

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: P1214957

Luminaire Tested: 22-ID2-55-CNC-L930-U

Issue Date: 12/4/2025

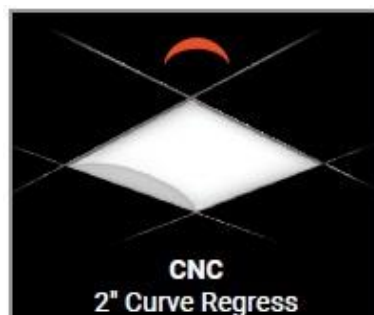
**Test Information**

Test Method: LM-79-2019  
Report Number: P1214957  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2506-458-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/4/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 22-ID2-55-CNC-L930-U  
Description: 2X2 IN DEPTH TROFFER WITH 2INCH CURVE REGRESSED  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

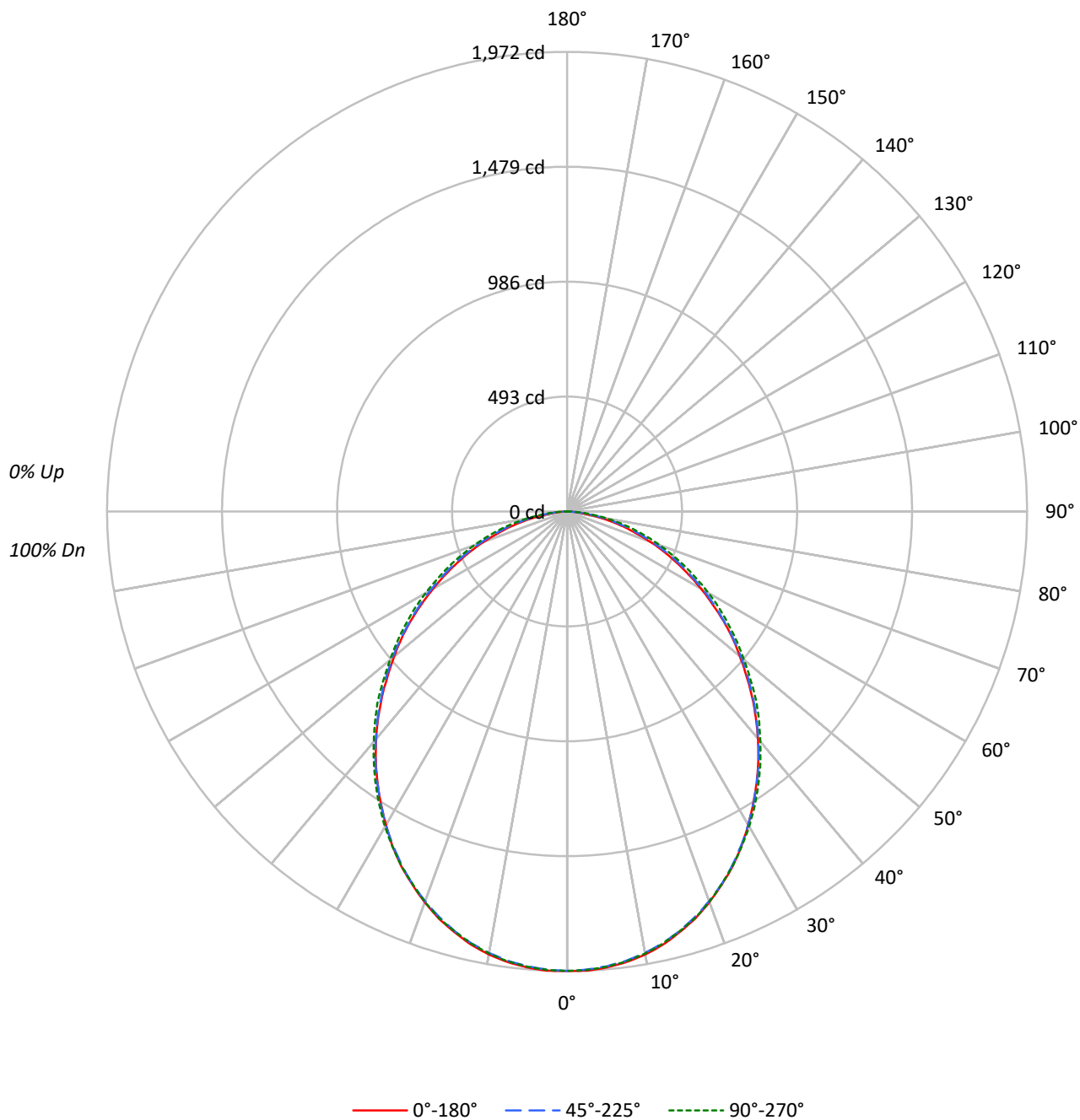
Lumens per Lamp: N/A  
Luminaire Lumens: 4870.5 lumens  
Efficiency: N/A  
Efficacy: 99.8 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.18 / 1.28  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 48.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P1214957  
CATALOG NUMBER: 22-ID2-55-CNC-L930-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1214957

