

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: P1215308

Luminaire Tested: 22-ID2-55-DBR-L850-U

Issue Date: 12/4/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1215308  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2506-458-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/4/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 22-ID2-55-DBR-L850-U  
Description: 2X2 IN DEPTH TROFFER WITH 2INCH DOUBLE BARREL REGRESSED  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

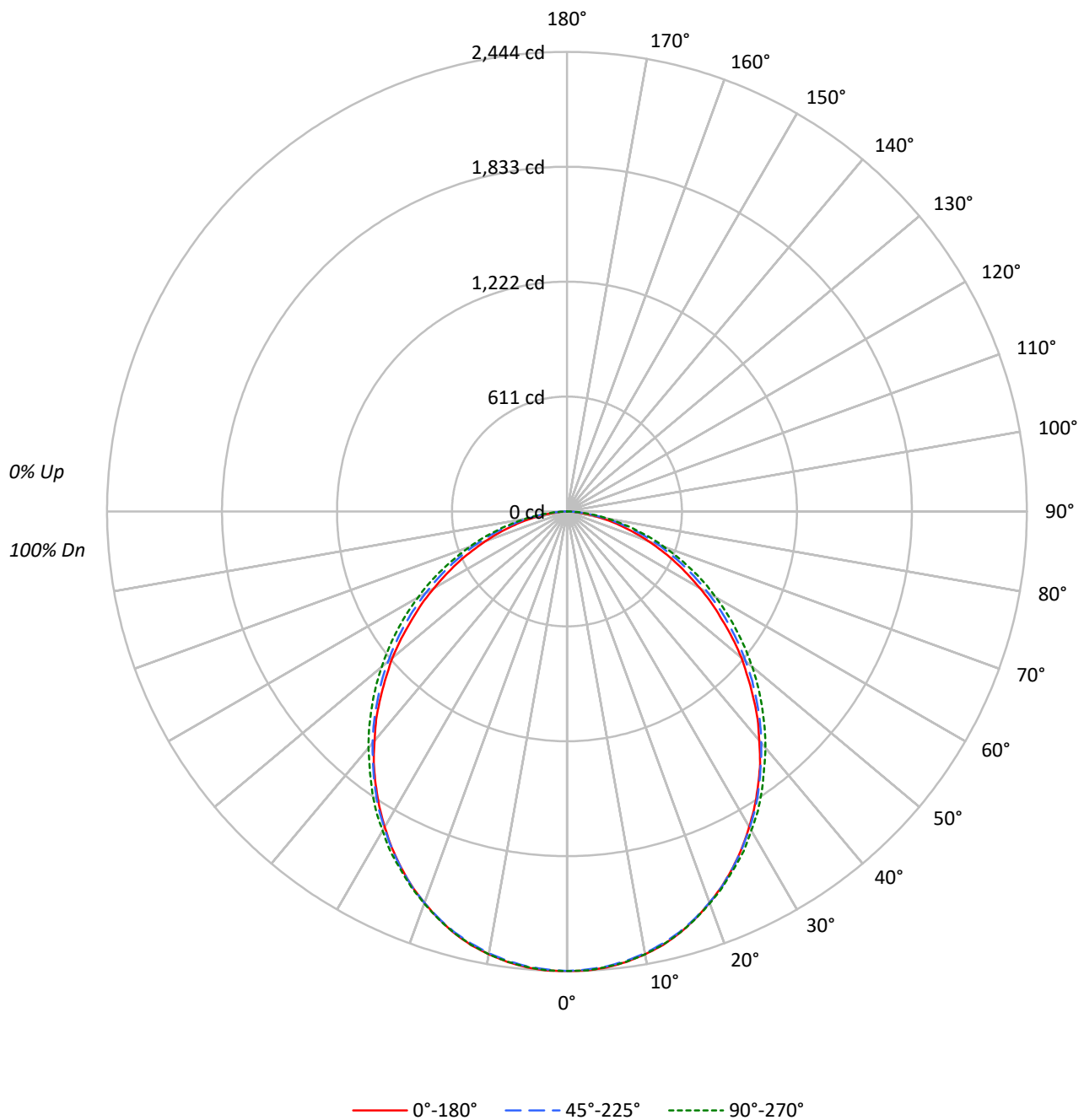
Lumens per Lamp: N/A  
Luminaire Lumens: 6143.6 lumens  
Efficiency: N/A  
Efficacy: 125.9 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.2 / 1.29  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

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



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### Luminous Intensity Polar Plot



