

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: P1216828

Luminaire Tested: 14-ID2-20-CFR2-L950-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1216828  
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-ID2-20-CFR2-L950-U  
Description: 1X4 IN DEPTH TROFFER WITH 2INCH CUBE REGRESS LENS  
Light Source: 5000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

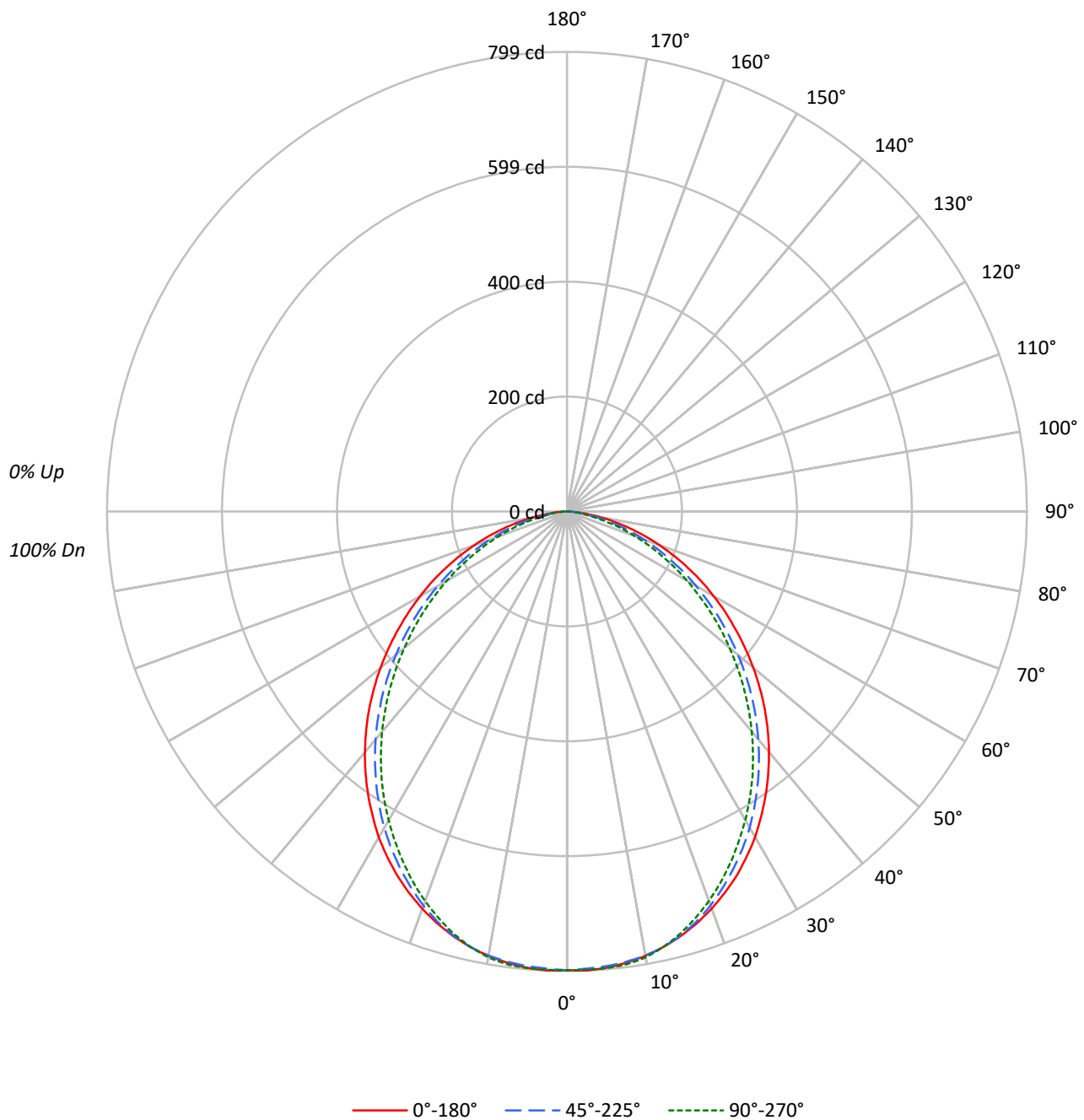
Lumens per Lamp: N/A  
Luminaire Lumens: 1934.9 lumens  
Efficiency: N/A  
Efficacy: 109.9 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.16 / 1.28  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 17.6  
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: P1216828  
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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  | 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°  | 2146 | 2146 | 2146 |
| 5°  | 2151 | 2143 | 2153 |
| 10° | 2144 | 2142 | 2152 |
| 15° | 2129 | 2126 | 2118 |
| 20° | 2105 | 2088 | 2064 |
| 25° | 2073 | 2034 | 1998 |
| 30° | 2032 | 1972 | 1925 |
| 35° | 1978 | 1898 | 1846 |
| 40° | 1918 | 1816 | 1755 |
| 45° | 1850 | 1726 | 1654 |
| 50° | 1770 | 1624 | 1544 |
| 55° | 1678 | 1514 | 1426 |
| 60° | 1583 | 1394 | 1298 |
| 65° | 1477 | 1261 | 1153 |
| 70° | 1343 | 1116 | 992  |
| 75° | 1177 | 948  | 781  |
| 80° | 950  | 702  | 545  |
| 85° | 639  | 516  | 457  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1850 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 75.6   | 3.9       |
| 10°-20°   | 214.8  | 11.1      |
| 20°-30°   | 315.8  | 16.3      |
| 30°-40°   | 363.1  | 18.8      |
| 40°-50°   | 353.0  | 18.2      |
| 50°-60°   | 292.8  | 15.1      |
| 60°-70°   | 200.7  | 10.4      |
| 70°-80°   | 98.3   | 5.1       |
| 80°-90°   | 20.8   | 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°    | 606.1  | 31.3      |
| 0°-40°    | 969.3  | 50.1      |
| 0°-60°    | 1615.1 | 83.5      |
| 0°-90°    | 1934.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1934.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 798 | 798   | 798 | 798   | 798 |      |
| 5°  | 796 | 795   | 793 | 795   | 797 | 76   |
| 15° | 764 | 765   | 763 | 760   | 760 | 215  |
| 25° | 698 | 699   | 685 | 676   | 673 | 321  |
| 35° | 602 | 599   | 578 | 566   | 562 | 376  |