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

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 100 |
| 1   | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 95  | 98  | 95  | 92  |  | 94  | 92  | 90  |  | 85  |
| 2   | 100 | 92  | 85  | 80  | 97  | 90  | 84  | 79  | 87  | 81  | 77  |  | 83  | 79  | 75  |  | 72  |
| 3   | 91  | 81  | 73  | 67  | 89  | 80  | 72  | 66  | 77  | 70  | 65  |  | 74  | 69  | 64  |  | 61  |
| 4   | 84  | 72  | 64  | 57  | 82  | 71  | 63  | 57  | 68  | 61  | 56  |  | 66  | 60  | 55  |  | 52  |
| 5   | 77  | 65  | 56  | 50  | 75  | 64  | 55  | 49  | 62  | 54  | 49  |  | 60  | 53  | 48  |  | 46  |
| 6   | 72  | 59  | 50  | 44  | 70  | 58  | 49  | 43  | 56  | 48  | 43  |  | 54  | 48  | 43  |  | 40  |
| 7   | 66  | 53  | 45  | 39  | 65  | 52  | 44  | 38  | 51  | 44  | 38  |  | 49  | 43  | 38  |  | 36  |
| 8   | 62  | 49  | 40  | 35  | 60  | 48  | 40  | 35  | 47  | 39  | 34  |  | 45  | 39  | 34  |  | 32  |
| 9   | 58  | 45  | 37  | 31  | 57  | 44  | 36  | 31  | 43  | 36  | 31  |  | 42  | 36  | 31  |  | 29  |
| 10  | 54  | 41  | 34  | 28  | 53  | 41  | 33  | 28  | 40  | 33  | 28  |  | 39  | 33  | 28  |  | 26  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5304 | 5304 | 5304 |
| 5°  | 5304 | 5291 | 5296 |
| 10° | 5275 | 5256 | 5263 |
| 15° | 5205 | 5191 | 5195 |
| 20° | 5109 | 5095 | 5104 |
| 25° | 4989 | 4976 | 4985 |
| 30° | 4825 | 4827 | 4851 |
| 35° | 4657 | 4659 | 4698 |
| 40° | 4474 | 4478 | 4528 |
| 45° | 4267 | 4286 | 4361 |
| 50° | 4048 | 4085 | 4147 |
| 55° | 3837 | 3857 | 3962 |
| 60° | 3568 | 3638 | 3768 |
| 65° | 3291 | 3390 | 3559 |
| 70° | 2981 | 3108 | 3332 |
| 75° | 2582 | 2794 | 3064 |
| 80° | 2033 | 2390 | 2686 |
| 85° | 1263 | 1683 | 2007 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4361 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 186.0  | 3.8       |
| 10°-20°   | 525.4  | 10.8      |
| 20°-30°   | 771.9  | 15.8      |
| 30°-40°   | 888.9  | 18.2      |
| 40°-50°   | 871.9  | 17.9      |
| 50°-60°   | 740.4  | 15.2      |
| 60°-70°   | 530.7  | 10.9      |
| 70°-80°   | 287.4  | 5.9       |
| 80°-90°   | 67.9   | 1.4       |
| 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°    | 1483.3 | 30.5      |
| 0°-40°    | 2372.2 | 48.7      |
| 0°-60°    | 3984.5 | 81.8      |
| 0°-90°    | 4870.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4870.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1971 | 1971  | 1971 | 1971  | 1971 |      |
| 5°  | 1964 | 1962  | 1959 | 1959  | 1961 | 186  |
| 15° | 1868 | 1867  | 1863 | 1864  | 1865 | 527  |
| 25° | 1680 | 1675  | 1676 | 1681  | 1679 | 772  |
| 35° | 1418 | 1418  | 1418 | 1428  | 1430 | 886  |
| 45° | 1121 | 1121  | 1126 | 1142  | 1146 | 864  |
| 55° | 818  | 817   | 822  | 838   | 844  | 730  |
| 65° | 517  | 521   | 532  | 551   | 559  | 513  |
| 75° | 248  | 254   | 269  | 287   | 295  | 264  |
| 85° | 41   | 45    | 54   | 62    | 65   | 55   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1971.2 | 1971.2 | 1971.2 | 1971.2 | 1971.2 |
| 2.5°  | 1972.4 | 1969.3 | 1967.5 | 1968.1 | 1968.7 |
| 5°    | 1963.7 | 1961.9 | 1958.8 | 1959.4 | 1960.6 |
| 7.5°  | 1950.1 | 1947.6 | 1944.5 | 1945.2 | 1947.0 |
| 10°   | 1930.3 | 1927.2 | 1923.5 | 1924.1 | 1926.0 |
| 12.5° | 1903.7 | 1900.6 | 1897.5 | 1896.9 | 1898.7 |
| 15°   | 1868.4 | 1867.2 | 1863.4 | 1864.1 | 1864.7 |
| 17.5° | 1830.6 | 1826.3 | 1824.4 | 1825.7 | 1828.2 |
| 20°   | 1784.2 | 1779.9 | 1779.3 | 1780.5 | 1782.3 |
| 22.5° | 1733.4 | 1729.7 | 1731.0 | 1732.2 | 1731.0 |
| 25°   | 1680.2 | 1674.6 | 1675.9 | 1680.8 | 1679.0 |
| 27.5° | 1619.5 | 1617.7 | 1615.8 | 1622.0 | 1621.4 |
| 30°   | 1552.7 | 1553.3 | 1553.3 | 1561.3 | 1561.3 |
| 32.5° | 1485.2 | 1486.4 | 1486.4 | 1495.7 | 1496.9 |
| 35°   | 1417.7 | 1417.7 | 1418.3 | 1427.6 | 1430.1 |
| 37.5° | 1346.5 | 1347.7 | 1349.6 | 1356.4 | 1360.7 |
| 40°   | 1273.5 | 1273.5 | 1274.7 | 1287.1 | 1288.9 |
| 42.5° | 1197.3 | 1198.5 | 1201.6 | 1213.4 | 1218.4 |
| 45°   | 1121.2 | 1121.2 | 1126.1 | 1141.6 | 1145.9 |
| 47.5° | 1041.9 | 1046.3 | 1051.2 | 1066.7 | 1066.1 |
| 50°   | 967.0  | 972.6  | 975.7  | 988.7  | 990.5  |
| 52.5° | 894.6  | 894.6  | 898.9  | 914.4  | 918.1  |
| 55°   | 817.8  | 817.2  | 822.1  | 837.6  | 844.4  |
| 57.5° | 737.9  | 741.7  | 748.5  | 766.4  | 773.9  |
| 60°   | 663.0  | 666.1  | 676.0  | 692.8  | 700.2  |
| 62.5° | 588.7  | 593.7  | 601.1  | 620.3  | 626.5  |
| 65°   | 516.9  | 520.7  | 532.4  | 551.0  | 559.0  |
| 67.5° | 448.2  | 450.7  | 462.5  | 481.6  | 488.5  |
| 70°   | 378.9  | 383.8  | 395.0  | 414.2  | 423.5  |
| 72.5° | 309.5  | 317.0  | 331.2  | 350.4  | 358.5  |
| 75°   | 248.3  | 253.8  | 268.7  | 287.3  | 294.7  |
| 77.5° | 187.6  | 195.0  | 210.5  | 226.0  | 234.6  |
| 80°   | 131.2  | 140.5  | 154.2  | 167.8  | 173.3  |
| 82.5° | 82.3   | 90.4   | 102.8  | 112.7  | 115.8  |
| 85°   | 40.9   | 45.2   | 54.5   | 62.5   | 65.0   |
| 87.5° | 13.6   | 14.9   | 17.3   | 21.0   | 22.3   |
| 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 | 16.49            | 18.08 | 16.86 | 18.40 | 18.71 | 16.74          | 18.33 | 17.11 | 18.65 | 18.96 |
|                 | 3H   | 18.06            | 19.49 | 18.43 | 19.81 | 20.18 | 18.44          | 19.87 | 18.81 | 20.19 | 20.56 |
|                 | 4H   | 18.58            | 19.93 | 18.98 | 20.28 | 20.66 | 19.07          | 20.42 | 19.47 | 20.77 | 21.14 |
|                 | 6H   | 18.92            | 20.16 | 19.33 | 20.53 | 20.92 | 19.53          | 20.78 | 19.94 | 21.14 | 21.53 |
|                 | 8H   | 18.99            | 20.18 | 19.42 | 20.57 | 20.97 | 19.66          | 20.85 | 20.09 | 21.24 | 21.64 |
|                 | 12H  | 19.02            | 20.16 | 19.45 | 20.54 | 20.97 | 19.74          | 20.88 | 20.17 | 21.26 | 21.69 |
| 4H              | 2H   | 17.08            | 18.43 | 17.48 | 18.78 | 19.15 | 17.28          | 18.63 | 17.68 | 18.98 | 19.35 |
|                 | 3H   | 18.86            | 19.98 | 19.27 | 20.38 | 20.78 | 19.19          | 20.32 | 19.60 | 20.72 | 21.12 |
|                 | 4H   | 19.50            | 20.51 | 19.93 | 20.93 | 21.36 | 19.96          | 20.97 | 20.39 | 21.39 | 21.82 |
|                 | 6H   | 19.94            | 20.82 | 20.39 | 21.27 | 21.72 | 20.54          | 21.43 | 21.00 | 21.87 | 22.33 |
|                 | 8H   | 20.05            | 20.88 | 20.51 | 21.32 | 21.78 | 20.72          | 21.55 | 21.18 | 21.99 | 22.45 |
|                 | 12H  | 20.10            | 20.84 | 20.58 | 21.32 | 21.79 | 20.83          | 21.57 | 21.31 | 22.05 | 22.52 |
| 8H              | 4H   | 19.79            | 20.61 | 20.25 | 21.06 | 21.52 | 20.20          | 21.02 | 20.66 | 21.47 | 21.93 |
|                 | 6H   | 20.33            | 21.01 | 20.82 | 21.50 | 21.98 | 20.89          | 21.57 | 21.38 | 22.06 | 22.54 |
|                 | 8H   | 20.49            | 21.10 | 21.00 | 21.61 | 22.09 | 21.13          | 21.74 | 21.64 | 22.25 | 22.74 |
|                 | 12H  | 20.58            | 21.12 | 21.09 | 21.61 | 22.18 | 21.30          | 21.84 | 21.81 | 22.33 | 22.90 |
| 12H             | 4H   | 19.82            | 20.56 | 20.30 | 21.03 | 21.50 | 20.21          | 20.95 | 20.69 | 21.43 | 21.90 |
|                 | 6H   | 20.37            | 20.99 | 20.88 | 21.50 | 21.98 | 20.91          | 21.53 | 21.43 | 22.04 | 22.52 |
|                 | 8H   | 20.58            | 21.12 | 21.09 | 21.61 | 22.18 | 21.20          | 21.75 | 21.71 | 22.24 | 22.80 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-9

