| 55° | 1031 | 997   | 930  | 892   | 876  | 923  |
| 65° | 668  | 627   | 570  | 538   | 522  | 662  |
| 75° | 326  | 299   | 263  | 229   | 216  | 347  |
| 85° | 60   | 52    | 48   | 44    | 43   | 76   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

TEST NUMBER: P1216897

CATALOG NUMBER: 14-ID2-70-CFR2-L930-U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2297.6 | 2297.6 | 2297.6 | 2297.6 | 2297.6 |
| 2.5°  | 2301.2 | 2297.6 | 2292.1 | 2293.9 | 2297.6 |
| 5°    | 2293.9 | 2291.2 | 2285.8 | 2289.4 | 2295.8 |
| 7.5°  | 2280.4 | 2278.5 | 2274.9 | 2280.4 | 2288.5 |
| 10°   | 2260.4 | 2259.5 | 2258.6 | 2262.2 | 2268.6 |
| 12.5° | 2234.2 | 2234.2 | 2234.2 | 2231.5 | 2234.2 |
| 15°   | 2201.6 | 2203.4 | 2198.8 | 2189.8 | 2189.8 |
| 17.5° | 2162.6 | 2166.2 | 2154.5 | 2140.0 | 2136.4 |
| 20°   | 2117.3 | 2121.9 | 2101.0 | 2080.2 | 2076.6 |
| 22.5° | 2066.6 | 2071.2 | 2039.5 | 2015.0 | 2010.5 |
| 25°   | 2011.4 | 2014.1 | 1973.3 | 1947.1 | 1938.9 |
| 27.5° | 1948.9 | 1948.9 | 1903.6 | 1873.7 | 1862.9 |
| 30°   | 1883.7 | 1880.1 | 1828.5 | 1796.8 | 1785.0 |
| 32.5° | 1809.4 | 1804.9 | 1747.9 | 1715.2 | 1703.5 |
| 35°   | 1734.3 | 1725.2 | 1664.5 | 1631.0 | 1619.3 |
| 37.5° | 1655.5 | 1642.8 | 1578.5 | 1543.2 | 1529.6 |
| 40°   | 1573.1 | 1555.9 | 1489.7 | 1452.6 | 1439.0 |
| 42.5° | 1487.9 | 1468.0 | 1399.2 | 1363.0 | 1345.8 |
| 45°   | 1400.1 | 1376.5 | 1306.8 | 1267.0 | 1252.5 |
| 47.5° | 1309.5 | 1283.3 | 1212.6 | 1174.6 | 1157.4 |
| 50°   | 1218.1 | 1188.2 | 1117.5 | 1079.5 | 1062.3 |
| 52.5° | 1124.8 | 1090.4 | 1023.4 | 985.3  | 969.0  |
| 55°   | 1030.6 | 997.1  | 930.1  | 892.0  | 875.7  |
| 57.5° | 940.9  | 902.0  | 836.8  | 801.5  | 783.4  |
| 60°   | 847.7  | 808.7  | 746.2  | 710.9  | 694.6  |
| 62.5° | 759.8  | 716.3  | 657.5  | 623.1  | 606.8  |
| 65°   | 668.3  | 626.7  | 570.5  | 537.9  | 521.6  |
| 67.5° | 578.7  | 539.8  | 488.1  | 454.6  | 441.0  |
| 70°   | 491.8  | 454.6  | 408.4  | 376.7  | 363.2  |
| 72.5° | 407.5  | 375.8  | 335.1  | 300.7  | 288.9  |
| 75°   | 326.0  | 298.9  | 262.6  | 229.1  | 216.4  |
| 77.5° | 249.0  | 227.3  | 192.9  | 160.3  | 147.6  |
| 80°   | 176.6  | 160.3  | 130.4  | 103.2  | 101.4  |
| 82.5° | 114.1  | 102.3  | 77.9   | 74.3   | 72.4   |
| 85°   | 59.8   | 52.5   | 48.0   | 44.4   | 42.6   |
| 87.5° | 19.0   | 19.0   | 19.0   | 15.4   | 14.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