| 45° | 486 | 478   | 454 | 440   | 435 | 375  |
| 55° | 358 | 346   | 323 | 310   | 304 | 320  |
| 65° | 232 | 218   | 198 | 187   | 181 | 230  |
| 75° | 113 | 104   | 91  | 80    | 75  | 120  |
| 85° | 21  | 18    | 17  | 15    | 15  | 27   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 797.5 | 797.5 | 797.5 | 797.5 | 797.5 |
| 2.5°  | 798.7 | 797.5 | 795.6 | 796.2 | 797.5 |
| 5°    | 796.2 | 795.3 | 793.4 | 794.7 | 796.9 |
| 7.5°  | 791.5 | 790.9 | 789.6 | 791.5 | 794.3 |
| 10°   | 784.6 | 784.3 | 784.0 | 785.2 | 787.4 |
| 12.5° | 775.5 | 775.5 | 775.5 | 774.5 | 775.5 |
| 15°   | 764.2 | 764.8 | 763.2 | 760.1 | 760.1 |
| 17.5° | 750.6 | 751.9 | 747.8 | 742.8 | 741.5 |
| 20°   | 734.9 | 736.5 | 729.3 | 722.0 | 720.8 |
| 22.5° | 717.3 | 718.9 | 707.9 | 699.4 | 697.8 |
| 25°   | 698.2 | 699.1 | 684.9 | 675.8 | 673.0 |
| 27.5° | 676.5 | 676.5 | 660.7 | 650.4 | 646.6 |
| 30°   | 653.8 | 652.6 | 634.7 | 623.7 | 619.6 |
| 32.5° | 628.1 | 626.5 | 606.7 | 595.4 | 591.3 |
| 35°   | 602.0 | 598.8 | 577.8 | 566.1 | 562.0 |
| 37.5° | 574.6 | 570.2 | 547.9 | 535.6 | 530.9 |
| 40°   | 546.0 | 540.0 | 517.1 | 504.2 | 499.5 |
| 42.5° | 516.5 | 509.5 | 485.7 | 473.1 | 467.1 |
| 45°   | 486.0 | 477.8 | 453.6 | 439.8 | 434.7 |
| 47.5° | 454.5 | 445.4 | 420.9 | 407.7 | 401.7 |
| 50°   | 422.8 | 412.4 | 387.9 | 374.7 | 368.7 |
| 52.5° | 390.4 | 378.5 | 355.2 | 342.0 | 336.3 |
| 55°   | 357.7 | 346.1 | 322.8 | 309.6 | 304.0 |
| 57.5° | 326.6 | 313.1 | 290.5 | 278.2 | 271.9 |
| 60°   | 294.2 | 280.7 | 259.0 | 246.8 | 241.1 |
| 62.5° | 263.7 | 248.6 | 228.2 | 216.3 | 210.6 |
| 65°   | 232.0 | 217.5 | 198.0 | 186.7 | 181.1 |
| 67.5° | 200.9 | 187.3 | 169.4 | 157.8 | 153.1 |
| 70°   | 170.7 | 157.8 | 141.8 | 130.8 | 126.1 |
| 72.5° | 141.5 | 130.5 | 116.3 | 104.4 | 100.3 |
| 75°   | 113.2 | 103.7 | 91.2  | 79.5  | 75.1  |
| 77.5° | 86.4  | 78.9  | 67.0  | 55.6  | 51.2  |
| 80°   | 61.3  | 55.6  | 45.3  | 35.8  | 35.2  |
| 82.5° | 39.6  | 35.5  | 27.0  | 25.8  | 25.1  |
| 85°   | 20.7  | 18.2  | 16.7  | 15.4  | 14.8  |
| 87.5° | 6.6   | 6.6   | 6.6   | 5.3   | 5.0   |
| 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 | 13.80            | 15.36 | 14.16 | 15.68 | 15.99 | 12.89          | 14.45 | 13.25 | 14.77 | 15.08 |
