

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: P1215008

Luminaire Tested: 22-ID2-30-CNV-L950-U

Issue Date: 12/4/2025

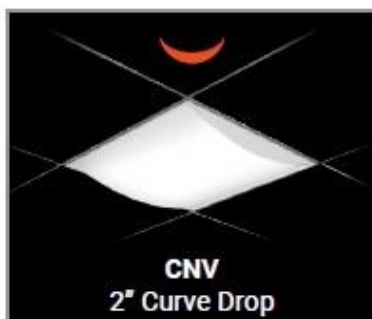
**Test Information**

Test Method: LM-79-2019  
Report Number: P1215008  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2506-458-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/4/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 22-ID2-30-CNV-L950-U  
Description: 2X2 IN DEPTH TROFFER WITH 2INCH CURVE DROP  
Light Source: 5000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

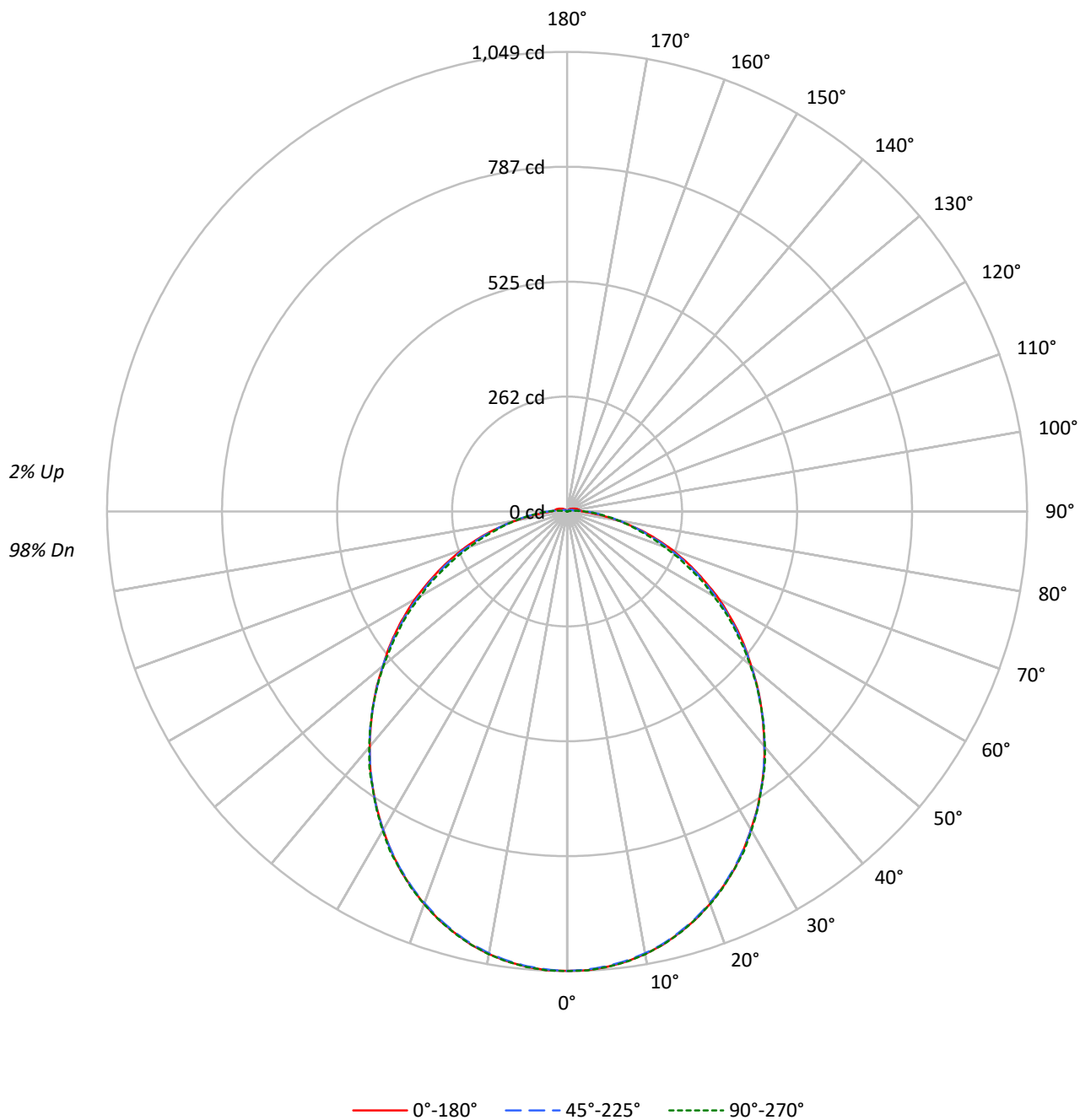
Lumens per Lamp: N/A  
Luminaire Lumens: 2822.6 lumens  
Efficiency: N/A  
Efficacy: 110.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.31  
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 2' x H: 0.16')  
CIE Type: Direct

Input Watts (W): 25.5  
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: 22-ID2-30-CNV-L950-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1215008

