

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: P1215654

Luminaire Tested: 24-ID2-25-CFR2-L935-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1215654  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2508-510-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 24-ID2-25-CFR2-L935-U  
Description: 2X4 IN DEPTH TROFFER WITH 2INCH CUBE REGRESS LENS  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

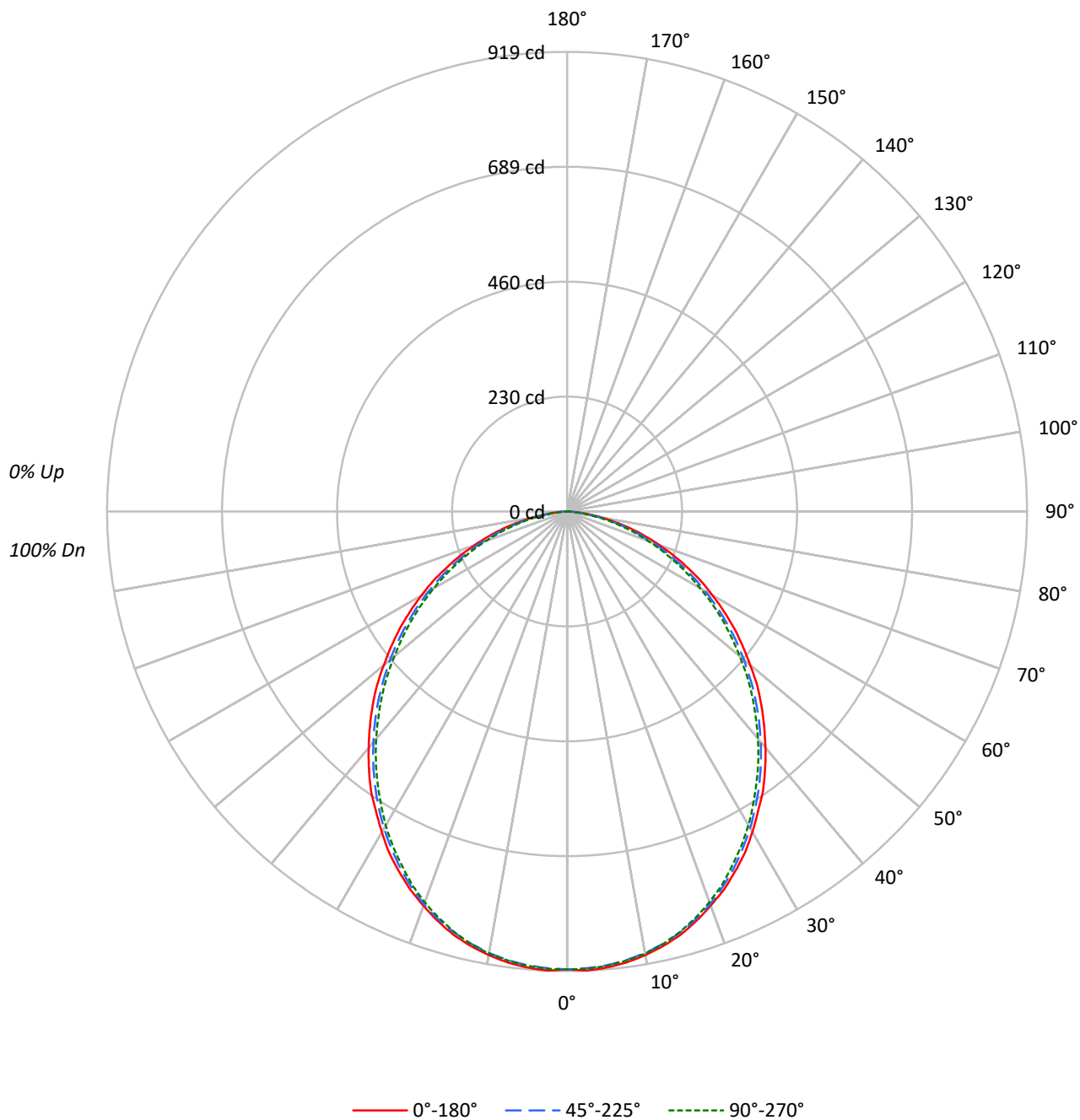
Lumens per Lamp: N/A  
Luminaire Lumens: 2278.9 lumens  
Efficiency: N/A  
Efficacy: 104.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.18 / 1.29  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 21.8  
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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CATALOG NUMBER: 24-ID2-25-CFR2-L935-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1215654