|                 | 3H   | 15.39            | 16.80 | 15.77 | 17.13 | 17.49 | 14.23          | 15.64 | 14.61 | 15.96 | 16.33 |
|                 | 4H   | 15.95            | 17.27 | 16.35 | 17.62 | 18.00 | 14.62          | 15.94 | 15.02 | 16.29 | 16.67 |
|                 | 6H   | 16.31            | 17.53 | 16.72 | 17.90 | 18.29 | 14.79          | 16.02 | 15.20 | 16.38 | 16.77 |
|                 | 8H   | 16.40            | 17.57 | 16.83 | 17.96 | 18.36 | 14.83          | 16.00 | 15.26 | 16.39 | 16.79 |
|                 | 12H  | 16.44            | 17.56 | 16.87 | 17.94 | 18.37 | 14.86          | 15.97 | 15.29 | 16.36 | 16.78 |
| 4H              | 2H   | 14.22            | 15.54 | 14.62 | 15.89 | 16.27 | 13.47          | 14.80 | 13.87 | 15.14 | 15.52 |
|                 | 3H   | 16.02            | 17.12 | 16.43 | 17.52 | 17.92 | 15.01          | 16.11 | 15.42 | 16.51 | 16.91 |
|                 | 4H   | 16.69            | 17.68 | 17.12 | 18.09 | 18.53 | 15.49          | 16.48 | 15.92 | 16.89 | 17.33 |
|                 | 6H   | 17.16            | 18.02 | 17.61 | 18.46 | 18.92 | 15.73          | 16.60 | 16.19 | 17.04 | 17.50 |
|                 | 8H   | 17.28            | 18.09 | 17.75 | 18.53 | 19.00 | 15.80          | 16.60 | 16.26 | 17.05 | 17.51 |
|                 | 12H  | 17.35            | 18.07 | 17.83 | 18.55 | 19.02 | 15.84          | 16.56 | 16.32 | 17.04 | 17.51 |
| 8H              | 4H   | 16.83            | 17.64 | 17.30 | 18.08 | 18.55 | 15.74          | 16.55 | 16.20 | 16.99 | 17.46 |
|                 | 6H   | 17.38            | 18.05 | 17.88 | 18.54 | 19.01 | 16.05          | 16.71 | 16.54 | 17.20 | 17.68 |
|                 | 8H   | 17.55            | 18.15 | 18.06 | 18.66 | 19.14 | 16.15          | 16.74 | 16.66 | 17.25 | 17.74 |
|                 | 12H  | 17.67            | 18.19 | 18.17 | 18.68 | 19.25 | 16.23          | 16.76 | 16.74 | 17.25 | 17.81 |
| 12H             | 4H   | 16.83            | 17.55 | 17.31 | 18.02 | 18.49 | 15.76          | 16.48 | 16.24 | 16.96 | 17.43 |
|                 | 6H   | 17.37            | 17.97 | 17.88 | 18.48 | 18.97 | 16.07          | 16.67 | 16.59 | 17.18 | 17.67 |
|                 | 8H   | 17.58            | 18.11 | 18.09 | 18.60 | 19.16 | 16.21          | 16.74 | 16.72 | 17.23 | 17.79 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-13