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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 | 110 | 110 | 110 | 105 | 105 | 105 | 100 | 100 | 100 |
| 1   | 108 | 103 | 99  | 95  | 105 | 101 | 97  | 93  | 96  | 93  | 90  | 92  | 89  | 87  | 88  | 86  | 84  |
| 2   | 98  | 90  | 83  | 77  | 96  | 88  | 82  | 76  | 84  | 79  | 74  | 81  | 76  | 72  | 77  | 74  | 70  |
| 3   | 90  | 79  | 71  | 65  | 87  | 77  | 70  | 64  | 74  | 68  | 62  | 71  | 66  | 61  | 68  | 64  | 60  |
| 4   | 82  | 70  | 62  | 55  | 80  | 69  | 61  | 54  | 66  | 59  | 53  | 64  | 57  | 52  | 61  | 56  | 52  |
| 5   | 76  | 63  | 54  | 47  | 74  | 62  | 53  | 47  | 59  | 52  | 46  | 57  | 51  | 46  | 55  | 50  | 45  |
| 6   | 70  | 57  | 48  | 42  | 68  | 56  | 47  | 41  | 54  | 46  | 41  | 52  | 45  | 40  | 50  | 44  | 40  |
| 7   | 65  | 52  | 43  | 37  | 63  | 51  | 42  | 37  | 49  | 42  | 36  | 47  | 41  | 36  | 46  | 40  | 35  |
| 8   | 61  | 47  | 39  | 33  | 59  | 46  | 38  | 33  | 45  | 38  | 32  | 43  | 37  | 32  | 42  | 36  | 32  |
| 9   | 57  | 43  | 35  | 30  | 55  | 43  | 35  | 30  | 41  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  |
| 10  | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 26  | 36  | 30  | 26  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2822 | 2822 | 2822 |
| 5°  | 2799 | 2787 | 2800 |
| 10° | 2765 | 2743 | 2766 |
| 15° | 2713 | 2686 | 2716 |
| 20° | 2652 | 2616 | 2654 |
| 25° | 2580 | 2536 | 2580 |
| 30° | 2491 | 2447 | 2497 |
| 35° | 2401 | 2351 | 2403 |
| 40° | 2305 | 2246 | 2311 |
| 45° | 2204 | 2135 | 2201 |
| 50° | 2094 | 2022 | 2083 |
| 55° | 2000 | 1902 | 1961 |
| 60° | 1893 | 1770 | 1821 |
| 65° | 1764 | 1637 | 1679 |
| 70° | 1635 | 1479 | 1523 |
| 75° | 1469 | 1308 | 1370 |
| 80° | 1245 | 1139 | 1264 |
| 85° | 1037 | 1008 | 1197 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2204 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 99.0   | 3.5       |
| 10°-20°   | 280.3  | 9.9       |
| 20°-30°   | 414.6  | 14.7      |
| 30°-40°   | 483.0  | 17.1      |
| 40°-50°   | 482.3  | 17.1      |
| 50°-60°   | 421.1  | 14.9      |
| 60°-70°   | 315.6  | 11.2      |
| 70°-80°   | 190.1  | 6.7       |
| 80°-90°   | 82.1   | 2.9       |
| 90°-100°  | 27.1   | 1.0       |
| 100°-110° | 12.5   | 0.4       |
| 110°-120° | 7.7    | 0.3       |
| 120°-130° | 4.2    | 0.1       |
| 130°-140° | 2.1    | 0.1       |
| 140°-150° | 0.7    | 0.0       |
| 150°-160° | 0.2    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 793.8  | 28.1      |
| 0°-40°    | 1276.8 | 45.2      |
| 0°-60°    | 2180.2 | 77.2      |
| 0°-90°    | 2768.0 | 98.1      |
| 90°-120°  | 47.3   | 1.7       |
| 90°-150°  | 54.3   | 1.9       |
| 90°-180°  | 55.0   | 1.9       |
| 0°-180°   | 2822.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1049 | 1049  | 1049 | 1049  | 1049 |      |
| 5°   | 1043 | 1043  | 1042 | 1043  | 1044 | 99   |
| 15°  | 995  | 994   | 993  | 995   | 996  | 280  |
| 25°  | 901  | 900   | 899  | 902   | 901  | 415  |
| 35°  | 772  | 772   | 772  | 774   | 772  | 483  |
| 45°  | 626  | 625   | 624  | 626   | 624  | 482  |
| 55°  | 475  | 473   | 471  | 469   | 466  | 425  |
| 65°  | 324  | 322   | 320  | 314   | 309  | 322  |
| 75°  | 184  | 182   | 179  | 176   | 171  | 194  |
| 85°  | 64   | 68    | 75   | 77    | 74   | 64   |
| 90°  | 34   | 38    | 43   | 43    | 41   | 20   |
| 95°  | 29   | 26    | 23   | 20    | 17   | 23   |
| 105° | 22   | 19    | 12   | 4     | 0    | 23   |
| 115° | 15   | 13    | 8    | 2     | 0    | 15   |
| 125° | 10   | 8     | 5    | 0     | 0    | 9    |
| 135° | 6    | 5     | 2    | 0     | 0    | 5    |
| 145° | 2    | 2     | 1    | 0     | 0    | 2    |
| 155° | 1    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    | 0    |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1048.7 | 1048.7 | 1048.7 | 1048.7 | 1048.7 |
| 2.5°   | 1048.0 | 1047.3 | 1046.6 | 1047.3 | 1048.4 |
| 5°     | 1043.4 | 1042.7 | 1042.0 | 1043.4 | 1043.8 |
| 7.5°   | 1036.3 | 1035.6 | 1034.5 | 1035.6 | 1036.7 |
| 10°    | 1026.0 | 1024.9 | 1023.9 | 1024.9 | 1026.4 |
| 12.5°  | 1012.5 | 1012.2 | 1010.7 | 1011.4 | 1012.5 |
| 15°    | 994.8  | 994.4  | 993.3  | 994.8  | 995.8  |
| 17.5°  | 975.9  | 974.2  | 973.8  | 974.9  | 975.9  |
| 20°    | 952.9  | 952.2  | 951.1  | 952.9  | 953.9  |
| 22.5°  | 928.0  | 928.0  | 927.0  | 928.0  | 929.1  |
| 25°    | 901.4  | 899.6  | 899.3  | 901.7  | 901.4  |
| 27.5°  | 870.9  | 871.6  | 870.5  | 871.2  | 874.1  |
| 30°    | 838.6  | 838.9  | 838.9  | 840.3  | 840.7  |
| 32.5°  | 806.2  | 806.6  | 807.0  | 807.3  | 807.7  |
| 35°    | 771.8  | 771.5  | 772.2  | 773.6  | 772.5  |
| 37.5°  | 737.4  | 736.3  | 736.7  | 737.0  | 739.9  |
| 40°    | 700.1  | 699.7  | 700.1  | 702.2  | 701.9  |
| 42.5°  | 662.1  | 662.1  | 663.9  | 664.6  | 663.5  |
| 45°    | 625.5  | 625.2  | 624.5  | 626.3  | 624.5  |
| 47.5°  | 587.6  | 586.5  | 586.1  | 587.6  | 585.8  |
| 50°    | 547.8  | 548.9  | 548.1  | 547.1  | 545.0  |
| 52.5°  | 512.3  | 511.2  | 509.8  | 508.4  | 505.2  |
| 55°    | 475.0  | 473.2  | 470.8  | 469.0  | 465.8  |
| 57.5°  | 437.0  | 434.9  | 432.4  | 429.2  | 427.8  |
| 60°    | 400.5  | 396.9  | 393.4  | 390.9  | 385.2  |
| 62.5°  | 361.1  | 360.3  | 355.7  | 352.9  | 349.7  |
| 65°    | 324.5  | 322.0  | 319.5  | 313.8  | 308.9  |
| 67.5°  | 288.3  | 287.2  | 281.9  | 277.6  | 273.0  |
| 70°    | 253.5  | 249.9  | 246.4  | 242.1  | 236.1  |
| 72.5°  | 218.3  | 216.2  | 211.9  | 207.3  | 202.7  |
| 75°    | 183.5  | 182.1  | 178.9  | 176.4  | 171.1  |
| 77.5°  | 148.4  | 148.4  | 148.8  | 147.7  | 144.1  |
| 80°    | 116.8  | 118.9  | 120.7  | 121.4  | 118.6  |
| 82.5°  | 88.8   | 90.9   | 96.9   | 98.7   | 95.1   |
| 85°    | 64.3   | 67.8   | 74.9   | 76.7   | 74.2   |
| 87.5°  | 45.8   | 51.1   | 56.8   | 58.9   | 56.4   |
| 90°    | 34.1   | 38.3   | 42.6   | 43.3   | 40.8   |
| 92.5°  | 31.2   | 30.2   | 31.2   | 30.5   | 28.0   |
| 95°    | 29.1   | 25.9   | 23.1   | 20.2   | 17.4   |
| 97.5°  | 27.3   | 24.1   | 17.4   | 12.4   | 9.9    |
| 100°   | 25.6   | 22.4   | 14.6   | 7.1    | 3.9    |
| 102.5° | 23.8   | 20.9   | 13.5   | 4.6    | 0.7    |
| 105°   | 22.0   | 19.2   | 12.1   | 3.9    | 0.4    |
| 107.5° | 20.2   | 17.8   | 11.0   | 3.2    | 0.4    |
| 110°   | 18.5   | 16.3   | 9.9    | 2.8    | 0.4    |