TEST NUMBER: P1216897

CATALOG NUMBER: 14-ID2-70-CFR2-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 | 17.47            | 19.04 | 17.84 | 19.35 | 19.67 | 16.56          | 18.13 | 16.93 | 18.44 | 18.76 |
|                 | 3H   | 19.07            | 20.48 | 19.45 | 20.81 | 21.17 | 17.90          | 19.31 | 18.28 | 19.64 | 20.00 |
|                 | 4H   | 19.63            | 20.95 | 20.03 | 21.30 | 21.68 | 18.29          | 19.62 | 18.69 | 19.96 | 20.34 |
|                 | 6H   | 19.99            | 21.21 | 20.40 | 21.58 | 21.97 | 18.47          | 19.69 | 18.88 | 20.06 | 20.45 |
|                 | 8H   | 20.08            | 21.24 | 20.50 | 21.63 | 22.03 | 18.51          | 19.68 | 18.94 | 20.07 | 20.47 |
|                 | 12H  | 20.12            | 21.24 | 20.55 | 21.62 | 22.05 | 18.53          | 19.65 | 18.96 | 20.03 | 20.46 |
| 4H              | 2H   | 17.89            | 19.22 | 18.29 | 19.56 | 19.94 | 17.15          | 18.47 | 17.55 | 18.82 | 19.20 |
|                 | 3H   | 19.69            | 20.79 | 20.10 | 21.19 | 21.59 | 18.69          | 19.79 | 19.10 | 20.19 | 20.59 |
|                 | 4H   | 20.36            | 21.35 | 20.80 | 21.77 | 22.21 | 19.16          | 20.15 | 19.60 | 20.57 | 21.01 |
|                 | 6H   | 20.83            | 21.70 | 21.29 | 22.14 | 22.60 | 19.41          | 20.27 | 19.87 | 20.71 | 21.17 |
|                 | 8H   | 20.96            | 21.76 | 21.42 | 22.21 | 22.67 | 19.47          | 20.28 | 19.94 | 20.72 | 21.19 |
|                 | 12H  | 21.03            | 21.75 | 21.51 | 22.23 | 22.70 | 19.52          | 20.24 | 20.00 | 20.72 | 21.19 |
| 8H              | 4H   | 20.51            | 21.32 | 20.97 | 21.76 | 22.23 | 19.42          | 20.22 | 19.88 | 20.67 | 21.13 |
|                 | 6H   | 21.06            | 21.72 | 21.55 | 22.21 | 22.69 | 19.72          | 20.39 | 20.22 | 20.88 | 21.36 |
|                 | 8H   | 21.23            | 21.82 | 21.74 | 22.33 | 22.82 | 19.82          | 20.42 | 20.34 | 20.93 | 21.42 |
|                 | 12H  | 21.34            | 21.87 | 21.85 | 22.36 | 22.92 | 19.91          | 20.43 | 20.42 | 20.93 | 21.49 |
| 12H             | 4H   | 20.50            | 21.22 | 20.98 | 21.70 | 22.17 | 19.43          | 20.16 | 19.92 | 20.63 | 21.10 |
|                 | 6H   | 21.05            | 21.65 | 21.56 | 22.15 | 22.64 | 19.75          | 20.35 | 20.26 | 20.86 | 21.34 |
|                 | 8H   | 21.26            | 21.78 | 21.77 | 22.28 | 22.84 | 19.89          | 20.42 | 20.40 | 20.91 | 21.47 |

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

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 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  
 R2: 97.2  
 R3: 98.7  
 R4: 93.5  
 R5: 93.6  
 R6: 96.3  
 R7: 91.5  
 R8: 81.5  
 R9: 59.0  
 R10: 92.7  
 R11: 94.9  
 R12: 82.6  
 R13: 94.8  
 R14: 99.1  
 R15: 89.5



### 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**



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 <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    | 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<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(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**

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 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

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



### Color Vector Graphics



**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 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)