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**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   | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 96  | 98  | 95  | 93  |  | 95  | 92  | 90  |  | 85  |
| 2   | 100 | 92  | 86  | 80  | 97  | 90  | 84  | 79  | 87  | 82  | 77  |  | 83  | 79  | 76  |  | 72  |
| 3   | 91  | 81  | 74  | 67  | 89  | 80  | 73  | 67  | 77  | 71  | 65  |  | 74  | 69  | 64  |  | 61  |
| 4   | 84  | 72  | 64  | 57  | 82  | 71  | 63  | 57  | 69  | 62  | 56  |  | 66  | 60  | 55  |  | 53  |
| 5   | 77  | 65  | 56  | 50  | 75  | 64  | 56  | 49  | 62  | 54  | 49  |  | 60  | 53  | 48  |  | 46  |
| 6   | 72  | 59  | 50  | 44  | 70  | 58  | 49  | 43  | 56  | 49  | 43  |  | 54  | 48  | 43  |  | 40  |
| 7   | 67  | 53  | 45  | 39  | 65  | 53  | 44  | 39  | 51  | 44  | 38  |  | 50  | 43  | 38  |  | 36  |
| 8   | 62  | 49  | 40  | 35  | 60  | 48  | 40  | 35  | 47  | 40  | 34  |  | 46  | 39  | 34  |  | 32  |
| 9   | 58  | 45  | 37  | 31  | 57  | 44  | 37  | 31  | 43  | 36  | 31  |  | 42  | 36  | 31  |  | 29  |
| 10  | 54  | 41  | 34  | 29  | 53  | 41  | 33  | 28  | 40  | 33  | 28  |  | 39  | 33  | 28  |  | 26  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1232 | 1232 | 1232 |
| 5°  | 1236 | 1230 | 1231 |
| 10° | 1231 | 1225 | 1226 |
| 15° | 1221 | 1214 | 1213 |
| 20° | 1201 | 1197 | 1190 |
| 25° | 1179 | 1169 | 1159 |
| 30° | 1150 | 1136 | 1126 |
| 35° | 1121 | 1099 | 1085 |
| 40° | 1083 | 1057 | 1042 |
| 45° | 1045 | 1013 | 996  |
| 50° | 1000 | 965  | 943  |
| 55° | 956  | 913  | 890  |
| 60° | 904  | 857  | 826  |
| 65° | 845  | 793  | 757  |
| 70° | 771  | 721  | 682  |
| 75° | 683  | 621  | 576  |
| 80° | 549  | 490  | 449  |
| 85° | 364  | 312  | 255  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1045 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 86.6   | 3.8       |
| 10°-20°   | 245.6  | 10.8      |
| 20°-30°   | 362.4  | 15.9      |
| 30°-40°   | 419.1  | 18.4      |
| 40°-50°   | 412.2  | 18.1      |
| 50°-60°   | 350.1  | 15.4      |
| 60°-70°   | 248.2  | 10.9      |
| 70°-80°   | 127.9  | 5.6       |
| 80°-90°   | 26.9   | 1.2       |
| 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°    | 694.6  | 30.5      |
| 0°-40°    | 1113.7 | 48.9      |
| 0°-60°    | 1876.0 | 82.3      |
| 0°-90°    | 2278.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2278.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 916 | 916   | 916 | 916   | 916 |      |
| 5°  | 915 | 912   | 911 | 910   | 912 | 87   |
| 15° | 876 | 873   | 872 | 870   | 871 | 247  |
| 25° | 794 | 792   | 788 | 783   | 781 | 366  |
| 35° | 683 | 679   | 669 | 663   | 660 | 426  |
| 45° | 549 | 544   | 532 | 525   | 523 | 423  |
| 55° | 408 | 401   | 389 | 382   | 379 | 364  |
| 65° | 265 | 259   | 249 | 241   | 238 | 263  |
| 75° | 131 | 126   | 120 | 113   | 111 | 139  |
| 85° | 24  | 22    | 20  | 18    | 16  | 30   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 915.8 | 915.8 | 915.8 | 915.8 | 915.8 |
| 2.5°  | 918.9 | 915.8 | 913.9 | 913.3 | 915.4 |
| 5°    | 915.4 | 912.0 | 910.8 | 909.8 | 911.7 |
| 7.5°  | 909.5 | 906.1 | 904.9 | 903.9 | 905.8 |
| 10°   | 900.8 | 897.7 | 896.5 | 895.5 | 897.7 |
| 12.5° | 889.9 | 886.8 | 885.3 | 884.3 | 885.9 |
| 15°   | 876.2 | 872.8 | 871.6 | 869.7 | 870.6 |
| 17.5° | 858.8 | 856.3 | 855.4 | 852.0 | 852.3 |
| 20°   | 838.9 | 837.0 | 835.8 | 830.8 | 831.4 |
| 22.5° | 818.4 | 815.9 | 812.8 | 808.4 | 808.4 |
| 25°   | 794.4 | 791.6 | 787.6 | 782.6 | 781.0 |
| 27.5° | 769.5 | 766.4 | 759.9 | 755.5 | 753.9 |
| 30°   | 740.3 | 738.4 | 731.5 | 725.9 | 724.7 |
| 32.5° | 710.4 | 709.1 | 700.4 | 695.8 | 692.6 |
