

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: P1216905

Luminaire Tested: 14-ID2-80-CFR2-L930-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1216905  
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-ID2-80-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**

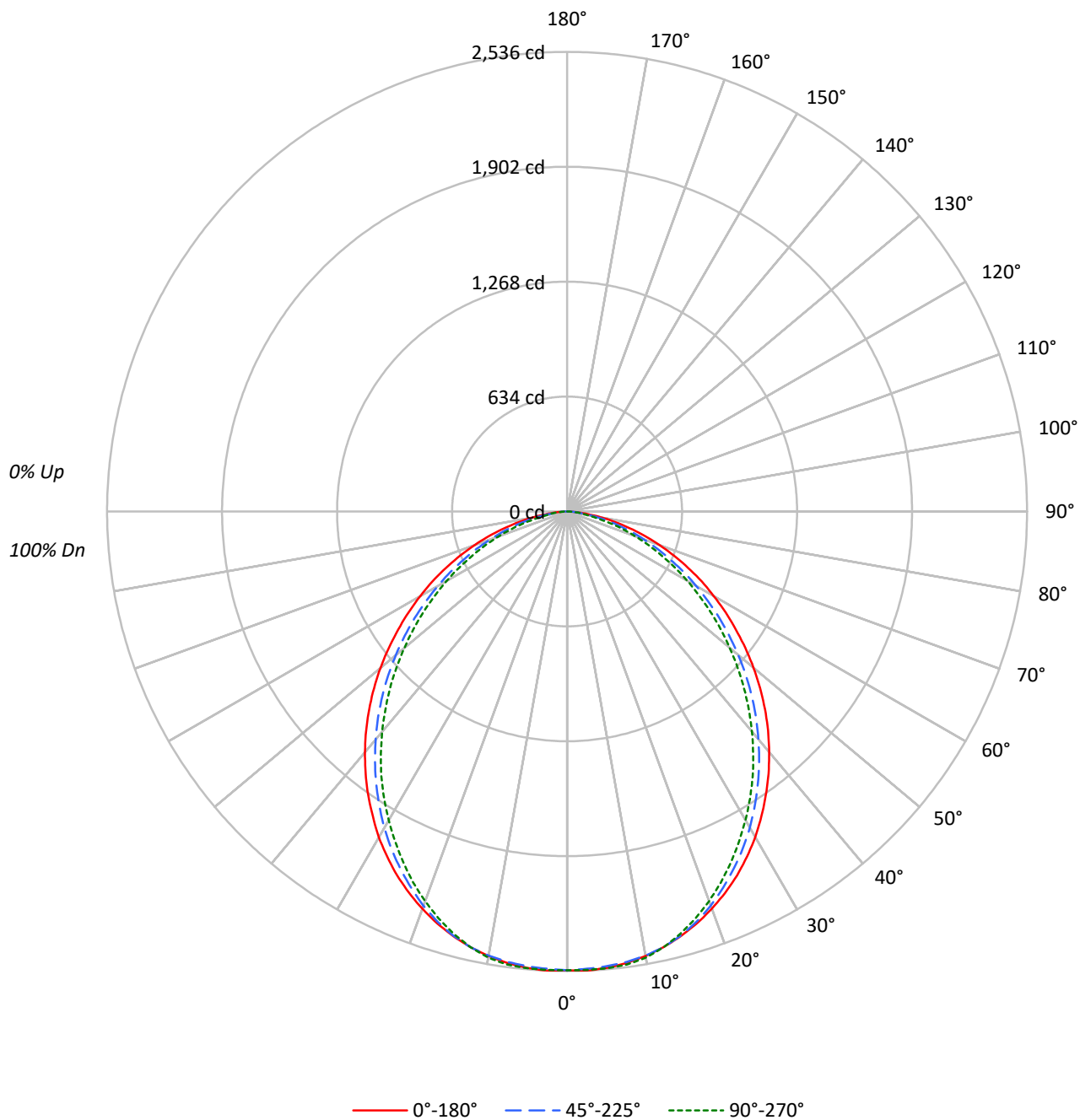
Lumens per Lamp: N/A  
Luminaire Lumens: 6142.9 lumens  
Efficiency: N/A  
Efficacy: 87.8 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.16 / 1.28  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70  
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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### Luminous Intensity Polar Plot