Test Date: 08/26/2025

Luminaire Tested: 22ID2-55-CFR1-L930-U

Data in this report applies to families of products including 22ID2-55-CFR1-L930-U



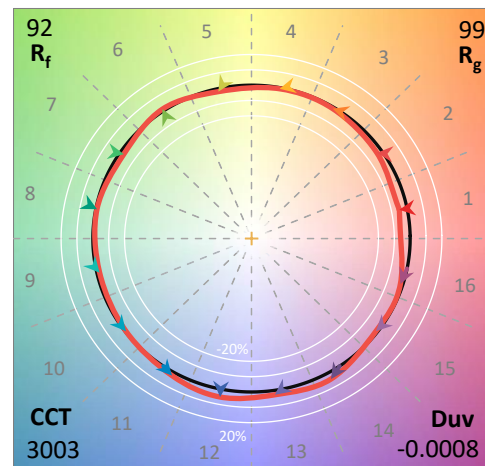
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 08/27/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Corelite  
 Catalog Number: **22ID2-55-CFR1-L930-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 3000K 90CRI

### Spectral Parameters

CCT (K): 3003  
 CIE  $u'$ : 0.2507  
 CIE  $v'$ : 0.5202  
 Duv: -0.0008  
 CIE x: 0.4356  
 CIE y: 0.4017  
 CIE z: 0.1627  
 Peak Wavelength (nm): 618  
 Dominant Wavelength (nm): 583  
 Purity: 51.31044  
 Rf: 91.9  
 Rg: 99.2

CRI (Ra): 93.2  
 R1: 93.7  
 R2: 97.2  
 R3: 98.7  
 R4: 93.5  
 R5: 93.6  
 R6: 96.3  
 R7: 91.5  
 R8: 81.5  
 R9: 59.0  
 R10: 92.7  
 R11: 94.9  
 R12: 82.6  
 R13: 94.8  
 R14: 99.1  
 R15: 89.5



### Test Conditions

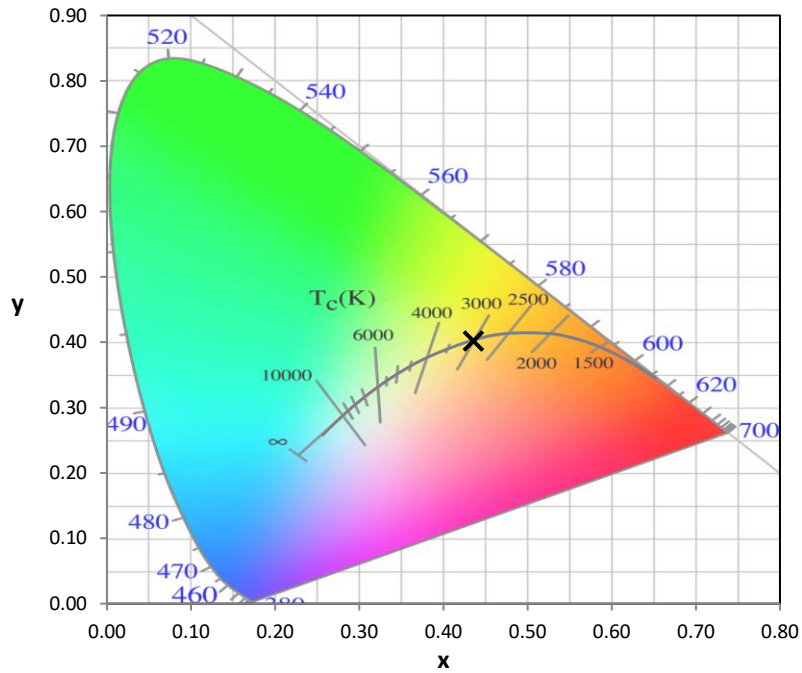
Stabilization Time: 32M  
 Operation Time: 1H 32M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2506-458-9