Test Date: 08/27/2025

Luminaire Tested: 22ID2-55-CFR1-L950-U

Data in this report applies to families of products including 22ID2-55-CFR1-L950-U

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-13  
 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-L950-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 5000K 90CRI

### Spectral Parameters

CCT (K): 4919  
 CIE  $u'$ : 0.2096  
 CIE  $v'$ : 0.4901  
 Duv: 0.0038  
 CIE x: 0.3483  
 CIE y: 0.3619  
 CIE z: 0.2898  
 Peak Wavelength (nm): 453  
 Dominant Wavelength (nm): 570  
 Purity: 13.10873  
 R<sub>f</sub>: 90.8  
 R<sub>g</sub>: 97.4

CRI (Ra): 94.0  
 R1: 94.8  
 R2: 97.7  
 R3: 98.4  
 R4: 90.8  
 R5: 92.2  
 R6: 94.3  
 R7: 94.0  
 R8: 90.0  
 R9: 77.7  
 R10: 93.1  
 R11: 92.0  
 R12: 65.9  
 R13: 95.9  
 R14: 99.0  
 R15: 91.4



### Test Conditions

Stabilization Time: M  
 Operation Time: 1H 0M  
 Sphere Temperature (°C): 25.0

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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 5000K 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               | 419                                    | NR                             | 620               | 583                                    | NR                             | 750               | 44                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 441                                    | NR                             | 625               | 580                                    | NR                             | 755               | 37                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 472                                    | NR                             | 630               | 572                                    | NR                             | 760               | 32                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 501                                    | NR                             | 635               | 559                                    | NR                             | 765               | 27                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 524                                    | NR                             | 640               | 543                                    | NR                             | 770               | 23                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 545                                    | NR                             | 645               | 522                                    | NR                             | 775               | 20                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 1                                      | NR                             | 520               | 559                                    | NR                             | 650               | 496                                    | NR                             | 780               | 17                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 3                                      | NR                             | 525               | 572                                    | NR                             | 655               | 468                                    | NR                             | 785               | 14                                     | NR                             | 915               | 0                                      | NR                             |
| 400               | 4                                      | NR                             | 530               | 581                                    | NR                             | 660               | 435                                    | NR                             | 790               | 12                                     | NR                             | 920               | 0                                      | NR                             |
| 405               | 7                                      | NR                             | 535               | 590                                    | NR                             | 665               | 403                                    | NR                             | 795               | 10                                     | NR                             | 925               | 0                                      | NR                             |
| 410               | 9                                      | NR                             | 540               | 595                                    | NR                             | 670               | 368                                    | NR                             | 800               | 9                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 14                                     | NR                             | 545               | 599                                    | NR                             | 675               | 335                                    | NR                             | 805               | 8                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 23                                     | NR                             | 550               | 599                                    | NR                             | 680               | 304                                    | NR                             | 810               | 6                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 40                                     | NR                             | 555               | 599                                    | NR                             | 685               | 271                                    | NR                             | 815               | 6                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 72                                     | NR                             | 560               | 595                                    | NR                             | 690               | 243                                    | NR                             | 820               | 5                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 132                                    | NR                             | 565               | 589                                    | NR                             | 695               | 215                                    | NR                             | 825               | 4                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 243                                    | NR                             | 570               | 581                                    | NR                             | 700               | 189                                    | NR                             | 830               | 3                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 488                                    | NR                             | 575               | 575                                    | NR                             | 705               | 165                                    | NR                             | 835               | 3                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 879                                    | NR                             | 580               | 573                                    | NR                             | 710               | 144                                    | NR                             | 840               | 3                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 974                                    | NR                             | 585               | 570                                    | NR                             | 715               | 124                                    | NR                             | 845               | 2                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 726                                    | NR                             | 590               | 572                                    | NR                             | 720               | 108                                    | NR                             | 850               | 2                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 627                                    | NR                             | 595               | 574                                    | NR                             | 725               | 93                                     | NR                             | 855               | 2                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 546                                    | NR                             | 600               | 576                                    | NR                             | 730               | 80                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 434                                    | NR                             | 605               | 581                                    | NR                             | 735               | 69                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 395                                    | NR                             | 610               | 582                                    | NR                             | 740               | 59                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 403                                    | NR                             | 615               | 586                                    | NR                             | 745               | 51                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 2.09