TEST NUMBER: P1216905

CATALOG NUMBER: 14-ID2-80-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  | 50  | 30  | 10  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 |
| 1   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  | 95  | 93  | 90  | 91  | 89  | 88  |
| 2   | 100 | 93  | 86  | 81  | 98  | 91  | 85  | 80  | 87  | 82  | 78  | 84  | 80  | 76  | 81  | 78  | 75  |
| 3   | 92  | 82  | 74  | 68  | 89  | 80  | 73  | 67  | 77  | 71  | 66  | 75  | 70  | 65  | 72  | 68  | 64  |
| 4   | 84  | 73  | 65  | 58  | 82  | 72  | 64  | 58  | 69  | 62  | 57  | 67  | 61  | 56  | 65  | 60  | 56  |
| 5   | 78  | 66  | 57  | 51  | 76  | 64  | 56  | 50  | 62  | 55  | 50  | 60  | 54  | 49  | 59  | 53  | 49  |
| 6   | 72  | 59  | 51  | 44  | 70  | 58  | 50  | 44  | 57  | 49  | 44  | 55  | 48  | 44  | 53  | 48  | 43  |
| 7   | 67  | 54  | 45  | 40  | 65  | 53  | 45  | 39  | 52  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  |
| 8   | 62  | 49  | 41  | 35  | 61  | 49  | 41  | 35  | 47  | 40  | 35  | 46  | 40  | 35  | 45  | 39  | 35  |
| 9   | 58  | 45  | 37  | 32  | 57  | 45  | 37  | 32  | 44  | 37  | 32  | 43  | 36  | 32  | 42  | 36  | 31  |
| 10  | 55  | 42  | 34  | 29  | 54  | 41  | 34  | 29  | 40  | 34  | 29  | 40  | 33  | 29  | 39  | 33  | 29  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 6813 | 6813 | 6813 |
| 5°  | 6828 | 6804 | 6834 |
| 10° | 6806 | 6801 | 6831 |
| 15° | 6759 | 6751 | 6723 |
| 20° | 6682 | 6630 | 6553 |
| 25° | 6581 | 6457 | 6344 |
| 30° | 6450 | 6261 | 6112 |
| 35° | 6278 | 6026 | 5862 |
| 40° | 6089 | 5767 | 5571 |
| 45° | 5872 | 5480 | 5253 |
| 50° | 5619 | 5156 | 4901 |
| 55° | 5328 | 4808 | 4527 |
| 60° | 5027 | 4426 | 4119 |
| 65° | 4690 | 4003 | 3660 |
| 70° | 4264 | 3541 | 3149 |
| 75° | 3736 | 3009 | 2480 |
| 80° | 3016 | 2227 | 1733 |
| 85° | 2035 | 1633 | 1448 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5872 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 239.9  | 3.9       |
| 10°-20°   | 681.8  | 11.1      |
| 20°-30°   | 1002.6 | 16.3      |
| 30°-40°   | 1152.9 | 18.8      |
| 40°-50°   | 1120.7 | 18.2      |
| 50°-60°   | 929.6  | 15.1      |
| 60°-70°   | 637.2  | 10.4      |
| 70°-80°   | 312.1  | 5.1       |
| 80°-90°   | 66.0   | 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°    | 1924.4 | 31.3      |
| 0°-40°    | 3077.3 | 50.1      |
| 0°-60°    | 5127.6 | 83.5      |
| 0°-90°    | 6142.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6142.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2532 | 2532  | 2532 | 2532  | 2532 |      |
| 5°  | 2528 | 2525  | 2519 | 2523  | 2530 | 240  |
| 15° | 2426 | 2428  | 2423 | 2413  | 2413 | 684  |
| 25° | 2216 | 2220  | 2175 | 2146  | 2137 | 1020 |
| 35° | 1911 | 1901  | 1834 | 1797  | 1784 | 1195 |
| 45° | 1543 | 1517  | 1440 | 1396  | 1380 | 1189 |
| 55° | 1136 | 1099  | 1025 | 983   | 965  | 1017 |
| 65° | 736  | 691   | 629  | 593   | 575  | 729  |
| 75° | 359  | 329   | 289  | 252   | 238  | 382  |
| 85° | 66   | 58    | 53   | 49    | 47   | 84   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2531.8 | 2531.8 | 2531.8 | 2531.8 | 2531.8 |
| 2.5°  | 2535.8 | 2531.8 | 2525.8 | 2527.8 | 2531.8 |
| 5°    | 2527.8 | 2524.8 | 2518.9 | 2522.9 | 2529.8 |
| 7.5°  | 2512.9 | 2510.9 | 2506.9 | 2512.9 | 2521.9 |
| 10°   | 2490.9 | 2489.9 | 2488.9 | 2492.9 | 2499.9 |
| 12.5° | 2462.0 | 2462.0 | 2462.0 | 2459.0 | 2462.0 |
| 15°   | 2426.0 | 2428.0 | 2423.1 | 2413.1 | 2413.1 |
| 17.5° | 2383.1 | 2387.1 | 2374.2 | 2358.2 | 2354.2 |
| 20°   | 2333.2 | 2338.2 | 2315.3 | 2292.3 | 2288.3 |
| 22.5° | 2277.4 | 2282.3 | 2247.4 | 2220.5 | 2215.5 |
| 25°   | 2216.5 | 2219.5 | 2174.6 | 2145.6 | 2136.6 |
| 27.5° | 2147.6 | 2147.6 | 2097.7 | 2064.8 | 2052.8 |
| 30°   | 2075.8 | 2071.8 | 2014.9 | 1980.0 | 1967.0 |