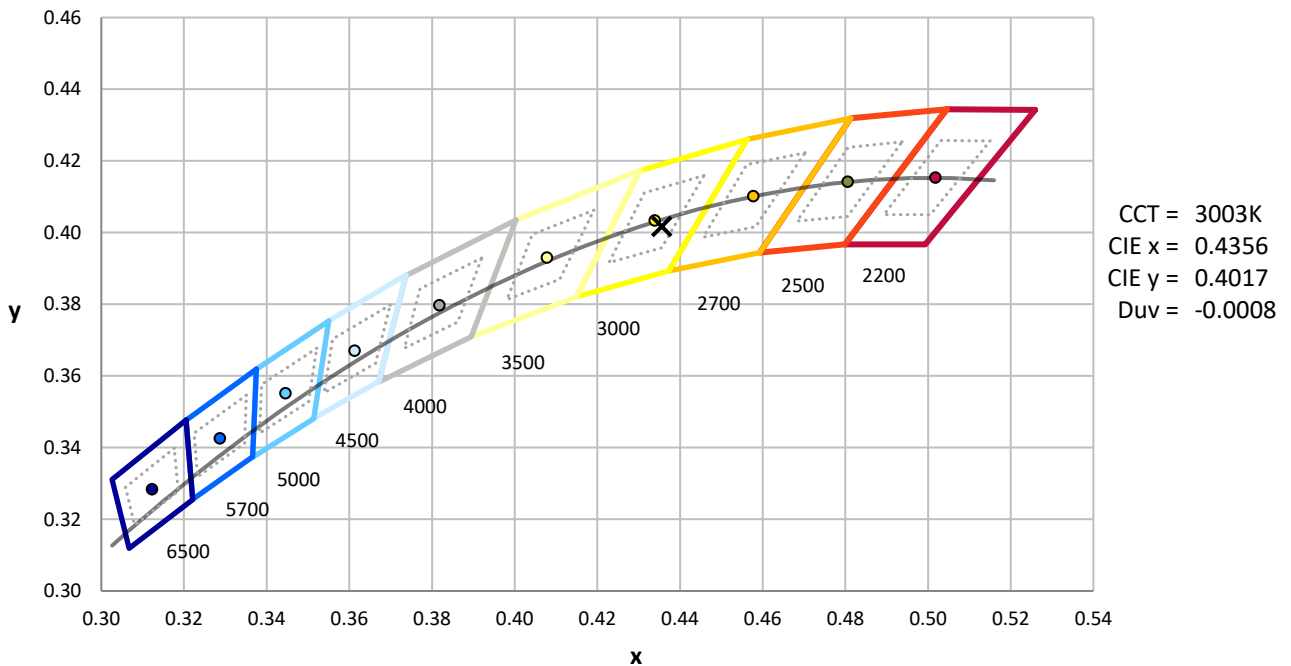
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



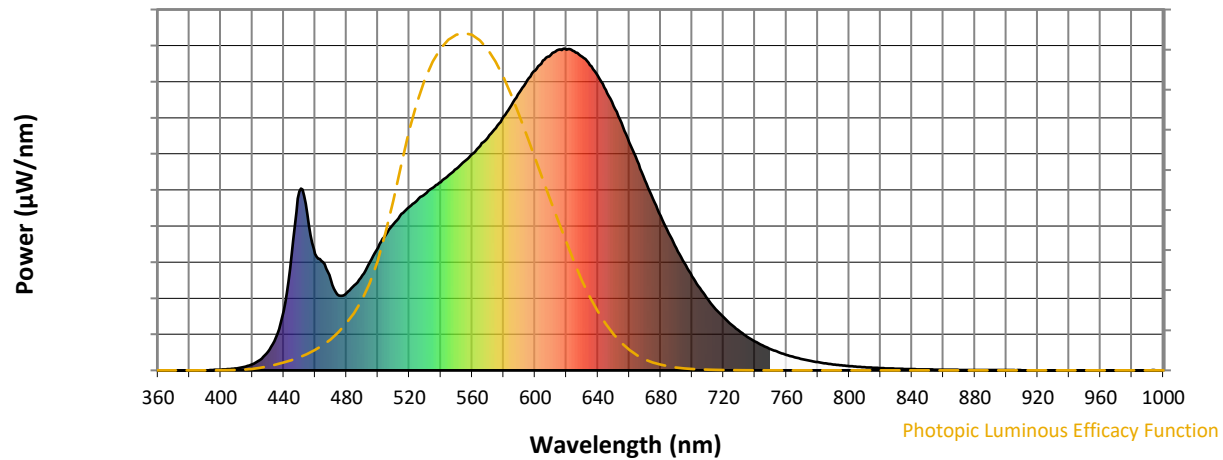
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