TEST NUMBER: P1215008

CATALOG NUMBER: 22-ID2-30-CNV-L950-U

**CANDELA DISTRIBUTION (continued):**

|        | 0°   | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|-----|-------|-----|
| 112.5° | 17.0 | 14.9  | 8.9 | 2.1   | 0.0 |
| 115°   | 15.3 | 13.1  | 8.2 | 1.8   | 0.0 |
| 117.5° | 13.8 | 12.1  | 7.1 | 1.4   | 0.0 |
| 120°   | 12.4 | 10.7  | 6.4 | 1.1   | 0.0 |
| 122.5° | 11.0 | 9.6   | 5.3 | 0.7   | 0.0 |
| 125°   | 9.9  | 8.5   | 4.6 | 0.4   | 0.0 |
| 127.5° | 8.5  | 7.5   | 3.9 | 0.4   | 0.0 |
| 130°   | 7.5  | 6.4   | 3.6 | 0.4   | 0.4 |
| 132.5° | 6.7  | 5.7   | 2.8 | 0.4   | 0.4 |
| 135°   | 5.7  | 4.6   | 2.1 | 0.4   | 0.4 |
| 137.5° | 5.0  | 3.9   | 1.8 | 0.4   | 0.4 |
| 140°   | 3.9  | 3.2   | 1.4 | 0.4   | 0.4 |
| 142.5° | 3.2  | 2.5   | 1.1 | 0.4   | 0.4 |
| 145°   | 2.5  | 2.1   | 0.7 | 0.4   | 0.4 |
| 147.5° | 1.8  | 1.4   | 0.4 | 0.4   | 0.4 |
| 150°   | 1.4  | 1.1   | 0.4 | 0.4   | 0.4 |
| 152.5° | 1.1  | 0.7   | 0.4 | 0.4   | 0.4 |
| 155°   | 0.7  | 0.4   | 0.4 | 0.4   | 0.4 |
| 157.5° | 0.4  | 0.4   | 0.4 | 0.4   | 0.4 |
| 160°   | 0.4  | 0.4   | 0.4 | 0.4   | 0.4 |
| 162.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 165°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 167.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 170°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 172.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 175°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 177.5° | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |
| 180°   | 0.0  | 0.0   | 0.0 | 0.0   | 0.0 |