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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 | 102 | 99  | 95  | 98  | 95  | 92  |  | 94  | 92  | 89  |  | 85  |
| 2   | 100 | 92  | 85  | 80  | 97  | 90  | 84  | 79  | 86  | 81  | 77  |  | 83  | 79  | 75  |  | 71  |
| 3   | 91  | 81  | 73  | 67  | 89  | 79  | 72  | 66  | 76  | 70  | 65  |  | 74  | 68  | 64  |  | 61  |
| 4   | 84  | 72  | 63  | 57  | 81  | 71  | 63  | 56  | 68  | 61  | 56  |  | 66  | 60  | 55  |  | 52  |
| 5   | 77  | 65  | 56  | 49  | 75  | 63  | 55  | 49  | 61  | 54  | 48  |  | 59  | 53  | 48  |  | 45  |
| 6   | 71  | 58  | 50  | 43  | 69  | 57  | 49  | 43  | 56  | 48  | 43  |  | 54  | 47  | 42  |  | 40  |
| 7   | 66  | 53  | 44  | 38  | 65  | 52  | 44  | 38  | 51  | 43  | 38  |  | 49  | 43  | 38  |  | 35  |
| 8   | 62  | 48  | 40  | 34  | 60  | 48  | 40  | 34  | 46  | 39  | 34  |  | 45  | 39  | 34  |  | 32  |
| 9   | 58  | 45  | 36  | 31  | 56  | 44  | 36  | 31  | 43  | 36  | 31  |  | 42  | 35  | 31  |  | 29  |
| 10  | 54  | 41  | 33  | 28  | 53  | 41  | 33  | 28  | 40  | 33  | 28  |  | 39  | 32  | 28  |  | 26  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 6575 | 6575 | 6575 |
| 5°  | 6574 | 6559 | 6568 |
| 10° | 6533 | 6519 | 6533 |
| 15° | 6464 | 6449 | 6462 |
| 20° | 6343 | 6341 | 6354 |
| 25° | 6199 | 6201 | 6226 |
| 30° | 6019 | 6033 | 6087 |
| 35° | 5820 | 5848 | 5935 |
| 40° | 5584 | 5643 | 5763 |
| 45° | 5334 | 5423 | 5577 |
| 50° | 5067 | 5191 | 5380 |
| 55° | 4728 | 4935 | 5160 |
| 60° | 4391 | 4657 | 4915 |
| 65° | 4040 | 4370 | 4656 |
| 70° | 3626 | 4051 | 4321 |
| 75° | 3136 | 3635 | 3936 |
| 80° | 2562 | 3152 | 3446 |
| 85° | 1717 | 2424 | 2705 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5577 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 230.6  | 3.8       |
| 10°-20°   | 652.6  | 10.6      |
| 20°-30°   | 962.7  | 15.7      |
| 30°-40°   | 1116.2 | 18.2      |
| 40°-50°   | 1102.9 | 18.0      |
| 50°-60°   | 942.1  | 15.3      |
| 60°-70°   | 677.6  | 11.0      |
| 70°-80°   | 368.0  | 6.0       |
| 80°-90°   | 91.0   | 1.5       |
| 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°    | 1845.9 | 30.0      |
| 0°-40°    | 2962.1 | 48.2      |
| 0°-60°    | 5007.1 | 81.5      |
| 0°-90°    | 6143.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6143.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2444 | 2444  | 2444 | 2444  | 2444 |      |
| 5°  | 2434 | 2431  | 2428 | 2429  | 2431 | 231  |
| 15° | 2320 | 2317  | 2315 | 2315  | 2319 | 653  |
| 25° | 2088 | 2086  | 2089 | 2098  | 2097 | 961  |
| 35° | 1772 | 1773  | 1780 | 1798  | 1807 | 1107 |
| 45° | 1402 | 1407  | 1425 | 1454  | 1466 | 1081 |
| 55° | 1008 | 1021  | 1052 | 1083  | 1100 | 904  |
| 65° | 634  | 649   | 686  | 715   | 731  | 628  |
| 75° | 302  | 324   | 350  | 368   | 379  | 322  |
| 85° | 56   | 66    | 78   | 85    | 88   | 72   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2443.5 | 2443.5 | 2443.5 | 2443.5 | 2443.5 |
| 2.5°  | 2443.5 | 2440.5 | 2438.2 | 2439.7 | 2442.7 |
| 5°    | 2433.6 | 2430.6 | 2428.3 | 2429.0 | 2431.3 |
| 7.5°  | 2416.1 | 2413.0 | 2410.0 | 2412.3 | 2415.3 |
| 10°   | 2391.0 | 2389.4 | 2385.6 | 2387.9 | 2391.0 |
| 12.5° | 2361.2 | 2355.9 | 2352.9 | 2355.9 | 2359.0 |
| 15°   | 2320.1 | 2317.1 | 2314.8 | 2314.8 | 2319.4 |
| 17.5° | 2270.6 | 2269.1 | 2267.6 | 2269.8 | 2272.1 |
| 20°   | 2215.0 | 2214.2 | 2214.2 | 2215.8 | 2218.8 |
| 22.5° | 2155.6 | 2153.3 | 2156.4 | 2159.4 | 2161.7 |
| 25°   | 2087.8 | 2086.3 | 2088.6 | 2097.7 | 2096.9 |
| 27.5° | 2015.4 | 2016.2 | 2017.0 | 2028.4 | 2035.2 |
| 30°   | 1937.0 | 1939.3 | 1941.6 | 1957.5 | 1959.1 |
| 32.5° | 1857.0 | 1858.5 | 1865.4 | 1881.4 | 1888.2 |
| 35°   | 1771.7 | 1773.2 | 1780.1 | 1797.6 | 1806.7 |
| 37.5° | 1686.4 | 1685.6 | 1692.5 | 1716.9 | 1721.4 |
| 40°   | 1589.7 | 1591.9 | 1606.4 | 1633.1 | 1640.7 |
| 42.5° | 1500.5 | 1501.3 | 1518.1 | 1544.0 | 1554.6 |
| 45°   | 1401.5 | 1406.8 | 1425.1 | 1454.1 | 1465.5 |
| 47.5° | 1302.5 | 1308.6 | 1335.2 | 1363.4 | 1377.1 |
| 50°   | 1210.3 | 1214.1 | 1240.0 | 1270.5 | 1285.0 |
| 52.5° | 1109.8 | 1119.7 | 1146.3 | 1178.3 | 1192.8 |
| 55°   | 1007.7 | 1021.4 | 1051.9 | 1083.1 | 1099.9 |
| 57.5° | 914.0  | 927.0  | 959.0  | 991.0  | 1006.2 |
| 60°   | 815.8  | 831.8  | 865.3  | 898.0  | 913.3  |
| 62.5° | 722.1  | 739.6  | 775.4  | 808.9  | 825.7  |
| 65°   | 634.5  | 649.0  | 686.3  | 715.2  | 731.2  |
| 67.5° | 543.1  | 562.9  | 597.9  | 628.4  | 637.5  |
| 70°   | 460.8  | 477.6  | 514.9  | 537.8  | 549.2  |
| 72.5° | 376.3  | 400.7  | 431.9  | 453.2  | 466.9  |
| 75°   | 301.6  | 324.5  | 349.6  | 367.9  | 378.6  |
| 77.5° | 230.0  | 248.3  | 276.5  | 291.0  | 297.1  |
| 80°   | 165.3  | 179.8  | 203.4  | 217.8  | 222.4  |
| 82.5° | 107.4  | 120.3  | 137.1  | 146.2  | 150.8  |
| 85°   | 55.6   | 65.5   | 78.5   | 85.3   | 87.6   |
| 87.5° | 18.3   | 22.9   | 28.2   | 30.5   | 32.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 17.22            | 18.81 | 17.58 | 19.13 | 19.44 | 17.72          | 19.32 | 18.09 | 19.63 | 19.95 |
|                 | 3H   | 18.74            | 20.18 | 19.12 | 20.51 | 20.87 | 19.43          | 20.87 | 19.81 | 21.20 | 21.56 |
|                 | 4H   | 19.27            | 20.62 | 19.66 | 20.97 | 21.34 | 20.06          | 21.41 | 20.46 | 21.76 | 22.14 |
|                 | 6H   | 19.60            | 20.86 | 20.01 | 21.22 | 21.61 | 20.50          | 21.76 | 20.91 | 22.12 | 22.51 |
|                 | 8H   | 19.69            | 20.88 | 20.11 | 21.27 | 21.67 | 20.64          | 21.83 | 21.06 | 22.22 | 22.62 |
|                 | 12H  | 19.73            | 20.87 | 20.16 | 21.26 | 21.68 | 20.72          | 21.86 | 21.15 | 22.24 | 22.67 |
| 4H              | 2H   | 17.85            | 19.21 | 18.25 | 19.55 | 19.93 | 18.26          | 19.61 | 18.66 | 19.96 | 20.33 |
|                 | 3H   | 19.60            | 20.73 | 20.01 | 21.13 | 21.53 | 20.19          | 21.32 | 20.60 | 21.71 | 22.11 |
|                 | 4H   | 20.24            | 21.26 | 20.67 | 21.68 | 22.11 | 20.94          | 21.96 | 21.37 | 22.37 | 22.81 |
|                 | 6H   | 20.69            | 21.58 | 21.14 | 22.02 | 22.48 | 21.51          | 22.40 | 21.97 | 22.84 | 23.30 |
|                 | 8H   | 20.81            | 21.64 | 21.27 | 22.08 | 22.55 | 21.69          | 22.52 | 22.15 | 22.96 | 23.43 |
|                 | 12H  | 20.88            | 21.62 | 21.36 | 22.10 | 22.57 | 21.81          | 22.55 | 22.29 | 23.03 | 23.50 |
| 8H              | 4H   | 20.56            | 21.39 | 21.02 | 21.83 | 22.30 | 21.18          | 22.01 | 21.64 | 22.45 | 22.92 |
|                 | 6H   | 21.11            | 21.80 | 21.61 | 22.29 | 22.77 | 21.86          | 22.55 | 22.36 | 23.04 | 23.52 |
|                 | 8H   | 21.29            | 21.91 | 21.80 | 22.41 | 22.90 | 22.11          | 22.73 | 22.62 | 23.23 | 23.72 |
|                 | 12H  | 21.40            | 21.95 | 21.91 | 22.44 | 23.00 | 22.29          | 22.84 | 22.80 | 23.33 | 23.89 |
| 12H             | 4H   | 20.59            | 21.34 | 21.07 | 21.82 | 22.29 | 21.19          | 21.94 | 21.67 | 22.42 | 22.89 |
|                 | 6H   | 21.17            | 21.79 | 21.68 | 22.29 | 22.78 | 21.89          | 22.51 | 22.40 | 23.02 | 23.51 |
|                 | 8H   | 21.39            | 21.94 | 21.90 | 22.43 | 22.99 | 22.19          | 22.73 | 22.69 | 23.22 | 23.79 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-7