| 35°   | 682.7 | 679.0 | 669.0 | 663.1 | 660.3 |
| 37.5° | 650.0 | 646.6 | 636.0 | 630.7 | 627.6 |
| 40°   | 616.7 | 612.4 | 601.8 | 597.4 | 593.4 |
| 42.5° | 582.8 | 579.7 | 567.6 | 560.7 | 557.9 |
| 45°   | 549.2 | 544.5 | 532.4 | 524.9 | 523.4 |
| 47.5° | 515.3 | 508.8 | 496.9 | 489.1 | 487.6 |
| 50°   | 477.6 | 473.0 | 461.1 | 453.1 | 450.3 |
| 52.5° | 442.2 | 436.6 | 426.0 | 418.2 | 414.5 |
| 55°   | 407.6 | 401.4 | 389.3 | 382.4 | 379.3 |
| 57.5° | 371.2 | 365.6 | 354.7 | 346.0 | 343.5 |
| 60°   | 336.1 | 328.9 | 318.3 | 311.2 | 307.1 |
| 62.5° | 301.5 | 294.4 | 284.1 | 275.1 | 273.2 |
| 65°   | 265.4 | 258.9 | 249.2 | 241.2 | 237.7 |
| 67.5° | 230.6 | 224.0 | 214.7 | 208.5 | 205.4 |
| 70°   | 196.0 | 190.7 | 183.3 | 175.2 | 173.3 |
| 72.5° | 163.0 | 158.1 | 150.3 | 143.4 | 141.9 |
| 75°   | 131.3 | 125.7 | 119.5 | 112.6 | 110.8 |
| 77.5° | 99.3  | 96.5  | 89.9  | 86.2  | 84.0  |
| 80°   | 70.9  | 67.5  | 63.2  | 59.7  | 57.9  |
| 82.5° | 44.2  | 42.9  | 40.1  | 37.0  | 35.2  |
| 85°   | 23.6  | 22.4  | 20.2  | 18.0  | 16.5  |
| 87.5° | 6.5   | 7.2   | 7.2   | 6.8   | 6.8   |
| 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 | 11.84            | 13.43 | 12.20 | 13.74 | 14.05 | 11.43          | 13.01 | 11.79 | 13.33 | 13.64 |
|                 | 3H   | 13.47            | 14.89 | 13.84 | 15.22 | 15.58 | 12.95          | 14.38 | 13.33 | 14.70 | 15.06 |
|                 | 4H   | 14.03            | 15.37 | 14.43 | 15.72 | 16.10 | 13.44          | 14.79 | 13.84 | 15.13 | 15.51 |
|                 | 6H   | 14.39            | 15.63 | 14.80 | 16.00 | 16.39 | 13.75          | 14.99 | 14.16 | 15.35 | 15.75 |
|                 | 8H   | 14.48            | 15.66 | 14.91 | 16.05 | 16.45 | 13.81          | 15.00 | 14.24 | 15.38 | 15.78 |
|                 | 12H  | 14.52            | 15.65 | 14.95 | 16.04 | 16.46 | 13.83          | 14.96 | 14.26 | 15.35 | 15.78 |
| 4H              | 2H   | 12.36            | 13.70 | 12.76 | 14.05 | 14.42 | 12.02          | 13.37 | 12.42 | 13.71 | 14.09 |
|                 | 3H   | 14.19            | 15.31 | 14.60 | 15.71 | 16.11 | 13.75          | 14.87 | 14.16 | 15.27 | 15.67 |
|                 | 4H   | 14.87            | 15.88 | 15.30 | 16.29 | 16.73 | 14.35          | 15.35 | 14.78 | 15.77 | 16.21 |
|                 | 6H   | 15.34            | 16.22 | 15.79 | 16.66 | 17.12 | 14.75          | 15.62 | 15.20 | 16.07 | 16.52 |
|                 | 8H   | 15.46            | 16.28 | 15.92 | 16.72 | 17.19 | 14.84          | 15.66 | 15.30 | 16.10 | 16.57 |
|                 | 12H  | 15.52            | 16.26 | 16.01 | 16.74 | 17.21 | 14.88          | 15.61 | 15.36 | 16.09 | 16.56 |
| 8H              | 4H   | 15.08            | 15.90 | 15.54 | 16.34 | 16.81 | 14.60          | 15.42 | 15.07 | 15.87 | 16.33 |
|                 | 6H   | 15.63            | 16.31 | 16.12 | 16.80 | 17.27 | 15.09          | 15.77 | 15.58 | 16.26 | 16.73 |
|                 | 8H   | 15.80            | 16.40 | 16.31 | 16.91 | 17.40 | 15.22          | 15.83 | 15.73 | 16.33 | 16.82 |
|                 | 12H  | 15.91            | 16.44 | 16.41 | 16.93 | 17.50 | 15.29          | 15.83 | 15.80 | 16.32 | 16.88 |
| 12H             | 4H   | 15.08            | 15.82 | 15.56 | 16.29 | 16.76 | 14.62          | 15.36 | 15.10 | 15.83 | 16.30 |
|                 | 6H   | 15.64            | 16.25 | 16.15 | 16.76 | 17.25 | 15.11          | 15.72 | 15.63 | 16.23 | 16.72 |
|                 | 8H   | 15.85            | 16.39 | 16.36 | 16.88 | 17.44 | 15.29          | 15.82 | 15.79 | 16.31 | 16.88 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-10