| 32.5° | 1993.9 | 1988.9 | 1926.1 | 1890.1 | 1877.2 |
| 35°   | 1911.1 | 1901.1 | 1834.3 | 1797.3 | 1784.4 |
| 37.5° | 1824.3 | 1810.3 | 1739.5 | 1700.5 | 1685.6 |
| 40°   | 1733.5 | 1714.5 | 1641.6 | 1600.7 | 1585.8 |
| 42.5° | 1639.7 | 1617.7 | 1541.9 | 1501.9 | 1483.0 |
| 45°   | 1542.9 | 1516.9 | 1440.1 | 1396.2 | 1380.2 |
| 47.5° | 1443.1 | 1414.1 | 1336.3 | 1294.4 | 1275.4 |
| 50°   | 1342.3 | 1309.3 | 1231.5 | 1189.6 | 1170.6 |
| 52.5° | 1239.5 | 1201.5 | 1127.7 | 1085.8 | 1067.8 |
| 55°   | 1135.7 | 1098.8 | 1024.9 | 983.0  | 965.0  |
| 57.5° | 1036.9 | 994.0  | 922.1  | 883.2  | 863.2  |
| 60°   | 934.1  | 891.2  | 822.3  | 783.4  | 765.4  |
| 62.5° | 837.3  | 789.4  | 724.5  | 686.6  | 668.6  |
| 65°   | 736.5  | 690.6  | 628.7  | 592.8  | 574.8  |
| 67.5° | 637.7  | 594.8  | 537.9  | 501.0  | 486.0  |
| 70°   | 541.9  | 501.0  | 450.1  | 415.2  | 400.2  |
| 72.5° | 449.1  | 414.2  | 369.2  | 331.3  | 318.4  |
| 75°   | 359.3  | 329.3  | 289.4  | 252.5  | 238.5  |
| 77.5° | 274.4  | 250.5  | 212.6  | 176.6  | 162.7  |
| 80°   | 194.6  | 176.6  | 143.7  | 113.8  | 111.8  |
| 82.5° | 125.7  | 112.8  | 85.8   | 81.8   | 79.8   |
| 85°   | 65.9   | 57.9   | 52.9   | 48.9   | 46.9   |
| 87.5° | 21.0   | 21.0   | 21.0   | 17.0   | 16.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**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 | 17.81            | 19.38 | 18.17 | 19.69 | 20.01 | 16.90          | 18.47 | 17.26 | 18.78 | 19.10 |
|                 | 3H   | 19.41            | 20.82 | 19.78 | 21.14 | 21.50 | 18.24          | 19.65 | 18.62 | 19.98 | 20.34 |
|                 | 4H   | 19.96            | 21.29 | 20.36 | 21.64 | 22.01 | 18.63          | 19.95 | 19.03 | 20.30 | 20.68 |
|                 | 6H   | 20.32            | 21.55 | 20.74 | 21.91 | 22.31 | 18.81          | 20.03 | 19.22 | 20.40 | 20.79 |
|                 | 8H   | 20.42            | 21.58 | 20.84 | 21.97 | 22.37 | 18.85          | 20.01 | 19.27 | 20.40 | 20.80 |
|                 | 12H  | 20.46            | 21.57 | 20.89 | 21.96 | 22.39 | 18.87          | 19.99 | 19.30 | 20.37 | 20.80 |
| 4H              | 2H   | 18.23            | 19.55 | 18.63 | 19.90 | 20.28 | 17.49          | 18.81 | 17.89 | 19.16 | 19.54 |
|                 | 3H   | 20.03            | 21.13 | 20.44 | 21.53 | 21.93 | 19.02          | 20.12 | 19.43 | 20.52 | 20.92 |
|                 | 4H   | 20.70            | 21.69 | 21.13 | 22.11 | 22.54 | 19.50          | 20.49 | 19.93 | 20.91 | 21.34 |
|                 | 6H   | 21.17            | 22.03 | 21.63 | 22.48 | 22.93 | 19.75          | 20.61 | 20.20 | 21.05 | 21.51 |
|                 | 8H   | 21.30            | 22.10 | 21.76 | 22.55 | 23.01 | 19.81          | 20.62 | 20.27 | 21.06 | 21.53 |
|                 | 12H  | 21.37            | 22.09 | 21.85 | 22.57 | 23.04 | 19.86          | 20.58 | 20.34 | 21.05 | 21.53 |
| 8H              | 4H   | 20.85            | 21.65 | 21.31 | 22.10 | 22.56 | 19.75          | 20.56 | 20.22 | 21.00 | 21.47 |
|                 | 6H   | 21.39            | 22.06 | 21.89 | 22.55 | 23.03 | 20.06          | 20.73 | 20.56 | 21.22 | 21.69 |
|                 | 8H   | 21.57            | 22.16 | 22.08 | 22.67 | 23.16 | 20.16          | 20.76 | 20.67 | 21.27 | 21.75 |
|                 | 12H  | 21.68            | 22.21 | 22.19 | 22.70 | 23.26 | 20.24          | 20.77 | 20.75 | 21.26 | 21.83 |
| 12H             | 4H   | 20.84            | 21.56 | 21.32 | 22.04 | 22.51 | 19.77          | 20.49 | 20.25 | 20.97 | 21.44 |
|                 | 6H   | 21.38            | 21.98 | 21.90 | 22.49 | 22.98 | 20.09          | 20.69 | 20.60 | 21.19 | 21.68 |
|                 | 8H   | 21.59            | 22.12 | 22.10 | 22.61 | 23.18 | 20.23          | 20.75 | 20.73 | 21.24 | 21.81 |