Test Date: 08/26/2025

Luminaire Tested: 22ID2-55-CFR1-L850-U

Data in this report applies to families of products including 22ID2-55-CFR1-L850-U



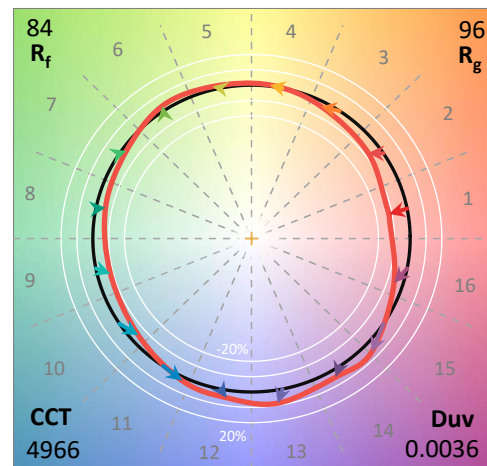
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-7  
 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-L850-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 5000K 80CRI

### Spectral Parameters

CCT (K): 4966  
 CIE  $u'$ : 0.2093  
 CIE  $v'$ : 0.4890  
 Duv: 0.0036  
 CIE x: 0.3468  
 CIE y: 0.3601  
 CIE z: 0.2931  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 570  
 Purity: 12.1135  
 R<sub>f</sub>: 84  
 R<sub>g</sub>: 96.2

CRI (Ra): 83.1  
 R1: 81.0  
 R2: 87.8  
 R3: 92.7  
 R4: 82.4  
 R5: 81.0  
 R6: 82.6  
 R7: 88.5  
 R8: 68.6  
 R9: 10.3  
 R10: 70.9  
 R11: 81.3  
 R12: 55.9  
 R13: 82.8  
 R14: 96.1  
 R15: 75.1



### Test Conditions

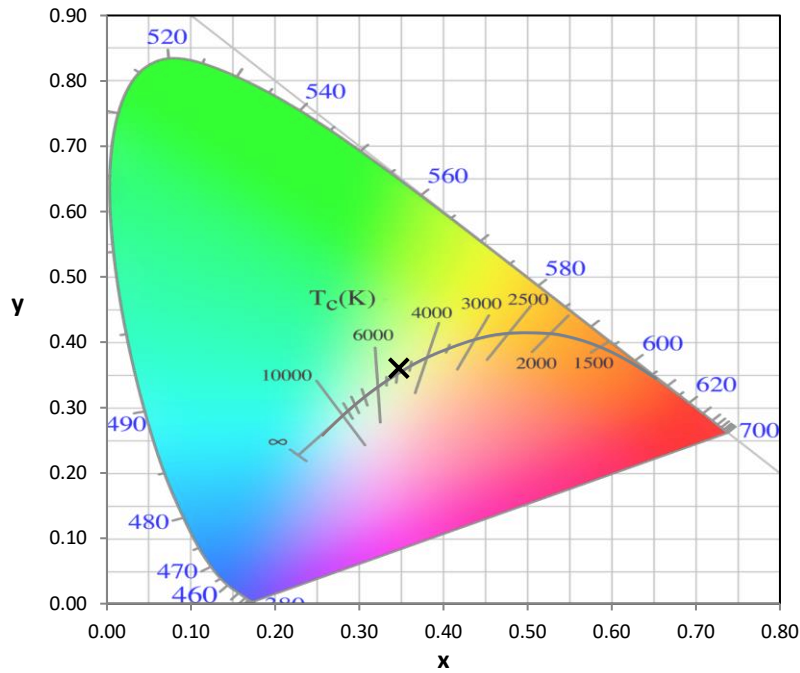
Stabilization Time: 37M  
 Operation Time: 1H 37M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2506-458-7