TEST NUMBER: P1215008

CATALOG NUMBER: 22-ID2-30-CNV-L950-U

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 14.07            | 15.65 | 14.46 | 16.00 | 16.37 | 13.96          | 15.54 | 14.36 | 15.90 | 16.26 |
|                 | 3H   | 15.80            | 17.23 | 16.21 | 17.60 | 18.01 | 15.61          | 17.04 | 16.02 | 17.41 | 17.81 |
|                 | 4H   | 16.46            | 17.81 | 16.89 | 18.20 | 18.62 | 16.23          | 17.58 | 16.66 | 17.96 | 18.39 |
|                 | 6H   | 16.94            | 18.20 | 17.39 | 18.60 | 19.04 | 16.74          | 17.99 | 17.18 | 18.39 | 18.83 |
|                 | 8H   | 17.11            | 18.31 | 17.56 | 18.73 | 19.18 | 16.94          | 18.13 | 17.39 | 18.56 | 19.01 |
|                 | 12H  | 17.24            | 18.38 | 17.70 | 18.80 | 19.28 | 17.11          | 18.26 | 17.57 | 18.68 | 19.15 |
| 4H              | 2H   | 14.63            | 15.98 | 15.06 | 16.37 | 16.79 | 14.55          | 15.89 | 14.98 | 16.28 | 16.71 |
|                 | 3H   | 16.57            | 17.71 | 17.01 | 18.14 | 18.59 | 16.41          | 17.54 | 16.85 | 17.98 | 18.42 |
|                 | 4H   | 17.36            | 18.39 | 17.82 | 18.84 | 19.32 | 17.16          | 18.19 | 17.62 | 18.64 | 19.12 |
|                 | 6H   | 17.97            | 18.87 | 18.46 | 19.35 | 19.85 | 17.80          | 18.71 | 18.29 | 19.18 | 19.68 |
|                 | 8H   | 18.19            | 19.04 | 18.68 | 19.51 | 20.02 | 18.06          | 18.91 | 18.55 | 19.39 | 19.90 |
|                 | 12H  | 18.37            | 19.13 | 18.88 | 19.64 | 20.15 | 18.30          | 19.06 | 18.81 | 19.57 | 20.09 |
| 8H              | 4H   | 17.63            | 18.48 | 18.12 | 18.96 | 19.47 | 17.45          | 18.30 | 17.95 | 18.78 | 19.29 |
|                 | 6H   | 18.37            | 19.08 | 18.89 | 19.60 | 20.12 | 18.24          | 18.94 | 18.76 | 19.47 | 19.99 |
|                 | 8H   | 18.67            | 19.31 | 19.21 | 19.84 | 20.37 | 18.59          | 19.23 | 19.13 | 19.77 | 20.30 |
|                 | 12H  | 18.93            | 19.50 | 19.47 | 20.02 | 20.63 | 18.93          | 19.50 | 19.47 | 20.02 | 20.63 |
| 12H             | 4H   | 17.66            | 18.43 | 18.18 | 18.94 | 19.45 | 17.49          | 18.25 | 18.00 | 18.76 | 19.28 |
|                 | 6H   | 18.43            | 19.07 | 18.97 | 19.61 | 20.14 | 18.30          | 18.94 | 18.84 | 19.48 | 20.01 |
|                 | 8H   | 18.79            | 19.36 | 19.33 | 19.88 | 20.48 | 18.72          | 19.28 | 19.26 | 19.81 | 20.41 |



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

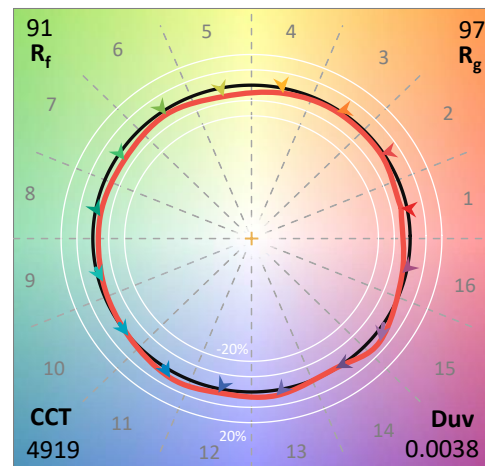
### Test Information

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  
 Rf: 90.8  
 Rg: 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

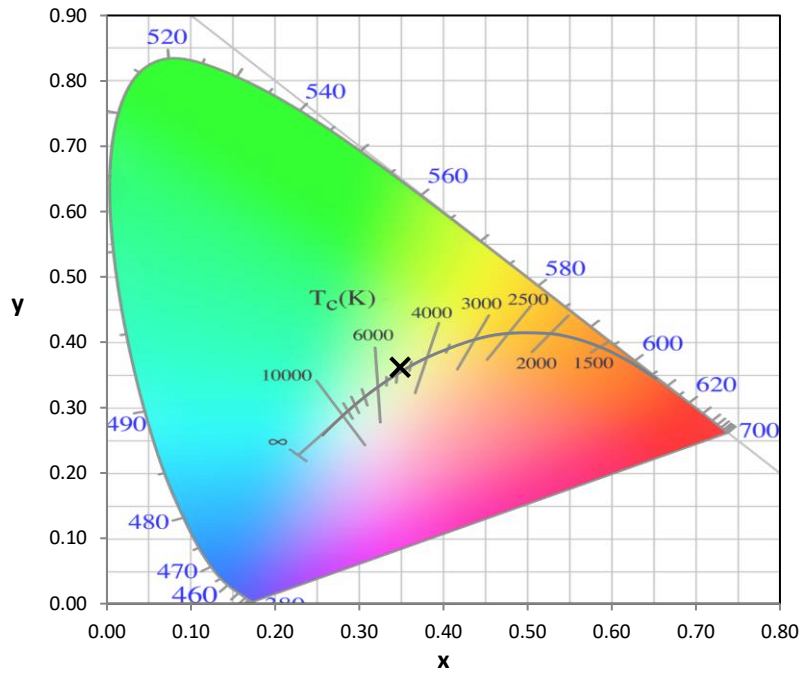
Stabilization Time: M  
 Operation Time: 1H 0M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-458-13