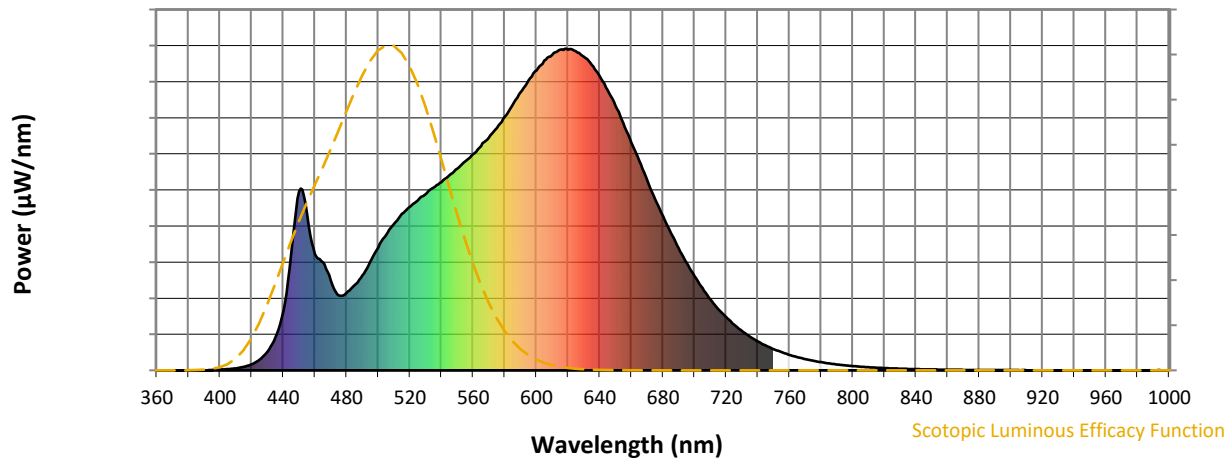


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 296                                  | NR                             | 620               | 997                                  | NR                             | 750               | 66                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 338                                  | NR                             | 625               | 992                                  | NR                             | 755               | 56                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 381                                  | NR                             | 630               | 975                                  | NR                             | 760               | 48                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 421                                  | NR                             | 635               | 949                                  | NR                             | 765               | 41                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 456                                  | NR                             | 640               | 916                                  | NR                             | 770               | 35                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 487                                  | NR                             | 645               | 871                                  | NR                             | 775               | 30                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 508                                  | NR                             | 650               | 821                                  | NR                             | 780               | 26                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 529                                  | NR                             | 655               | 769                                  | NR                             | 785               | 22                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 548                                  | NR                             | 660               | 709                                  | NR                             | 790               | 18                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 4                                    | NR                             | 535               | 568                                  | NR                             | 665               | 652                                  | NR                             | 795               | 16                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 585                                  | NR                             | 670               | 591                                  | NR                             | 800               | 13                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 11                                   | NR                             | 545               | 607                                  | NR                             | 675               | 534                                  | NR                             | 805               | 11                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 19                                   | NR                             | 550               | 627                                  | NR                             | 680               | 480                                  | NR                             | 810               | 10                                   | NR                             | 940               | 0                                    | NR                             |
| 425               | 33                                   | NR                             | 555               | 649                                  | NR                             | 685               | 427                                  | NR                             | 815               | 8                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 58                                   | NR                             | 560               | 673                                  | NR                             | 690               | 380                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 103                                  | NR                             | 565               | 697                                  | NR                             | 695               | 334                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 184                                  | NR                             | 570               | 723                                  | NR                             | 700               | 292                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 360                                  | NR                             | 575               | 753                                  | NR                             | 705               | 255                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 557                                  | NR                             | 580               | 789                                  | NR                             | 710               | 221                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 486                                  | NR                             | 585               | 825                                  | NR                             | 715               | 190                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 362                                  | NR                             | 590               | 864                                  | NR                             | 720               | 166                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 337                                  | NR                             | 595               | 902                                  | NR                             | 725               | 143                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 279                                  | NR                             | 600               | 932                                  | NR                             | 730               | 122                                  | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 233                                  | NR                             | 605               | 963                                  | NR                             | 735               | 105                                  | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 241                                  | NR                             | 610               | 981                                  | NR                             | 740               | 90                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 264                                  | NR                             | 615               | 997                                  | NR                             | 745               | 77                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



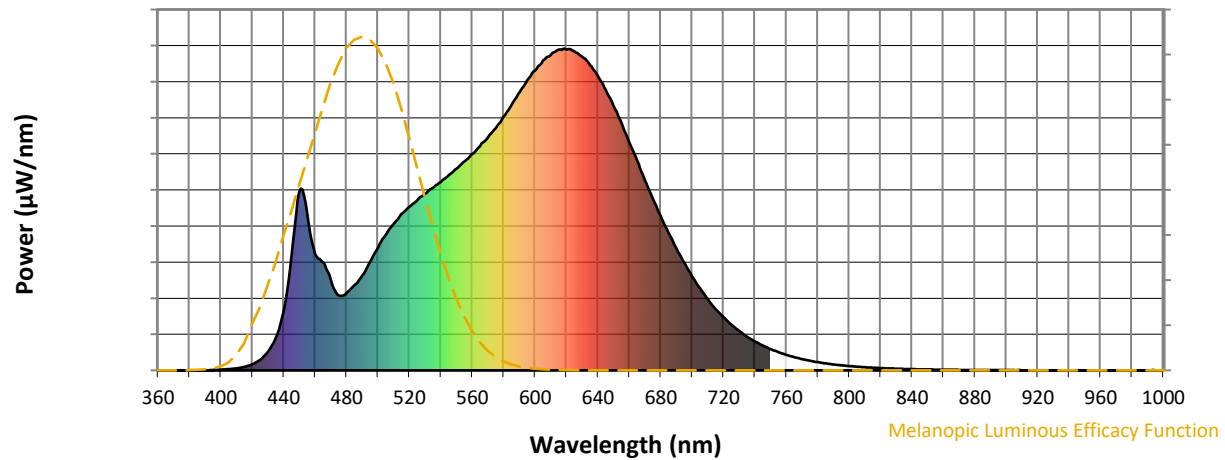
Scotopic Lumens: NR

S/P: 1.43

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 296                      | NR            | 620    | 997                      | NR            | 750    | 66                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 338                      | NR            | 625    | 992                      | NR            | 755    | 56                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 381                      | NR            | 630    | 975                      | NR            | 760    | 48                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 421                      | NR            | 635    | 949                      | NR            | 765    | 41                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 456                      | NR            | 640    | 916                      | NR            | 770    | 35                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 487                      | NR            | 645    | 871                      | NR            | 775    | 30                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 508                      | NR            | 650    | 821                      | NR            | 780    | 26                       | NR            | 910    | 1                        | NR            |
| 395    | 1                        | NR            | 525    | 529                      | NR            | 655    | 769                      | NR            | 785    | 22                       | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 548                      | NR            | 660    | 709                      | NR            | 790    | 18                       | NR            | 920    | 0                        | NR            |
| 405    | 4                        | NR            | 535    | 568                      | NR            | 665    | 652                      | NR            | 795    | 16                       | NR            | 925    | 0                        | NR            |
| 410    | 6                        | NR            | 540    | 585                      | NR            | 670    | 591                      | NR            | 800    | 13                       | NR            | 930    | 0                        | NR            |
| 415    | 11                       | NR            | 545    | 607                      | NR            | 675    | 534                      | NR            | 805    | 11                       | NR            | 935    | 0                        | NR            |
| 420    | 19                       | NR            | 550    | 627                      | NR            | 680    | 480                      | NR            | 810    | 10                       | NR            | 940    | 0                        | NR            |
| 425    | 33                       | NR            | 555    | 649                      | NR            | 685    | 427                      | NR            | 815    | 8                        | NR            | 945    | 0                        | NR            |
| 430    | 58                       | NR            | 560    | 673                      | NR            | 690    | 380                      | NR            | 820    | 7                        | NR            | 950    | 0                        | NR            |
| 435    | 103                      | NR            | 565    | 697                      | NR            | 695    | 334                      | NR            | 825    | 6                        | NR            | 955    | 0                        | NR            |
| 440    | 184                      | NR            | 570    | 723                      | NR            | 700    | 292                      | NR            | 830    | 5                        | NR            | 960    | 0                        | NR            |
| 445    | 360                      | NR            | 575    | 753                      | NR            | 705    | 255                      | NR            | 835    | 4                        | NR            | 965    | 0                        | NR            |
| 450    | 557                      | NR            | 580    | 789                      | NR            | 710    | 221                      | NR            | 840    | 4                        | NR            | 970    | 0                        | NR            |
| 455    | 486                      | NR            | 585    | 825                      | NR            | 715    | 190                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 362                      | NR            | 590    | 864                      | NR            | 720    | 166                      | NR            | 850    | 3                        | NR            | 980    | 0                        | NR            |
| 465    | 337                      | NR            | 595    | 902                      | NR            | 725    | 143                      | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 279                      | NR            | 600    | 932                      | NR            | 730    | 122                      | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 233                      | NR            | 605    | 963                      | NR            | 735    | 105                      | NR            | 865    | 2                        | NR            | 995    | 0                        | NR            |
| 480    | 241                      | NR            | 610    | 981                      | NR            | 740    | 90                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 264                      | NR            | 615    | 997                      | NR            | 745    | 77                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.82**