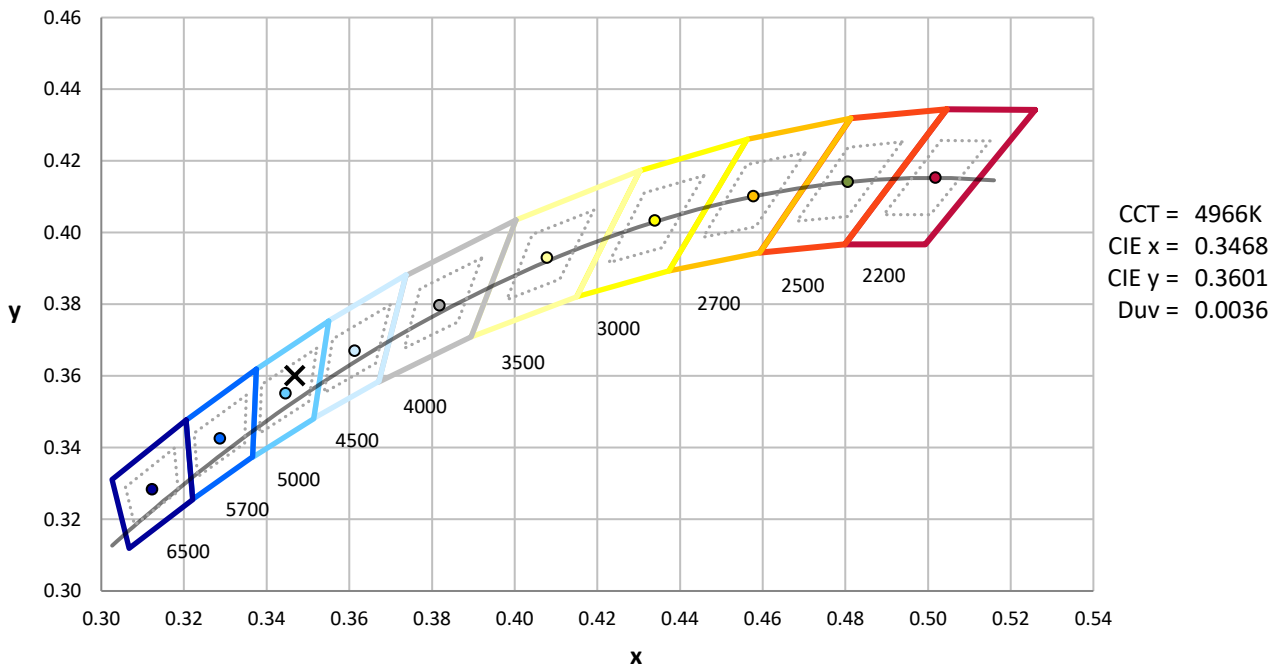
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



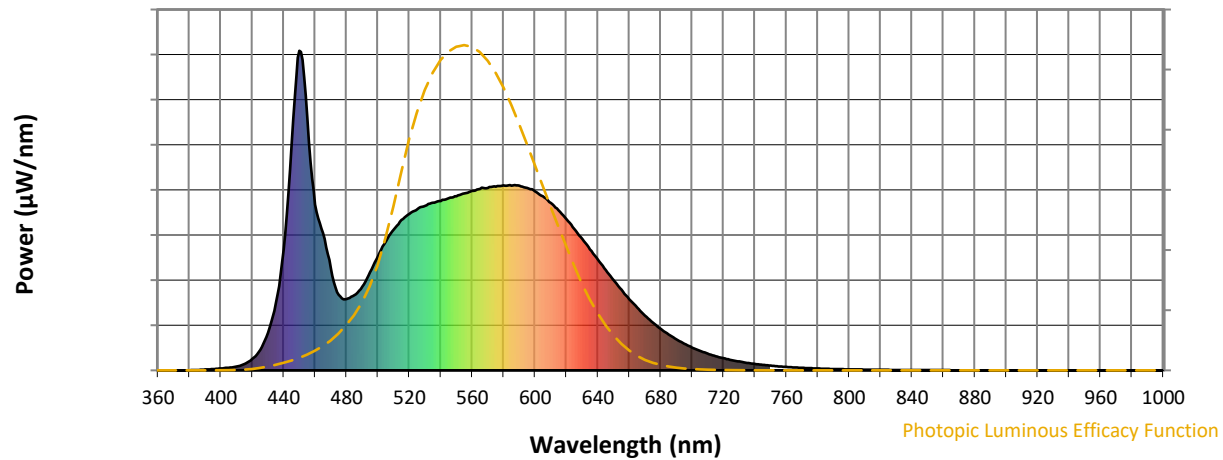
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