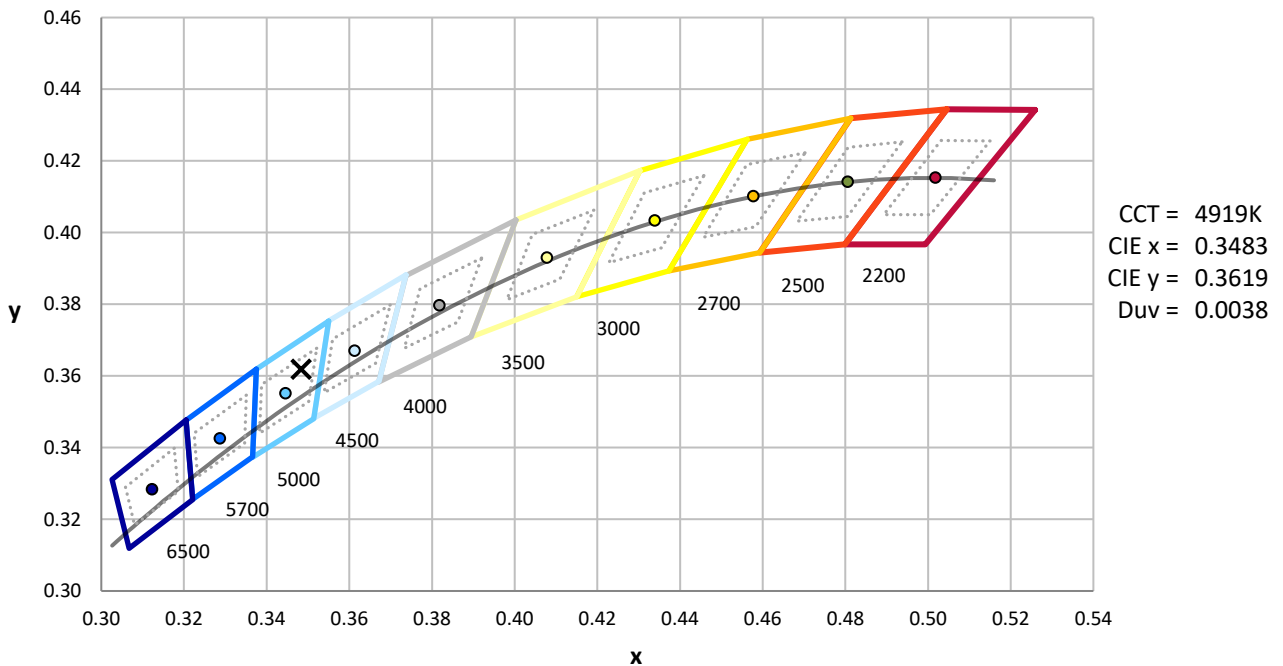
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 6/16/2025        | 12/16/2025           |
| Power Meter                    | XITRON INXT2011004    | 1/21/2025        | 1/21/2026            |
| AC Power Source                | CHROMA 61603 IN0063   | 10/22/2024       | 10/22/2025           |
| DC Power Source                | AGILENT E3634A IN0208 | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | ONSET IN0085          | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | ONSET IN0046          | 10/22/2024       | 10/22/2025           |

REPORT NUMBER: SP1-2506-458-13

**CIE 1931 Chromaticity Diagram**



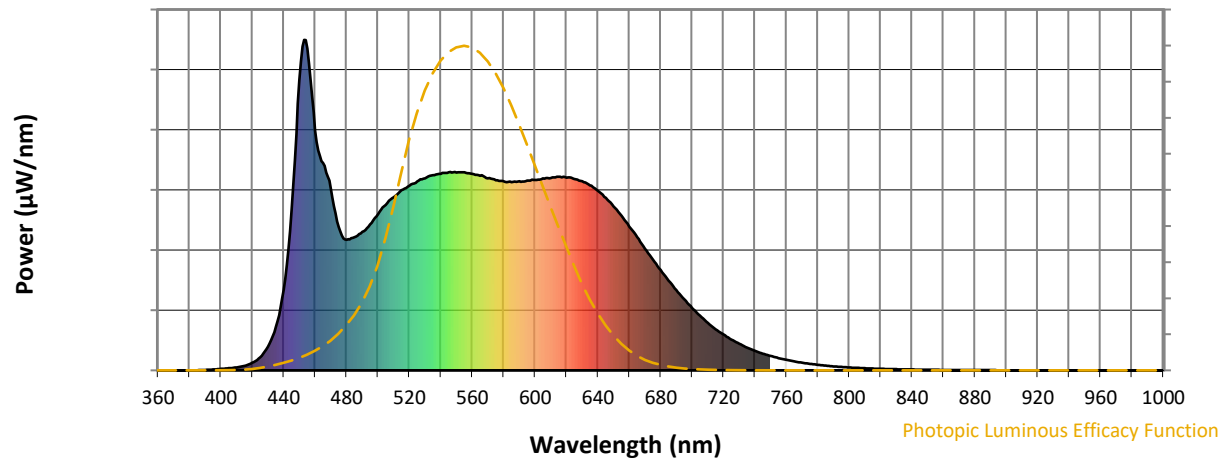
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

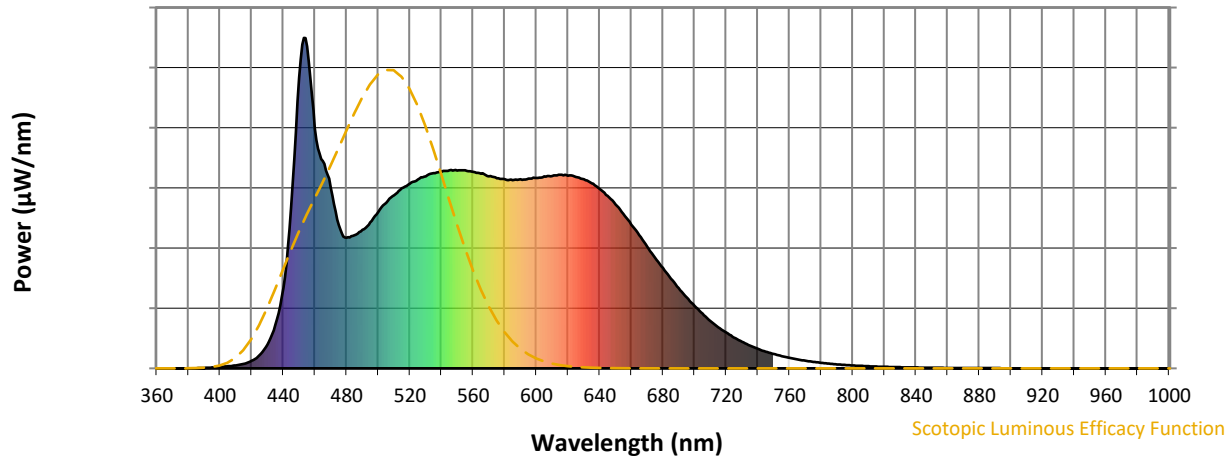


### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (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            |        |                          |               |

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### Scotopic Flux vs. Wavelength