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 419                         | NR               | 620       | 583                         | NR               | 750       | 44                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 441                         | NR               | 625       | 580                         | NR               | 755       | 37                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 472                         | NR               | 630       | 572                         | NR               | 760       | 32                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 501                         | NR               | 635       | 559                         | NR               | 765       | 27                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 524                         | NR               | 640       | 543                         | NR               | 770       | 23                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 545                         | NR               | 645       | 522                         | NR               | 775       | 20                          | NR               | 905       | 0                           | NR               |
| 390       | 1                           | NR               | 520       | 559                         | NR               | 650       | 496                         | NR               | 780       | 17                          | NR               | 910       | 0                           | NR               |
| 395       | 3                           | NR               | 525       | 572                         | NR               | 655       | 468                         | NR               | 785       | 14                          | NR               | 915       | 0                           | NR               |
| 400       | 4                           | NR               | 530       | 581                         | NR               | 660       | 435                         | NR               | 790       | 12                          | NR               | 920       | 0                           | NR               |
| 405       | 7                           | NR               | 535       | 590                         | NR               | 665       | 403                         | NR               | 795       | 10                          | NR               | 925       | 0                           | NR               |
| 410       | 9                           | NR               | 540       | 595                         | NR               | 670       | 368                         | NR               | 800       | 9                           | NR               | 930       | 0                           | NR               |
| 415       | 14                          | NR               | 545       | 599                         | NR               | 675       | 335                         | NR               | 805       | 8                           | NR               | 935       | 0                           | NR               |
| 420       | 23                          | NR               | 550       | 599                         | NR               | 680       | 304                         | NR               | 810       | 6                           | NR               | 940       | 0                           | NR               |
| 425       | 40                          | NR               | 555       | 599                         | NR               | 685       | 271                         | NR               | 815       | 6                           | NR               | 945       | 0                           | NR               |
| 430       | 72                          | NR               | 560       | 595                         | NR               | 690       | 243                         | NR               | 820       | 5                           | NR               | 950       | 0                           | NR               |
| 435       | 132                         | NR               | 565       | 589                         | NR               | 695       | 215                         | NR               | 825       | 4                           | NR               | 955       | 0                           | NR               |
| 440       | 243                         | NR               | 570       | 581                         | NR               | 700       | 189                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 488                         | NR               | 575       | 575                         | NR               | 705       | 165                         | NR               | 835       | 3                           | NR               | 965       | 0                           | NR               |
| 450       | 879                         | NR               | 580       | 573                         | NR               | 710       | 144                         | NR               | 840       | 3                           | NR               | 970       | 0                           | NR               |
| 455       | 974                         | NR               | 585       | 570                         | NR               | 715       | 124                         | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 726                         | NR               | 590       | 572                         | NR               | 720       | 108                         | NR               | 850       | 2                           | NR               | 980       | 0                           | NR               |
| 465       | 627                         | NR               | 595       | 574                         | NR               | 725       | 93                          | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 546                         | NR               | 600       | 576                         | NR               | 730       | 80                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 434                         | NR               | 605       | 581                         | NR               | 735       | 69                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 395                         | NR               | 610       | 582                         | NR               | 740       | 59                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 403                         | NR               | 615       | 586                         | NR               | 745       | 51                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2506-458-13