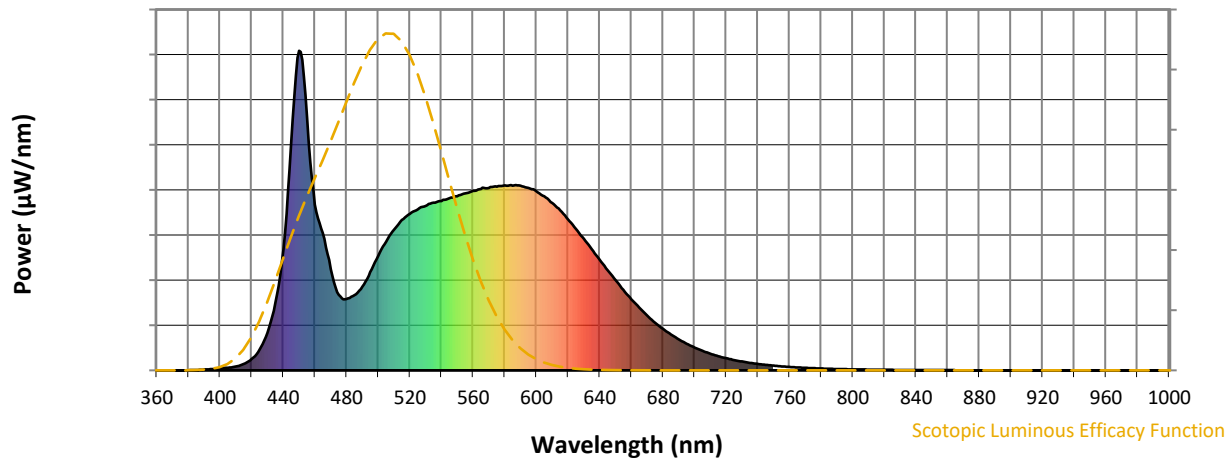


### Photopic Lumens: NR

| 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       | 262                         | NR               | 620       | 472                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 307                         | NR               | 625       | 443                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 358                         | NR               | 630       | 412                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 403                         | NR               | 635       | 379                         | NR               | 765       | 9                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 440                         | NR               | 640       | 346                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 471                         | NR               | 645       | 313                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 3                           | NR               | 520       | 490                         | NR               | 650       | 282                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 504                         | NR               | 655       | 252                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 515                         | NR               | 660       | 223                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 524                         | NR               | 665       | 197                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 12                          | NR               | 540       | 530                         | NR               | 670       | 171                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 20                          | NR               | 545       | 539                         | NR               | 675       | 149                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 545                         | NR               | 680       | 130                         | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 64                          | NR               | 555       | 554                         | NR               | 685       | 112                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 117                         | NR               | 560       | 562                         | NR               | 690       | 97                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 212                         | NR               | 565       | 567                         | NR               | 695       | 83                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 378                         | NR               | 570       | 571                         | NR               | 700       | 71                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 709                         | NR               | 575       | 574                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 1000                        | NR               | 580       | 579                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 789                         | NR               | 585       | 578                         | NR               | 715       | 44                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 519                         | NR               | 590       | 578                         | NR               | 720       | 38                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 429                         | NR               | 595       | 571                         | NR               | 725       | 32                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 316                         | NR               | 600       | 560                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 236                         | NR               | 605       | 545                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 224                         | NR               | 610       | 524                         | NR               | 740       | 20                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 235                         | NR               | 615       | 501                         | NR               | 745       | 17                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



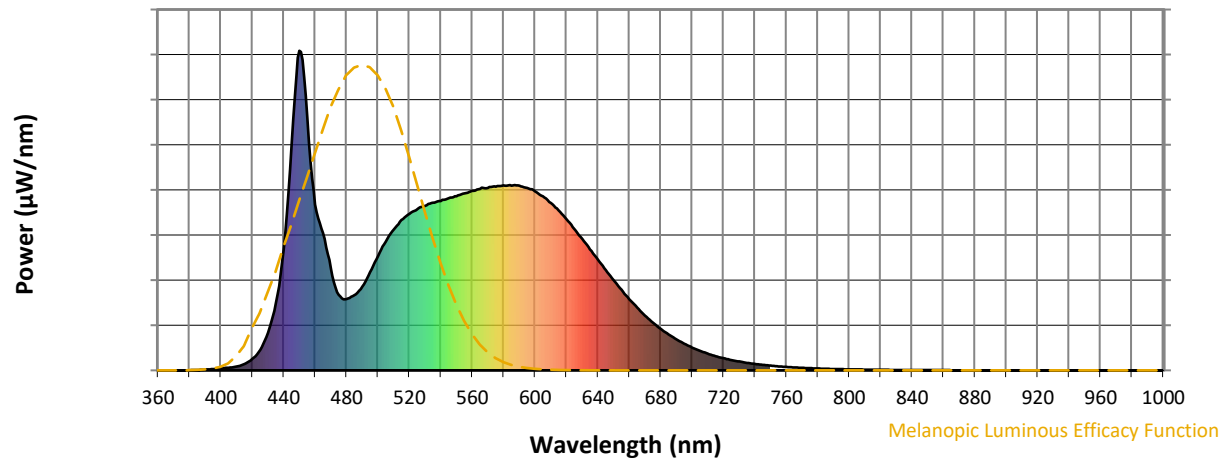
Scotopic Lumens: NR

S/P: 1.94

| 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       | 262                         | NR               | 620       | 472                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 307                         | NR               | 625       | 443                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 358                         | NR               | 630       | 412                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 403                         | NR               | 635       | 379                         | NR               | 765       | 9                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 440                         | NR               | 640       | 346                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 471                         | NR               | 645       | 313                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 3                           | NR               | 520       | 490                         | NR               | 650       | 282                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 504                         | NR               | 655       | 252                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 515                         | NR               | 660       | 223                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 524                         | NR               | 665       | 197                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 12                          | NR               | 540       | 530                         | NR               | 670       | 171                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 20                          | NR               | 545       | 539                         | NR               | 675       | 149                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 545                         | NR               | 680       | 130                         | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 64                          | NR               | 555       | 554                         | NR               | 685       | 112                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 117                         | NR               | 560       | 562                         | NR               | 690       | 97                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 212                         | NR               | 565       | 567                         | NR               | 695       | 83                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 378                         | NR               | 570       | 571                         | NR               | 700       | 71                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 709                         | NR               | 575       | 574                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 1000                        | NR               | 580       | 579                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 789                         | NR               | 585       | 578                         | NR               | 715       | 44                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 519                         | NR               | 590       | 578                         | NR               | 720       | 38                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 429                         | NR               | 595       | 571                         | NR               | 725       | 32                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 316                         | NR               | 600       | 560                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 236                         | NR               | 605       | 545                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 224                         | NR               | 610       | 524                         | NR               | 740       | 20                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 235                         | NR               | 615       | 501                         | NR               | 745       | 17                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.11