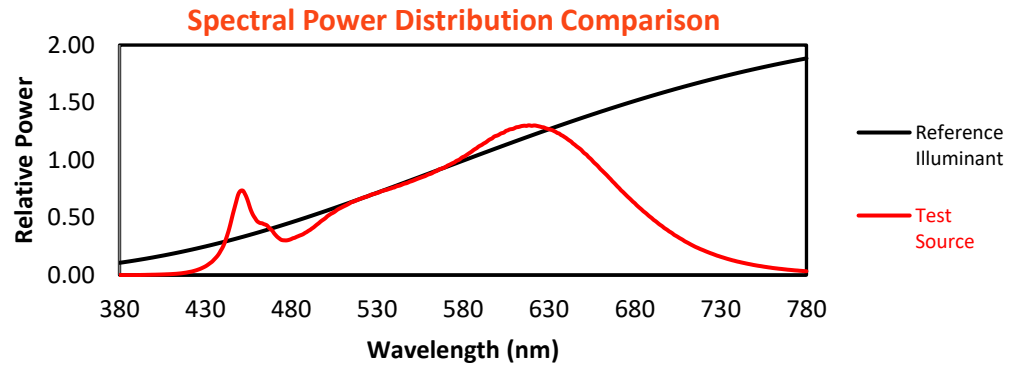
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 296                                  | NR                             | 620               | 997                                  | NR                             | 750               | 66                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 338                                  | NR                             | 625               | 992                                  | NR                             | 755               | 56                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 381                                  | NR                             | 630               | 975                                  | NR                             | 760               | 48                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 421                                  | NR                             | 635               | 949                                  | NR                             | 765               | 41                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 456                                  | NR                             | 640               | 916                                  | NR                             | 770               | 35                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 487                                  | NR                             | 645               | 871                                  | NR                             | 775               | 30                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 508                                  | NR                             | 650               | 821                                  | NR                             | 780               | 26                                   | NR                             | 910               | 1                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 529                                  | NR                             | 655               | 769                                  | NR                             | 785               | 22                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 548                                  | NR                             | 660               | 709                                  | NR                             | 790               | 18                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 4                                    | NR                             | 535               | 568                                  | NR                             | 665               | 652                                  | NR                             | 795               | 16                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 585                                  | NR                             | 670               | 591                                  | NR                             | 800               | 13                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 11                                   | NR                             | 545               | 607                                  | NR                             | 675               | 534                                  | NR                             | 805               | 11                                   | NR                             | 935               | 0                                    | NR                             |
| 420               | 19                                   | NR                             | 550               | 627                                  | NR                             | 680               | 480                                  | NR                             | 810               | 10                                   | NR                             | 940               | 0                                    | NR                             |
| 425               | 33                                   | NR                             | 555               | 649                                  | NR                             | 685               | 427                                  | NR                             | 815               | 8                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 58                                   | NR                             | 560               | 673                                  | NR                             | 690               | 380                                  | NR                             | 820               | 7                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 103                                  | NR                             | 565               | 697                                  | NR                             | 695               | 334                                  | NR                             | 825               | 6                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 184                                  | NR                             | 570               | 723                                  | NR                             | 700               | 292                                  | NR                             | 830               | 5                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 360                                  | NR                             | 575               | 753                                  | NR                             | 705               | 255                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 557                                  | NR                             | 580               | 789                                  | NR                             | 710               | 221                                  | NR                             | 840               | 4                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 486                                  | NR                             | 585               | 825                                  | NR                             | 715               | 190                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 362                                  | NR                             | 590               | 864                                  | NR                             | 720               | 166                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 337                                  | NR                             | 595               | 902                                  | NR                             | 725               | 143                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 279                                  | NR                             | 600               | 932                                  | NR                             | 730               | 122                                  | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 233                                  | NR                             | 605               | 963                                  | NR                             | 735               | 105                                  | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 241                                  | NR                             | 610               | 981                                  | NR                             | 740               | 90                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 264                                  | NR                             | 615               | 997                                  | NR                             | 745               | 77                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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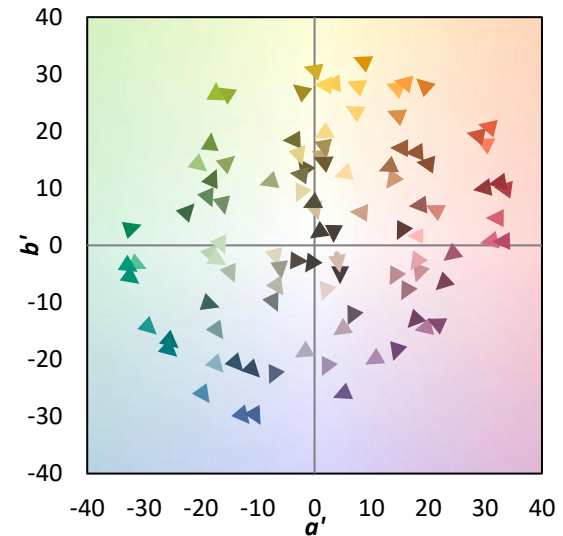
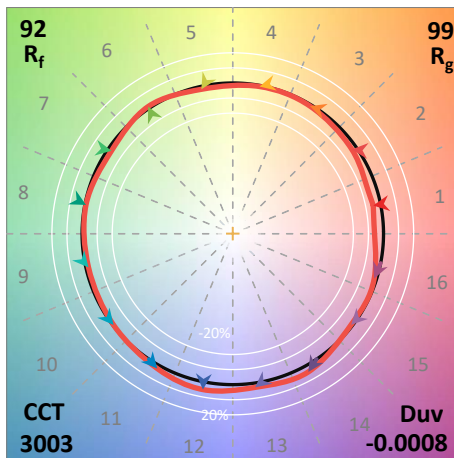
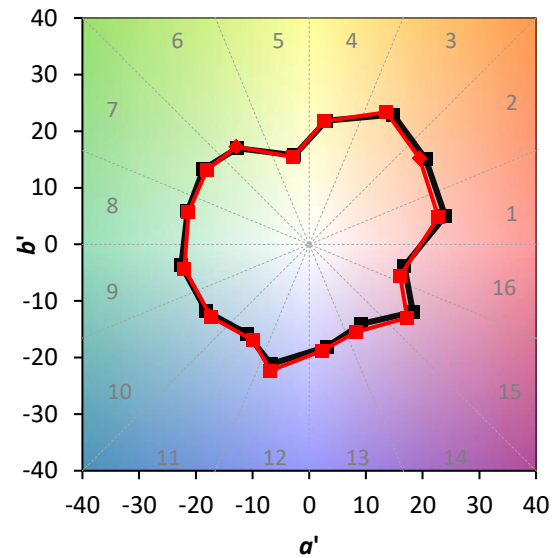
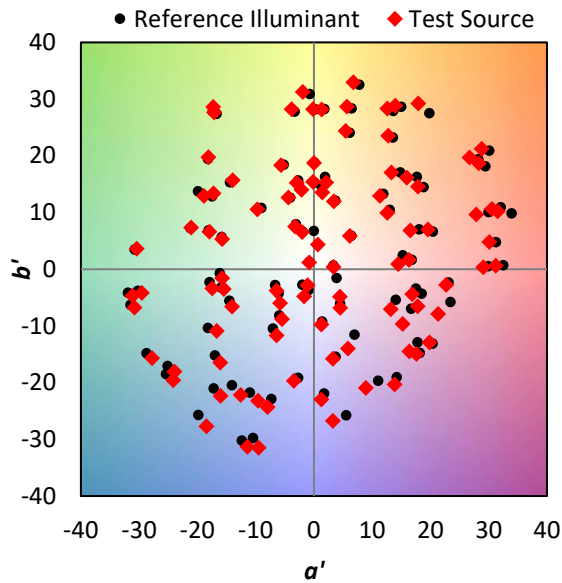
TM-30-18