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.55

| 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       | 419                         | NR               | 620       | 583                         | NR               | 750       | 44                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 441                         | NR               | 625       | 580                         | NR               | 755       | 37                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 472                         | NR               | 630       | 572                         | NR               | 760       | 32                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 501                         | NR               | 635       | 559                         | NR               | 765       | 27                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 524                         | NR               | 640       | 543                         | NR               | 770       | 23                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 545                         | NR               | 645       | 522                         | NR               | 775       | 20                          | NR               | 905       | 0                           | NR               |
| 390       | 1                           | NR               | 520       | 559                         | NR               | 650       | 496                         | NR               | 780       | 17                          | NR               | 910       | 0                           | NR               |
| 395       | 3                           | NR               | 525       | 572                         | NR               | 655       | 468                         | NR               | 785       | 14                          | NR               | 915       | 0                           | NR               |
| 400       | 4                           | NR               | 530       | 581                         | NR               | 660       | 435                         | NR               | 790       | 12                          | NR               | 920       | 0                           | NR               |
| 405       | 7                           | NR               | 535       | 590                         | NR               | 665       | 403                         | NR               | 795       | 10                          | NR               | 925       | 0                           | NR               |
| 410       | 9                           | NR               | 540       | 595                         | NR               | 670       | 368                         | NR               | 800       | 9                           | NR               | 930       | 0                           | NR               |
| 415       | 14                          | NR               | 545       | 599                         | NR               | 675       | 335                         | NR               | 805       | 8                           | NR               | 935       | 0                           | NR               |
| 420       | 23                          | NR               | 550       | 599                         | NR               | 680       | 304                         | NR               | 810       | 6                           | NR               | 940       | 0                           | NR               |
| 425       | 40                          | NR               | 555       | 599                         | NR               | 685       | 271                         | NR               | 815       | 6                           | NR               | 945       | 0                           | NR               |
| 430       | 72                          | NR               | 560       | 595                         | NR               | 690       | 243                         | NR               | 820       | 5                           | NR               | 950       | 0                           | NR               |
| 435       | 132                         | NR               | 565       | 589                         | NR               | 695       | 215                         | NR               | 825       | 4                           | NR               | 955       | 0                           | NR               |
| 440       | 243                         | NR               | 570       | 581                         | NR               | 700       | 189                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 488                         | NR               | 575       | 575                         | NR               | 705       | 165                         | NR               | 835       | 3                           | NR               | 965       | 0                           | NR               |
| 450       | 879                         | NR               | 580       | 573                         | NR               | 710       | 144                         | NR               | 840       | 3                           | NR               | 970       | 0                           | NR               |
| 455       | 974                         | NR               | 585       | 570                         | NR               | 715       | 124                         | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 726                         | NR               | 590       | 572                         | NR               | 720       | 108                         | NR               | 850       | 2                           | NR               | 980       | 0                           | NR               |
| 465       | 627                         | NR               | 595       | 574                         | NR               | 725       | 93                          | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 546                         | NR               | 600       | 576                         | NR               | 730       | 80                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 434                         | NR               | 605       | 581                         | NR               | 735       | 69                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 395                         | NR               | 610       | 582                         | NR               | 740       | 59                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 403                         | NR               | 615       | 586                         | NR               | 745       | 51                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2506-458-13