Test Date: 08/26/2025

Luminaire Tested: 22ID2-55-CFR1-L935-U

Data in this report applies to families of products including 22ID2-55-CFR1-L935-U

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-10  
 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-L935-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 3500K 90CRI

### Spectral Parameters

CCT (K): 3377  
 CIE  $u'$ : 0.2392  
 CIE  $v'$ : 0.5128  
 Duv: -0.0007  
 CIE x: 0.4116  
 CIE y: 0.3922  
 CIE z: 0.1962  
 Peak Wavelength (nm): 618  
 Dominant Wavelength (nm): 581  
 Purity: 41.24368  
 R<sub>f</sub>: 91.8  
 R<sub>g</sub>: 99.6

CRI (Ra): 93.6  
 R1: 94.1  
 R2: 96.6  
 R3: 97.5  
 R4: 94.0  
 R5: 93.6  
 R6: 94.8  
 R7: 93.4  
 R8: 84.8  
 R9: 64.2  
 R10: 91.1  
 R11: 94.7  
 R12: 78.5  
 R13: 95.0  
 R14: 98.1  
 R15: 91.0



### Test Conditions

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

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| 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 3500K 4-step quadrangle

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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<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               | 362                                  | NR                             | 620               | 996                                  | NR                             | 750               | 68                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 412                                  | NR                             | 625               | 989                                  | NR                             | 755               | 58                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 463                                  | NR                             | 630               | 973                                  | NR                             | 760               | 49                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 509                                  | NR                             | 635               | 947                                  | NR                             | 765               | 42                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 548                                  | NR                             | 640               | 914                                  | NR                             | 770               | 36                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 582                                  | NR                             | 645               | 872                                  | NR                             | 775               | 31                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 605                                  | NR                             | 650               | 822                                  | NR                             | 780               | 26                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 626                                  | NR                             | 655               | 770                                  | NR                             | 785               | 22                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 646                                  | NR                             | 660               | 712                                  | NR                             | 790               | 19                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 6                                    | NR                             | 535               | 666                                  | NR                             | 665               | 656                                  | NR                             | 795               | 16                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 9                                    | NR                             | 540               | 683                                  | NR                             | 670               | 596                                  | NR                             | 800               | 14                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 15                                   | NR                             | 545               | 702                                  | NR                             | 675               | 538                                  | NR                             | 805               | 12                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 27                                   | NR                             | 550               | 720                                  | NR                             | 680               | 486                                  | NR                             | 810               | 10                                   | NR                             | 940               | 0                                    | NR                             |
| 425               | 48                                   | NR                             | 555               | 740                                  | NR                             | 685               | 432                                  | NR                             | 815               | 9                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 85                                   | NR                             | 560               | 757                                  | NR                             | 690               | 385                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 152                                  | NR                             | 565               | 776                                  | NR                             | 695               | 339                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 274                                  | NR                             | 570               | 794                                  | NR                             | 700               | 297                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 536                                  | NR                             | 575               | 816                                  | NR                             | 705               | 260                                  | NR                             | 835               | 5                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 793                                  | NR                             | 580               | 842                                  | NR                             | 710               | 225                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 659                                  | NR                             | 585               | 867                                  | NR                             | 715               | 194                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 484                                  | NR                             | 590               | 899                                  | NR                             | 720               | 169                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 441                                  | NR                             | 595               | 927                                  | NR                             | 725               | 146                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 353                                  | NR                             | 600               | 950                                  | NR                             | 730               | 125                                  | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 293                                  | NR                             | 605               | 974                                  | NR                             | 735               | 107                                  | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 300                                  | NR                             | 610               | 986                                  | NR                             | 740               | 92                                   | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 325                                  | NR                             | 615               | 998                                  | NR                             | 745               | 79                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.58