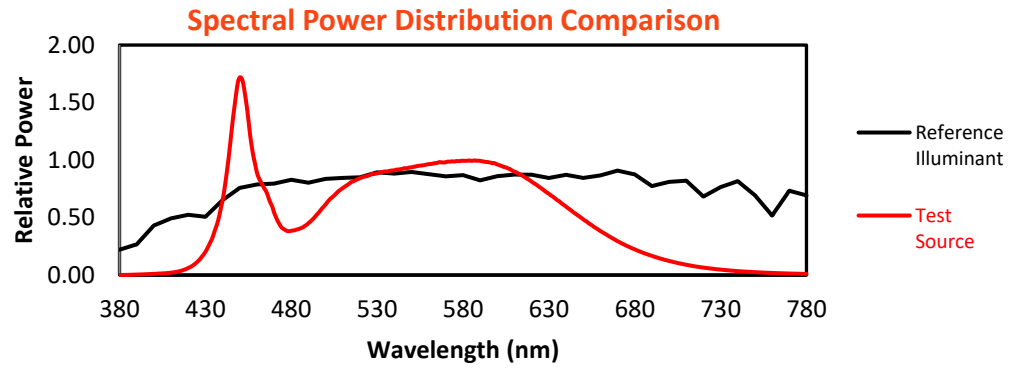
| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 262                      | NR            | 620    | 472                      | NR            | 750    | 15                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 307                      | NR            | 625    | 443                      | NR            | 755    | 13                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 358                      | NR            | 630    | 412                      | NR            | 760    | 11                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 403                      | NR            | 635    | 379                      | NR            | 765    | 9                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 440                      | NR            | 640    | 346                      | NR            | 770    | 8                        | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 471                      | NR            | 645    | 313                      | NR            | 775    | 7                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 490                      | NR            | 650    | 282                      | NR            | 780    | 6                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 504                      | NR            | 655    | 252                      | NR            | 785    | 5                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 515                      | NR            | 660    | 223                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 9                        | NR            | 535    | 524                      | NR            | 665    | 197                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 530                      | NR            | 670    | 171                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 20                       | NR            | 545    | 539                      | NR            | 675    | 149                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 545                      | NR            | 680    | 130                      | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 64                       | NR            | 555    | 554                      | NR            | 685    | 112                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 117                      | NR            | 560    | 562                      | NR            | 690    | 97                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 212                      | NR            | 565    | 567                      | NR            | 695    | 83                       | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 378                      | NR            | 570    | 571                      | NR            | 700    | 71                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 709                      | NR            | 575    | 574                      | NR            | 705    | 61                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 579                      | NR            | 710    | 52                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 789                      | NR            | 585    | 578                      | NR            | 715    | 44                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 519                      | NR            | 590    | 578                      | NR            | 720    | 38                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 429                      | NR            | 595    | 571                      | NR            | 725    | 32                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 316                      | NR            | 600    | 560                      | NR            | 730    | 28                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 236                      | NR            | 605    | 545                      | NR            | 735    | 24                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 224                      | NR            | 610    | 524                      | NR            | 740    | 20                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 235                      | NR            | 615    | 501                      | NR            | 745    | 17                       | NR            | 875    | 0                        | NR            |        |                          |               |

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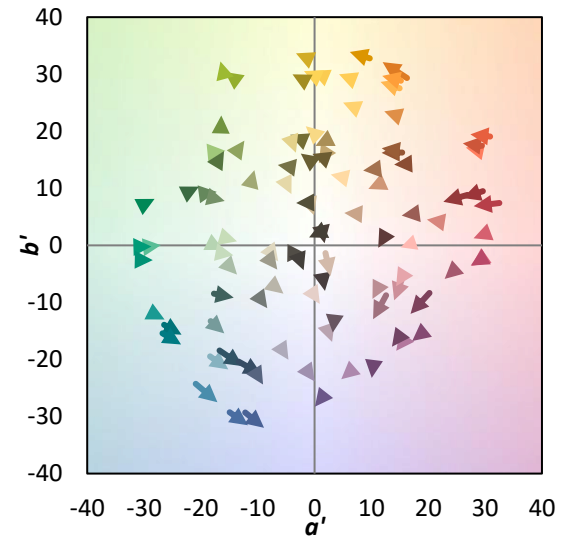
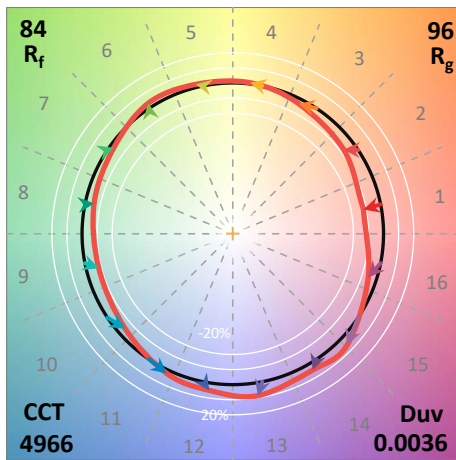
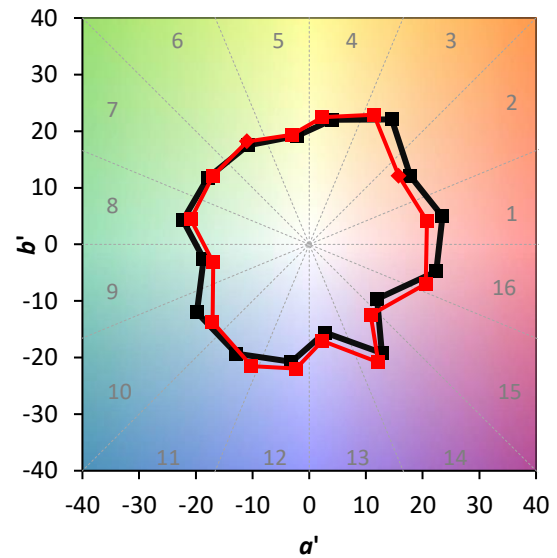
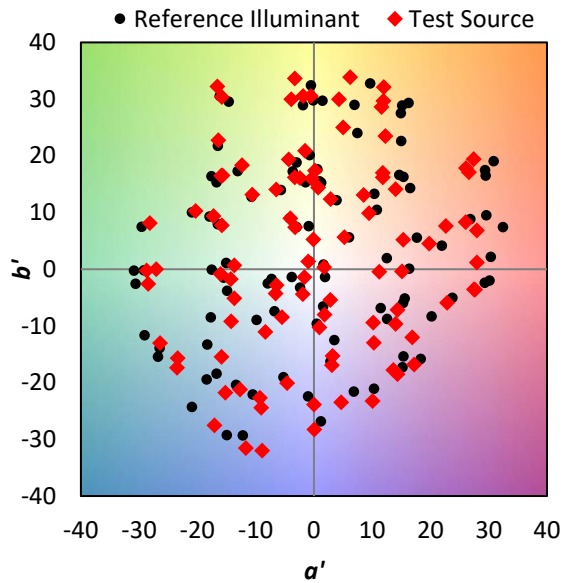
TM-30-18