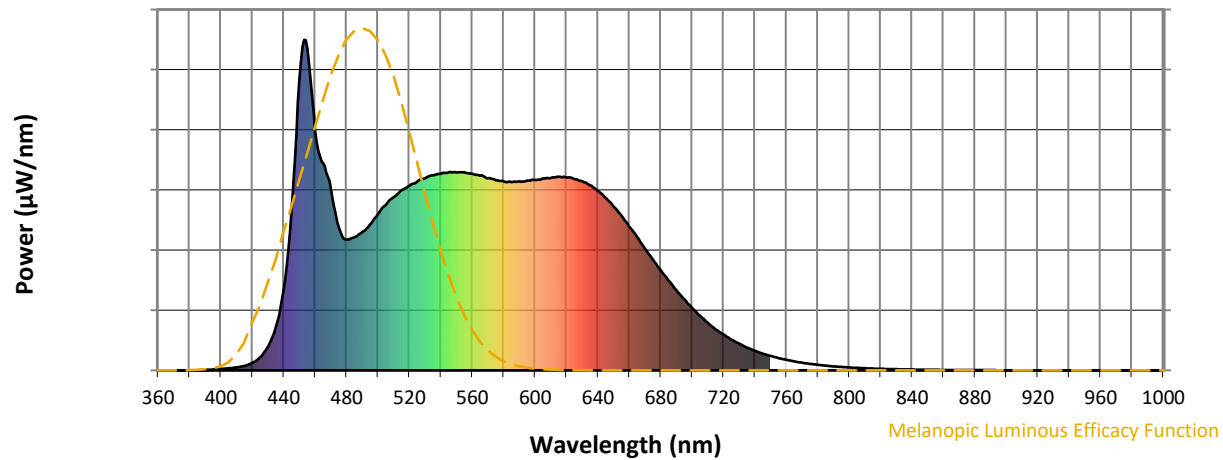
Scotopic Lumens: NR

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               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.55

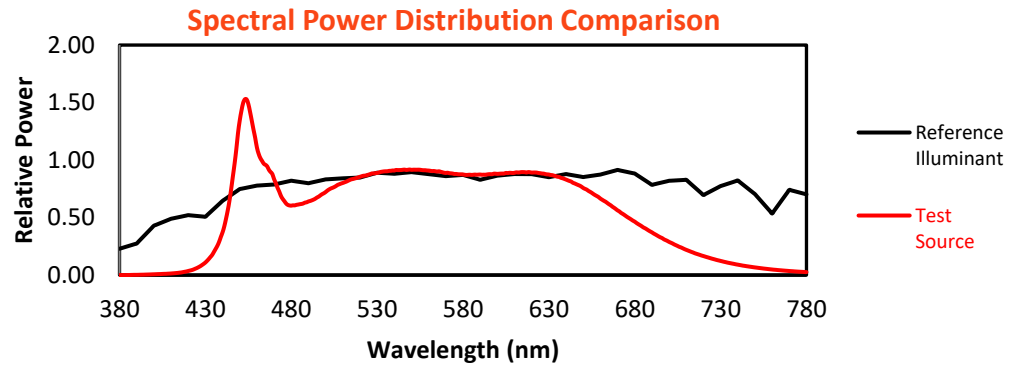
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm)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

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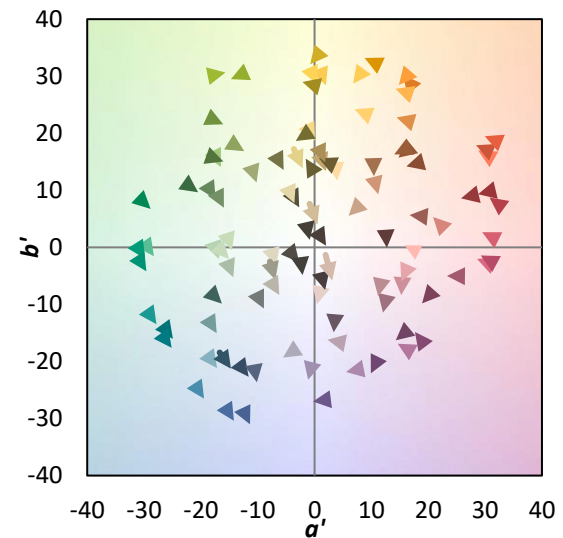
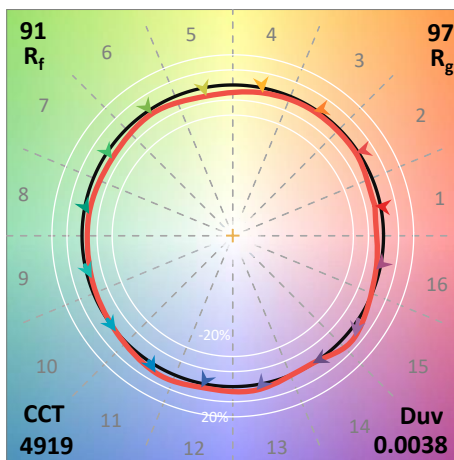
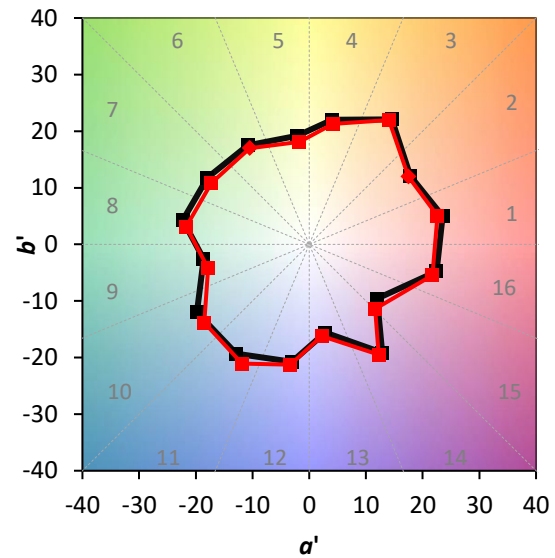
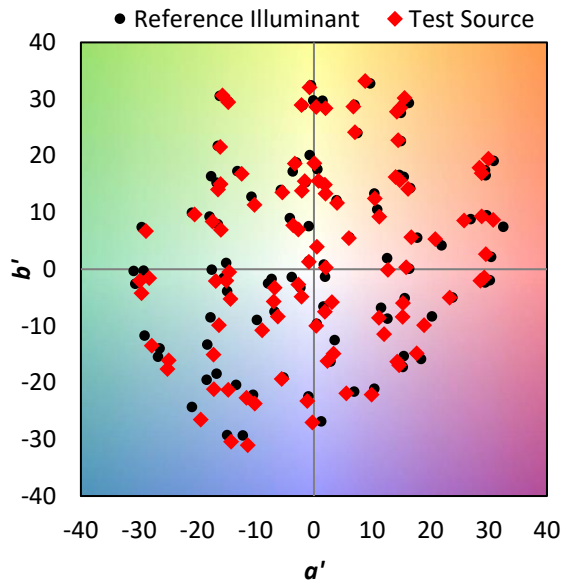
TM-30-18