| 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       | 362                         | NR               | 620       | 996                         | NR               | 750       | 68                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 412                         | NR               | 625       | 989                         | NR               | 755       | 58                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 463                         | NR               | 630       | 973                         | NR               | 760       | 49                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 509                         | NR               | 635       | 947                         | NR               | 765       | 42                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 548                         | NR               | 640       | 914                         | NR               | 770       | 36                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 582                         | NR               | 645       | 872                         | NR               | 775       | 31                          | NR               | 905       | 1                           | NR               |
| 390       | 1                           | NR               | 520       | 605                         | NR               | 650       | 822                         | NR               | 780       | 26                          | NR               | 910       | 1                           | NR               |
| 395       | 2                           | NR               | 525       | 626                         | NR               | 655       | 770                         | NR               | 785       | 22                          | NR               | 915       | 1                           | NR               |
| 400       | 4                           | NR               | 530       | 646                         | NR               | 660       | 712                         | NR               | 790       | 19                          | NR               | 920       | 0                           | NR               |
| 405       | 6                           | NR               | 535       | 666                         | NR               | 665       | 656                         | NR               | 795       | 16                          | NR               | 925       | 0                           | NR               |
| 410       | 9                           | NR               | 540       | 683                         | NR               | 670       | 596                         | NR               | 800       | 14                          | NR               | 930       | 0                           | NR               |
| 415       | 15                          | NR               | 545       | 702                         | NR               | 675       | 538                         | NR               | 805       | 12                          | NR               | 935       | 0                           | NR               |
| 420       | 27                          | NR               | 550       | 720                         | NR               | 680       | 486                         | NR               | 810       | 10                          | NR               | 940       | 0                           | NR               |
| 425       | 48                          | NR               | 555       | 740                         | NR               | 685       | 432                         | NR               | 815       | 9                           | NR               | 945       | 0                           | NR               |
| 430       | 85                          | NR               | 560       | 757                         | NR               | 690       | 385                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 152                         | NR               | 565       | 776                         | NR               | 695       | 339                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 274                         | NR               | 570       | 794                         | NR               | 700       | 297                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 536                         | NR               | 575       | 816                         | NR               | 705       | 260                         | NR               | 835       | 5                           | NR               | 965       | 0                           | NR               |
| 450       | 793                         | NR               | 580       | 842                         | NR               | 710       | 225                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 659                         | NR               | 585       | 867                         | NR               | 715       | 194                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 484                         | NR               | 590       | 899                         | NR               | 720       | 169                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 441                         | NR               | 595       | 927                         | NR               | 725       | 146                         | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 353                         | NR               | 600       | 950                         | NR               | 730       | 125                         | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 293                         | NR               | 605       | 974                         | NR               | 735       | 107                         | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 300                         | NR               | 610       | 986                         | NR               | 740       | 92                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 325                         | NR               | 615       | 998                         | NR               | 745       | 79                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 3.19**