### Summary

$R_f = 84$   
 $R_g = 96.2$   
 $CIE R_a = 83.1$   
 $R_9 = 10.3$

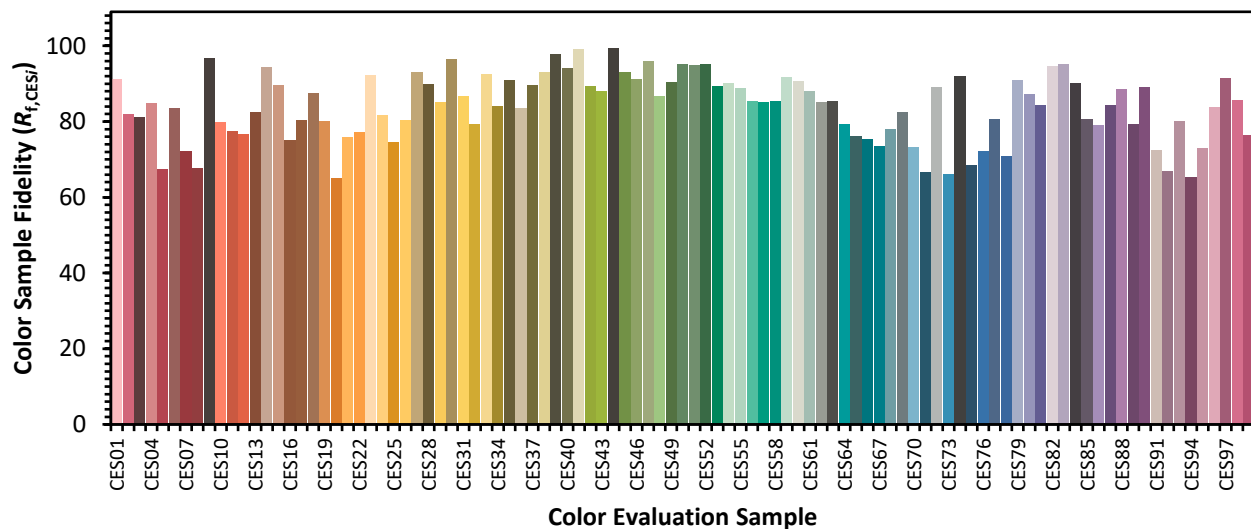


### Color Vector Graphics



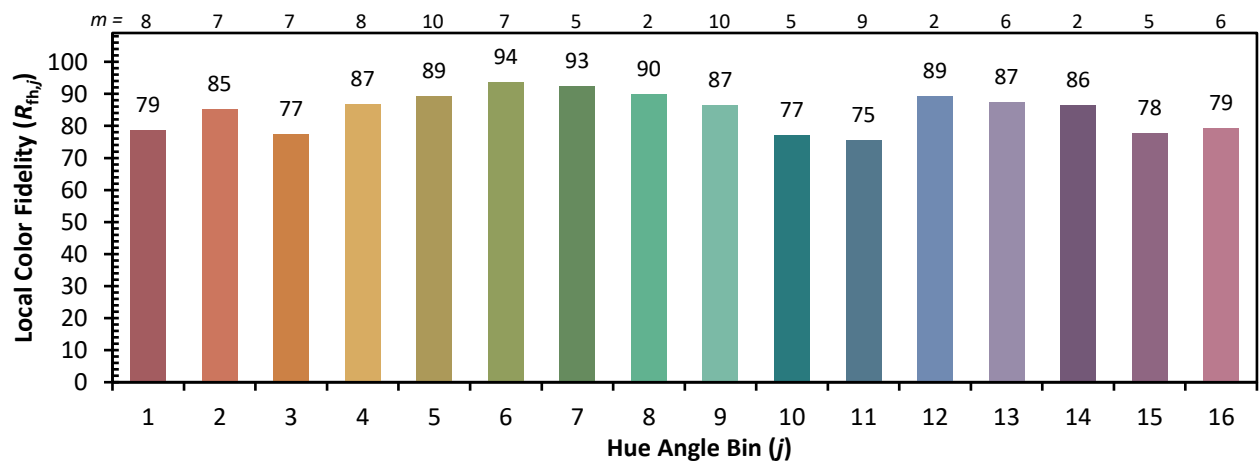
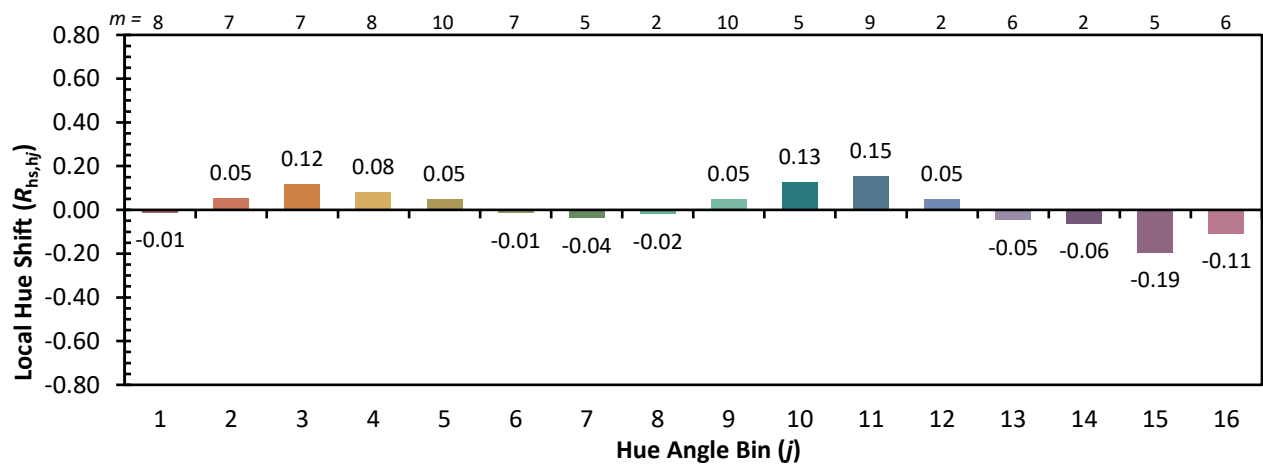
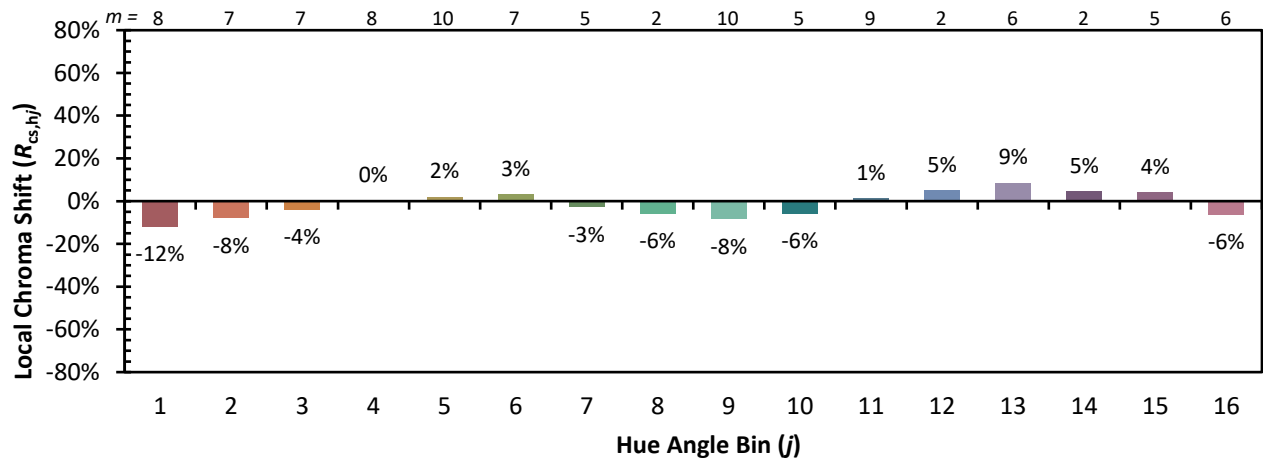
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 80 | CES51 = 95 | CES76 = 72 |
| CES02 = 60 | CES27 = 93 | CES52 = 95 | CES77 = 81 |
| CES03 = 30 | CES28 = 90 | CES53 = 89 | CES78 = 71 |
| CES04 = 69 | CES29 = 85 | CES54 = 90 | CES79 = 91 |
| CES05 = 47 | CES30 = 97 | CES55 = 89 | CES80 = 87 |
| CES06 = 50 | CES31 = 87 | CES56 = 86 | CES81 = 84 |
| CES07 = 40 | CES32 = 79 | CES57 = 85 | CES82 = 95 |
| CES08 = 39 | CES33 = 92 | CES58 = 85 | CES83 = 95 |
| CES09 = 29 | CES34 = 84 | CES59 = 92 | CES84 = 90 |
| CES10 = 73 | CES35 = 91 | CES60 = 91 | CES85 = 81 |
| CES11 = 56 | CES36 = 83 | CES61 = 88 | CES86 = 79 |
| CES12 = 62 | CES37 = 90 | CES62 = 85 | CES87 = 84 |
| CES13 = 42 | CES38 = 93 | CES63 = 85 | CES88 = 89 |
| CES14 = 74 | CES39 = 98 | CES64 = 79 | CES89 = 79 |
| CES15 = 71 | CES40 = 94 | CES65 = 76 | CES90 = 89 |
| CES16 = 46 | CES41 = 99 | CES66 = 75 | CES91 = 72 |
| CES17 = 48 | CES42 = 89 | CES67 = 73 | CES92 = 67 |
| CES18 = 55 | CES43 = 88 | CES68 = 78 | CES93 = 80 |
| CES19 = 70 | CES44 = 99 | CES69 = 82 | CES94 = 65 |
| CES20 = 64 | CES45 = 93 | CES70 = 73 | CES95 = 73 |
| CES21 = 85 | CES46 = 91 | CES71 = 67 | CES96 = 84 |
| CES22 = 77 | CES47 = 96 | CES72 = 89 | CES97 = 92 |
| CES23 = 91 | CES48 = 87 | CES73 = 66 | CES98 = 86 |
| CES24 = 90 | CES49 = 90 | CES74 = 92 | CES99 = 77 |
| CES25 = 71 | CES50 = 95 | CES75 = 68 |            |