### Summary

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



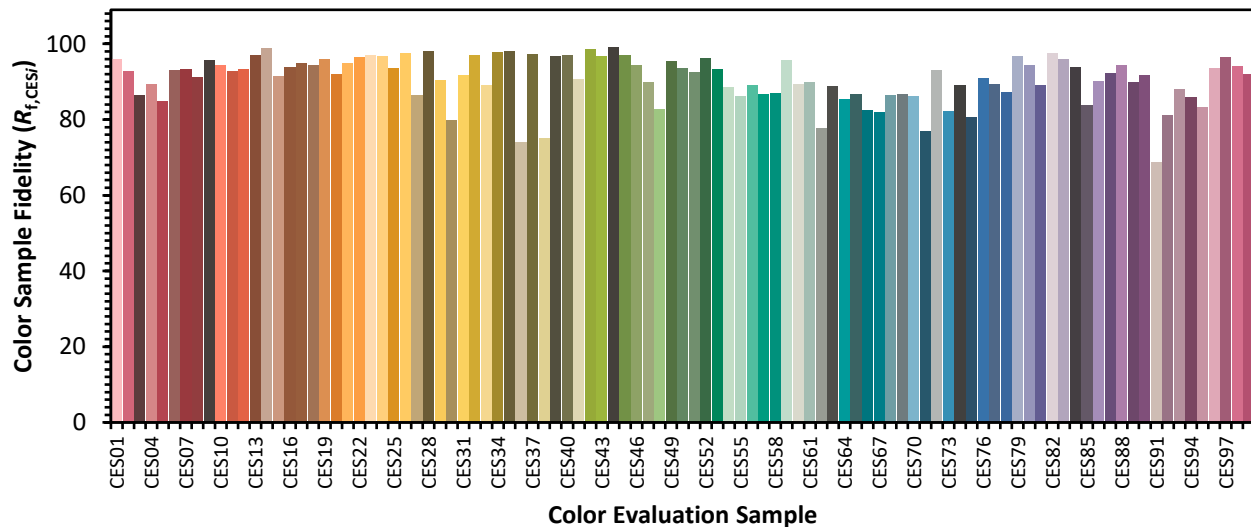
### Color Vector Graphics

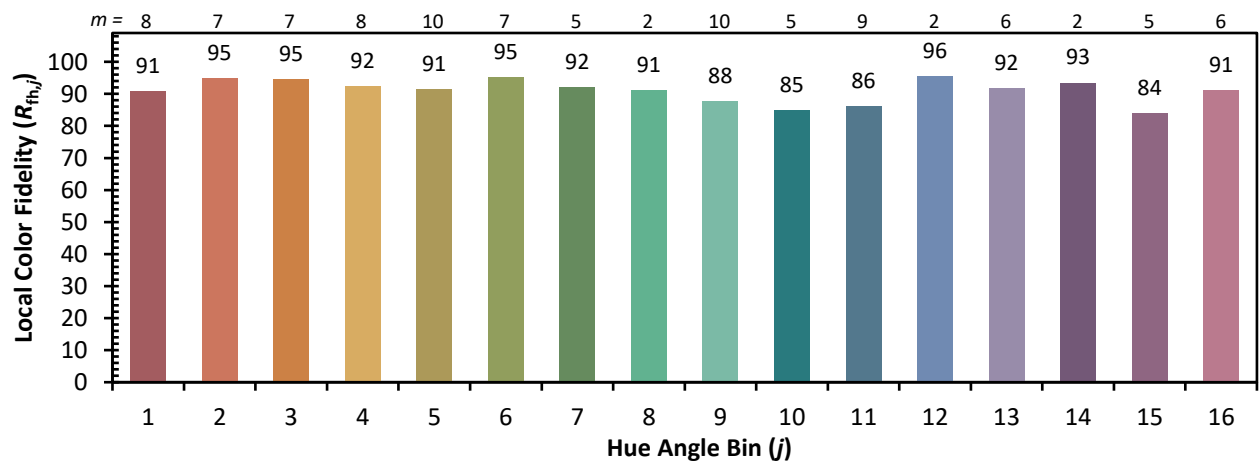
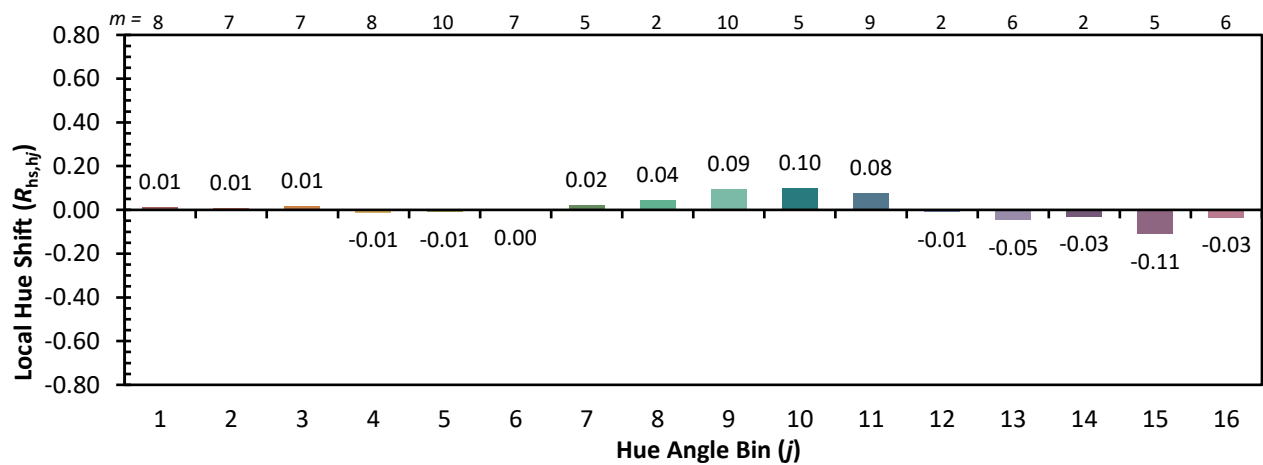