TM-30-18

### Summary

$R_f = 90.8$   
 $R_g = 97.4$   
 $CIE R_a = 94.0$   
 $R_9 = 77.7$

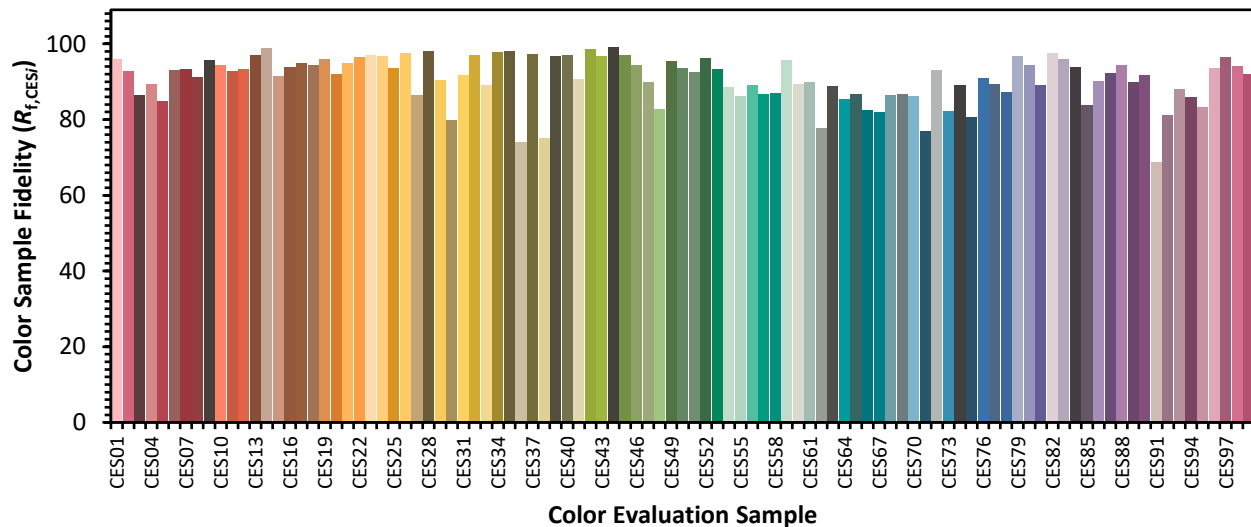


### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 98 | CES51 = 93 | CES76 = 91 |
| CES02 = 61 | CES27 = 86 | CES52 = 96 | CES77 = 89 |
| CES03 = 31 | CES28 = 98 | CES53 = 93 | CES78 = 87 |
| CES04 = 68 | CES29 = 90 | CES54 = 89 | CES79 = 97 |
| CES05 = 48 | CES30 = 80 | CES55 = 86 | CES80 = 94 |
| CES06 = 50 | CES31 = 92 | CES56 = 89 | CES81 = 89 |
| CES07 = 41 | CES32 = 97 | CES57 = 87 | CES82 = 97 |
| CES08 = 40 | CES33 = 89 | CES58 = 87 | CES83 = 96 |
| CES09 = 29 | CES34 = 98 | CES59 = 96 | CES84 = 94 |
| CES10 = 73 | CES35 = 98 | CES60 = 89 | CES85 = 84 |
| CES11 = 56 | CES36 = 74 | CES61 = 90 | CES86 = 90 |
| CES12 = 62 | CES37 = 97 | CES62 = 78 | CES87 = 92 |
| CES13 = 42 | CES38 = 75 | CES63 = 89 | CES88 = 95 |
| CES14 = 74 | CES39 = 97 | CES64 = 85 | CES89 = 90 |
| CES15 = 71 | CES40 = 97 | CES65 = 87 | CES90 = 92 |
| CES16 = 47 | CES41 = 91 | CES66 = 82 | CES91 = 69 |
| CES17 = 48 | CES42 = 99 | CES67 = 82 | CES92 = 81 |
| CES18 = 56 | CES43 = 97 | CES68 = 86 | CES93 = 88 |
| CES19 = 70 | CES44 = 99 | CES69 = 87 | CES94 = 86 |
| CES20 = 65 | CES45 = 97 | CES70 = 86 | CES95 = 83 |
| CES21 = 84 | CES46 = 94 | CES71 = 77 | CES96 = 94 |
| CES22 = 77 | CES47 = 90 | CES72 = 93 | CES97 = 97 |
| CES23 = 91 | CES48 = 83 | CES73 = 82 | CES98 = 94 |
| CES24 = 89 | CES49 = 95 | CES74 = 89 | CES99 = 92 |
| CES25 = 70 | CES50 = 94 | CES75 = 81 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)