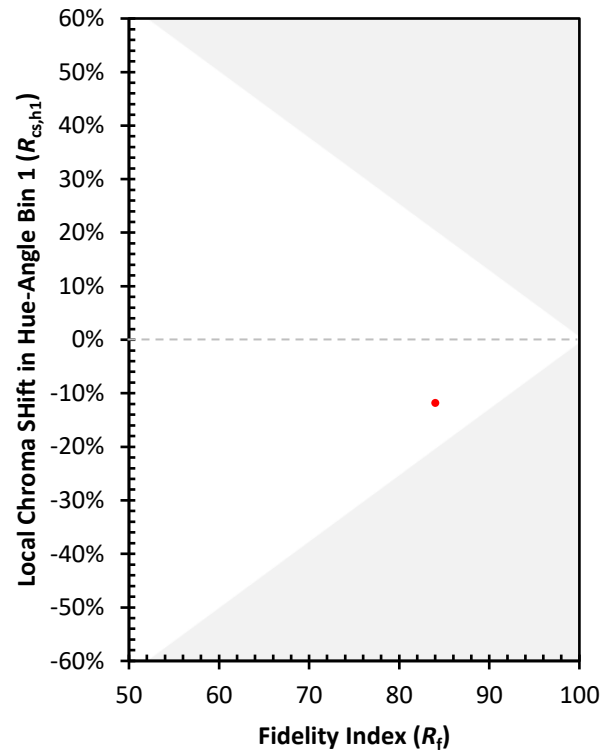
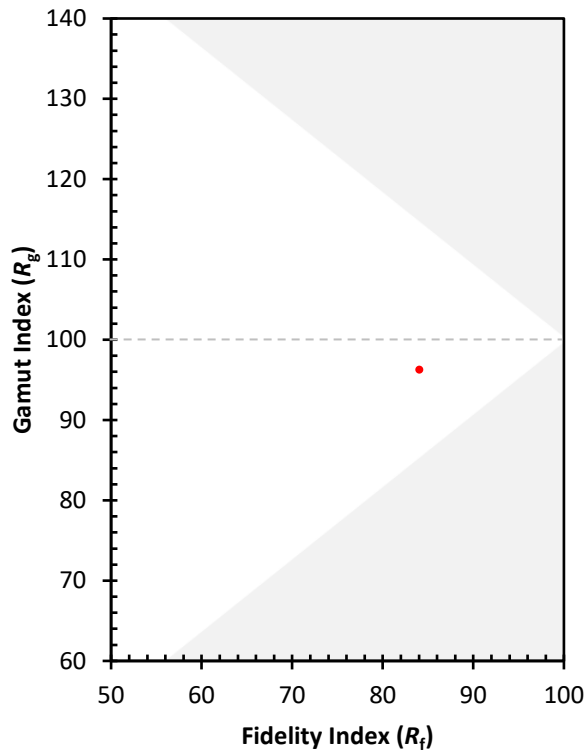




Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)