### Summary

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

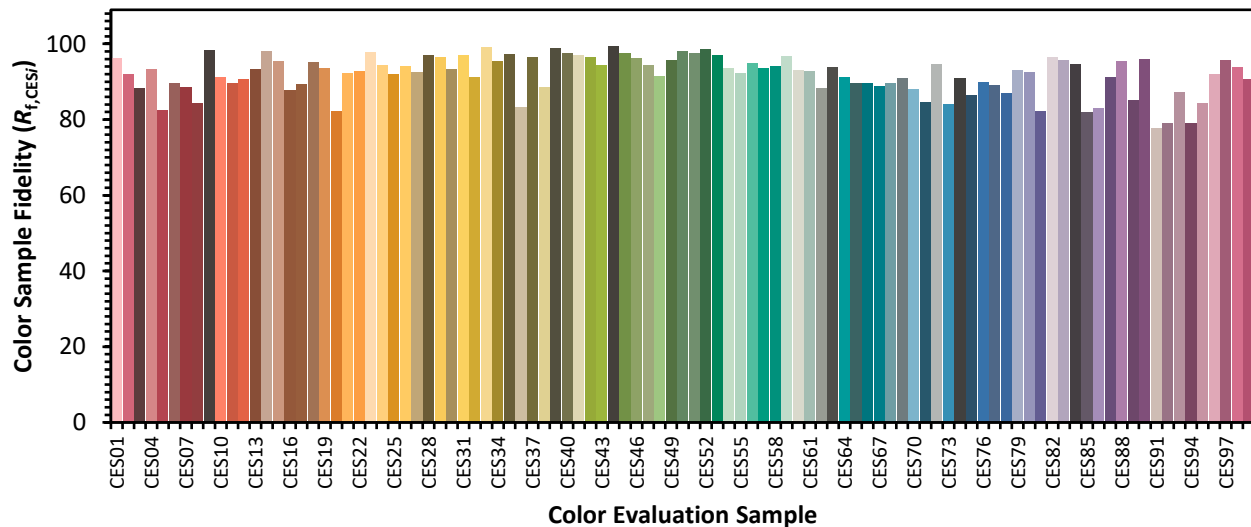


### Color Vector Graphics

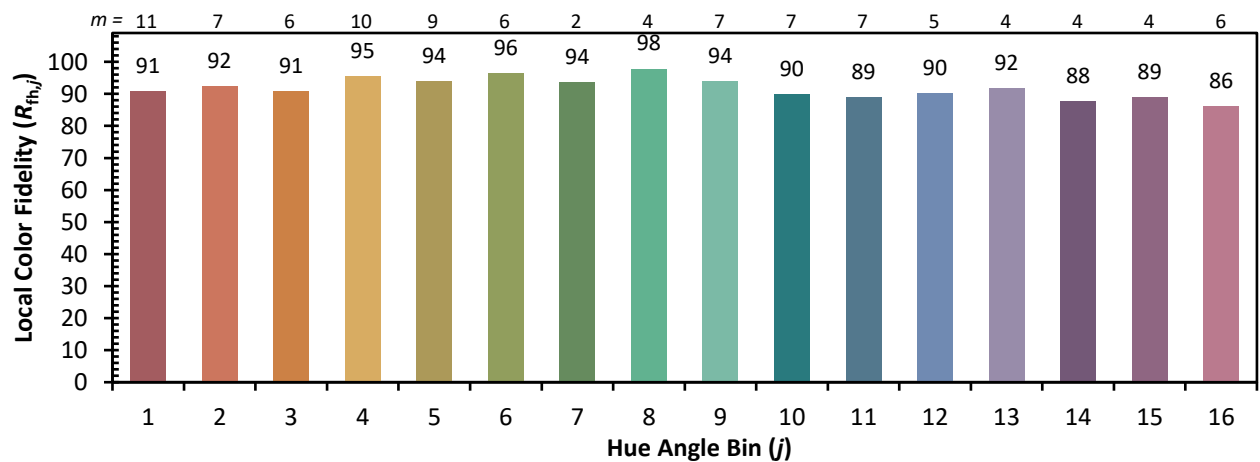
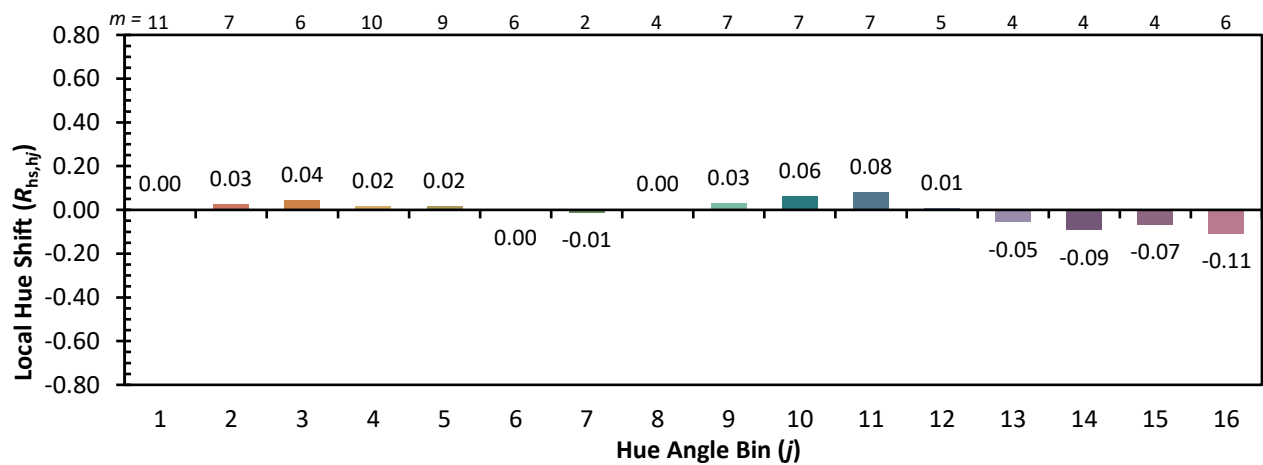
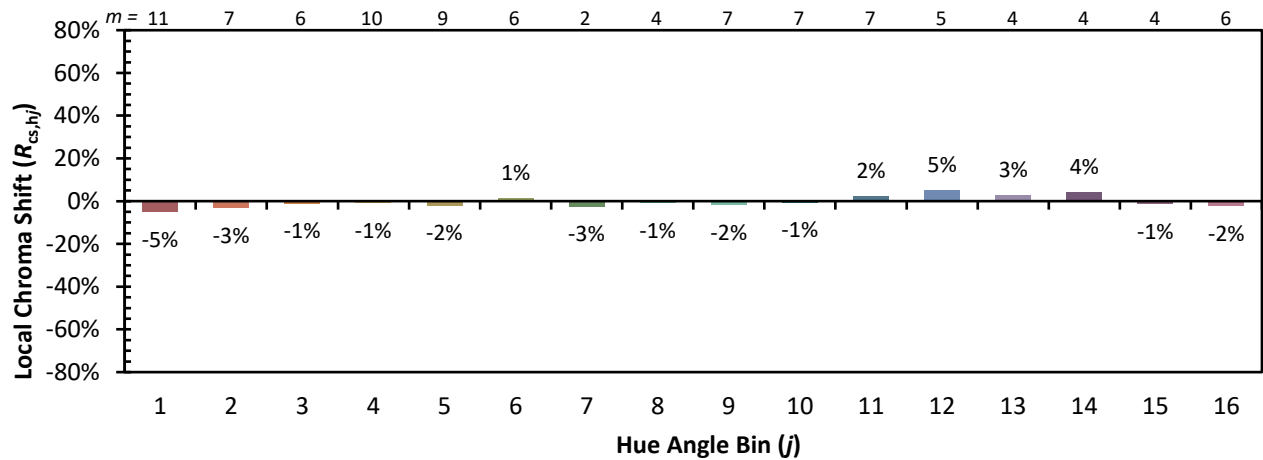