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  
 R<sub>f</sub>: 91.9  
 R<sub>g</sub>: 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           |

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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 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

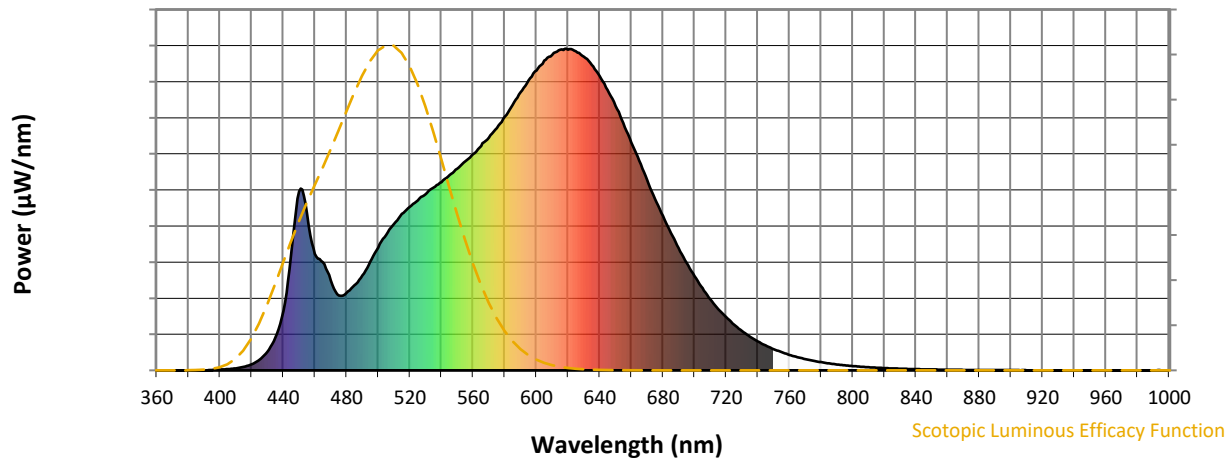


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | 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                             |                   |                               |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.43

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 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               |           |                             |                  |

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### 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                             |                   |                                      |                                |

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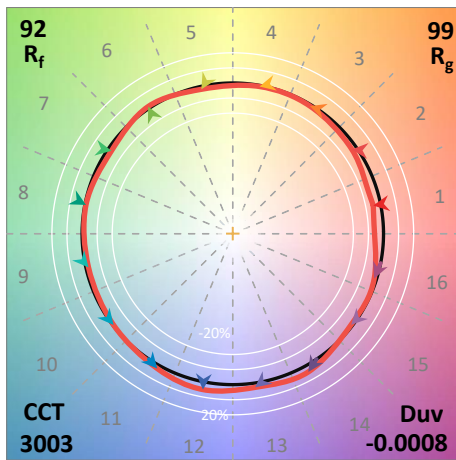
TM-30-18

### 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)