| $\lambda$<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               | 362                                  | NR                             | 620               | 996                                  | NR                             | 750               | 68                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 412                                  | NR                             | 625               | 989                                  | NR                             | 755               | 58                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 463                                  | NR                             | 630               | 973                                  | NR                             | 760               | 49                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 509                                  | NR                             | 635               | 947                                  | NR                             | 765               | 42                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 548                                  | NR                             | 640               | 914                                  | NR                             | 770               | 36                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 582                                  | NR                             | 645               | 872                                  | NR                             | 775               | 31                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 605                                  | NR                             | 650               | 822                                  | NR                             | 780               | 26                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 626                                  | NR                             | 655               | 770                                  | NR                             | 785               | 22                                   | NR                             | 915               | 1                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 646                                  | NR                             | 660               | 712                                  | NR                             | 790               | 19                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 6                                    | NR                             | 535               | 666                                  | NR                             | 665               | 656                                  | NR                             | 795               | 16                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 9                                    | NR                             | 540               | 683                                  | NR                             | 670               | 596                                  | NR                             | 800               | 14                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 15                                   | NR                             | 545               | 702                                  | NR                             | 675               | 538                                  | NR                             | 805               | 12                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 27                                   | NR                             | 550               | 720                                  | NR                             | 680               | 486                                  | NR                             | 810               | 10                                   | NR                             | 940               | 0                                    | NR                             |
| 425               | 48                                   | NR                             | 555               | 740                                  | NR                             | 685               | 432                                  | NR                             | 815               | 9                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 85                                   | NR                             | 560               | 757                                  | NR                             | 690               | 385                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 152                                  | NR                             | 565               | 776                                  | NR                             | 695               | 339                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 274                                  | NR                             | 570               | 794                                  | NR                             | 700               | 297                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 536                                  | NR                             | 575               | 816                                  | NR                             | 705               | 260                                  | NR                             | 835               | 5                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 793                                  | NR                             | 580               | 842                                  | NR                             | 710               | 225                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 659                                  | NR                             | 585               | 867                                  | NR                             | 715               | 194                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 484                                  | NR                             | 590               | 899                                  | NR                             | 720               | 169                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 441                                  | NR                             | 595               | 927                                  | NR                             | 725               | 146                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 353                                  | NR                             | 600               | 950                                  | NR                             | 730               | 125                                  | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 293                                  | NR                             | 605               | 974                                  | NR                             | 735               | 107                                  | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 300                                  | NR                             | 610               | 986                                  | NR                             | 740               | 92                                   | NR                             | 870               | 2                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 325                                  | NR                             | 615               | 998                                  | NR                             | 745               | 79                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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TM-30-18

### Summary

$R_f = 91.8$   
 $R_g = 99.6$   
 $CIE R_a = 93.6$   
 $R_9 = 64.2$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 94 | CES51 = 97 | CES76 = 88 |
| CES02 = 62 | CES27 = 92 | CES52 = 99 | CES77 = 89 |
| CES03 = 31 | CES28 = 96 | CES53 = 97 | CES78 = 85 |
| CES04 = 70 | CES29 = 96 | CES54 = 93 | CES79 = 95 |
| CES05 = 50 | CES30 = 92 | CES55 = 92 | CES80 = 93 |
| CES06 = 51 | CES31 = 97 | CES56 = 95 | CES81 = 86 |
| CES07 = 43 | CES32 = 91 | CES57 = 93 | CES82 = 97 |
| CES08 = 42 | CES33 = 99 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 94 | CES59 = 97 | CES84 = 94 |
| CES10 = 75 | CES35 = 96 | CES60 = 92 | CES85 = 83 |
| CES11 = 58 | CES36 = 82 | CES61 = 92 | CES86 = 86 |
| CES12 = 64 | CES37 = 95 | CES62 = 87 | CES87 = 91 |
| CES13 = 43 | CES38 = 87 | CES63 = 93 | CES88 = 97 |
| CES14 = 74 | CES39 = 99 | CES64 = 90 | CES89 = 87 |
| CES15 = 72 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 48 | CES41 = 97 | CES66 = 88 | CES91 = 75 |
| CES17 = 50 | CES42 = 95 | CES67 = 87 | CES92 = 80 |
| CES18 = 56 | CES43 = 94 | CES68 = 88 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 89 | CES94 = 81 |
| CES20 = 67 | CES45 = 97 | CES70 = 86 | CES95 = 84 |
| CES21 = 86 | CES46 = 97 | CES71 = 82 | CES96 = 92 |
| CES22 = 78 | CES47 = 96 | CES72 = 94 | CES97 = 96 |
| CES23 = 91 | CES48 = 92 | CES73 = 82 | CES98 = 95 |
| CES24 = 90 | CES49 = 96 | CES74 = 92 | CES99 = 92 |
| CES25 = 71 | CES50 = 98 | CES75 = 84 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)