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

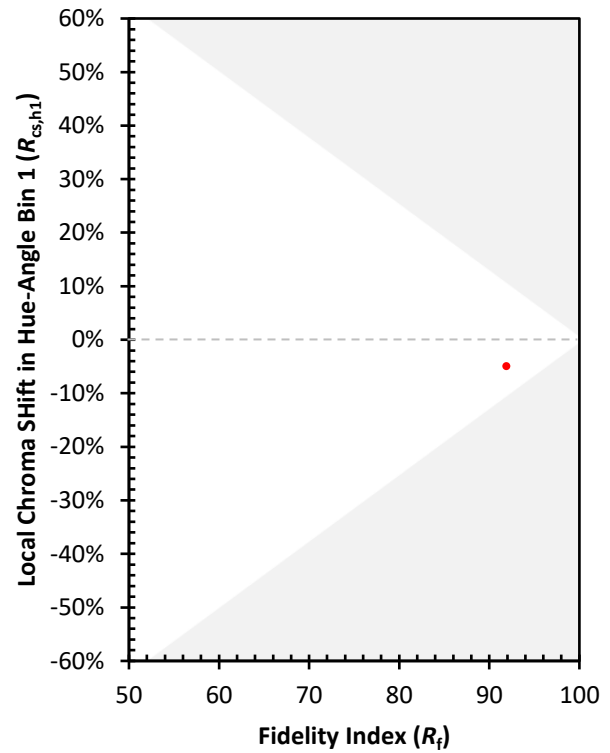
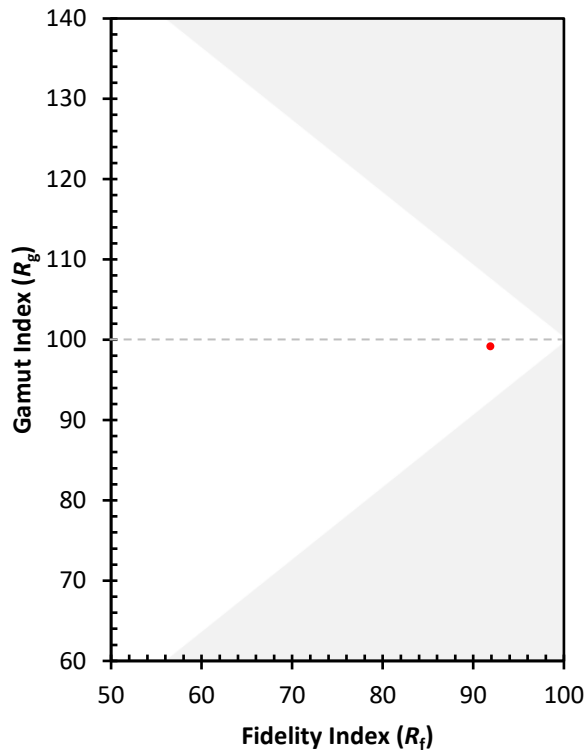
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 94 | CES51 = 97 | CES76 = 90 |
| CES02 = 63 | CES27 = 92 | CES52 = 99 | CES77 = 89 |
| CES03 = 32 | CES28 = 97 | CES53 = 97 | CES78 = 87 |
| CES04 = 70 | CES29 = 97 | CES54 = 94 | CES79 = 93 |
| CES05 = 51 | CES30 = 93 | CES55 = 92 | CES80 = 93 |
| CES06 = 51 | CES31 = 97 | CES56 = 95 | CES81 = 82 |
| CES07 = 43 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 42 | CES33 = 99 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 95 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 97 | CES60 = 93 | CES85 = 82 |
| CES11 = 59 | CES36 = 83 | CES61 = 93 | CES86 = 83 |
| CES12 = 65 | CES37 = 97 | CES62 = 88 | CES87 = 91 |
| CES13 = 44 | CES38 = 89 | CES63 = 94 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 85 |
| CES15 = 72 | CES40 = 98 | CES65 = 90 | CES90 = 96 |
| CES16 = 48 | CES41 = 97 | CES66 = 90 | CES91 = 78 |
| CES17 = 50 | CES42 = 96 | CES67 = 89 | CES92 = 79 |
| CES18 = 57 | CES43 = 94 | CES68 = 90 | CES93 = 87 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 79 |
| CES20 = 67 | CES45 = 98 | CES70 = 88 | CES95 = 84 |
| CES21 = 86 | CES46 = 96 | CES71 = 85 | CES96 = 92 |
| CES22 = 79 | CES47 = 94 | CES72 = 95 | CES97 = 96 |
| CES23 = 92 | CES48 = 91 | CES73 = 84 | CES98 = 94 |
| CES24 = 91 | CES49 = 96 | CES74 = 91 | CES99 = 91 |
| CES25 = 72 | CES50 = 98 | CES75 = 87 |            |





**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)