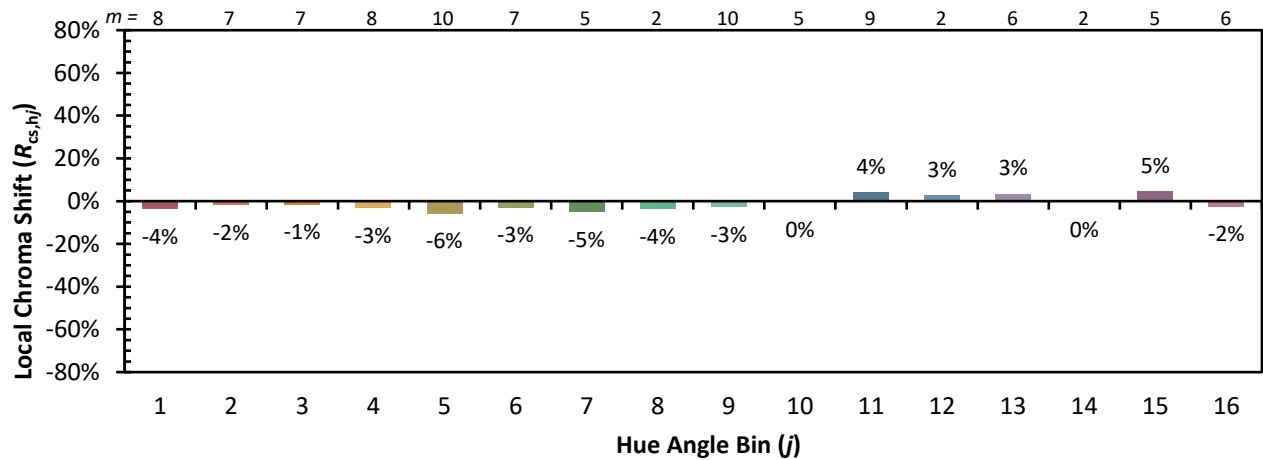




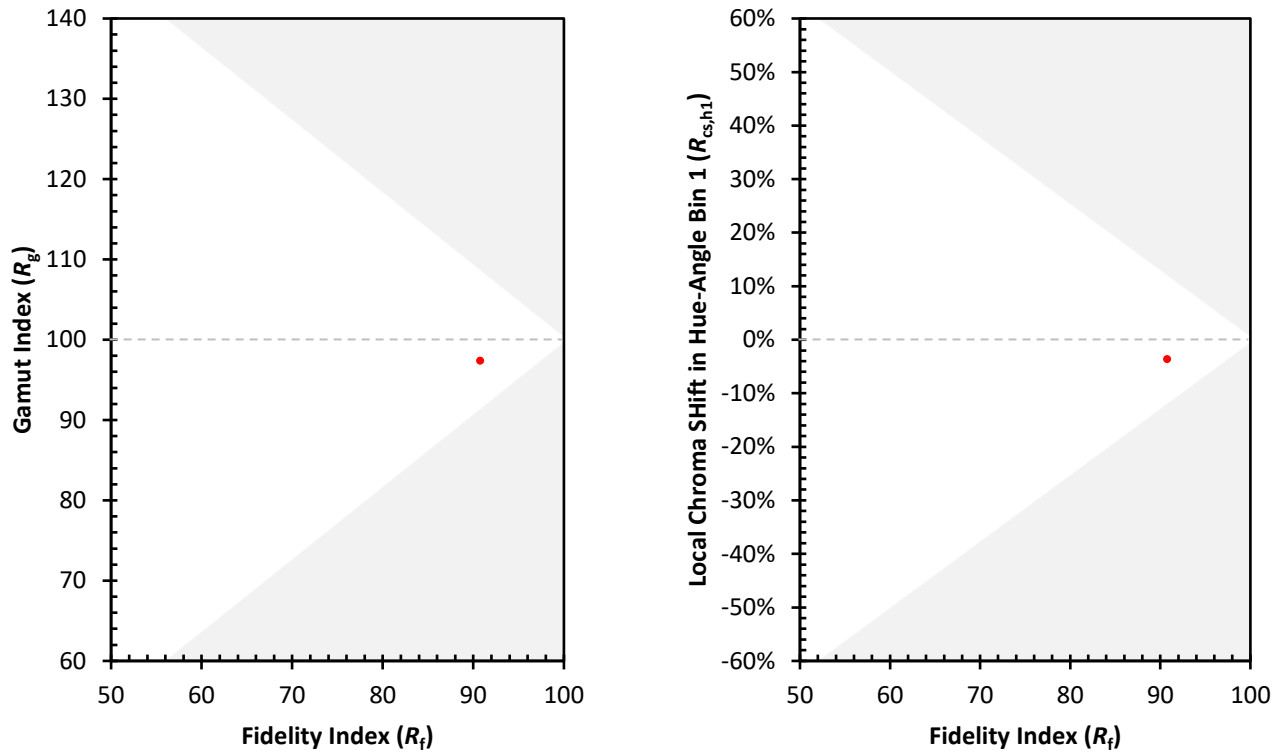
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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)