

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: P1216052

Luminaire Tested: 24-ID2-50-CNC-L850-U

Issue Date: 12/5/2025

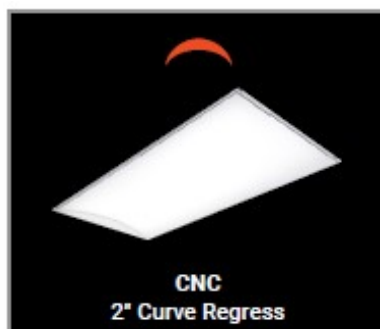
**Test Information**

Test Method: LM-79-2019  
Report Number: P1216052  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2508-510-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 24-ID2-50-CNC-L850-U  
Description: 2X4 IN DEPTH TROFFER WITH 2INCH CURVE REGRESSED  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

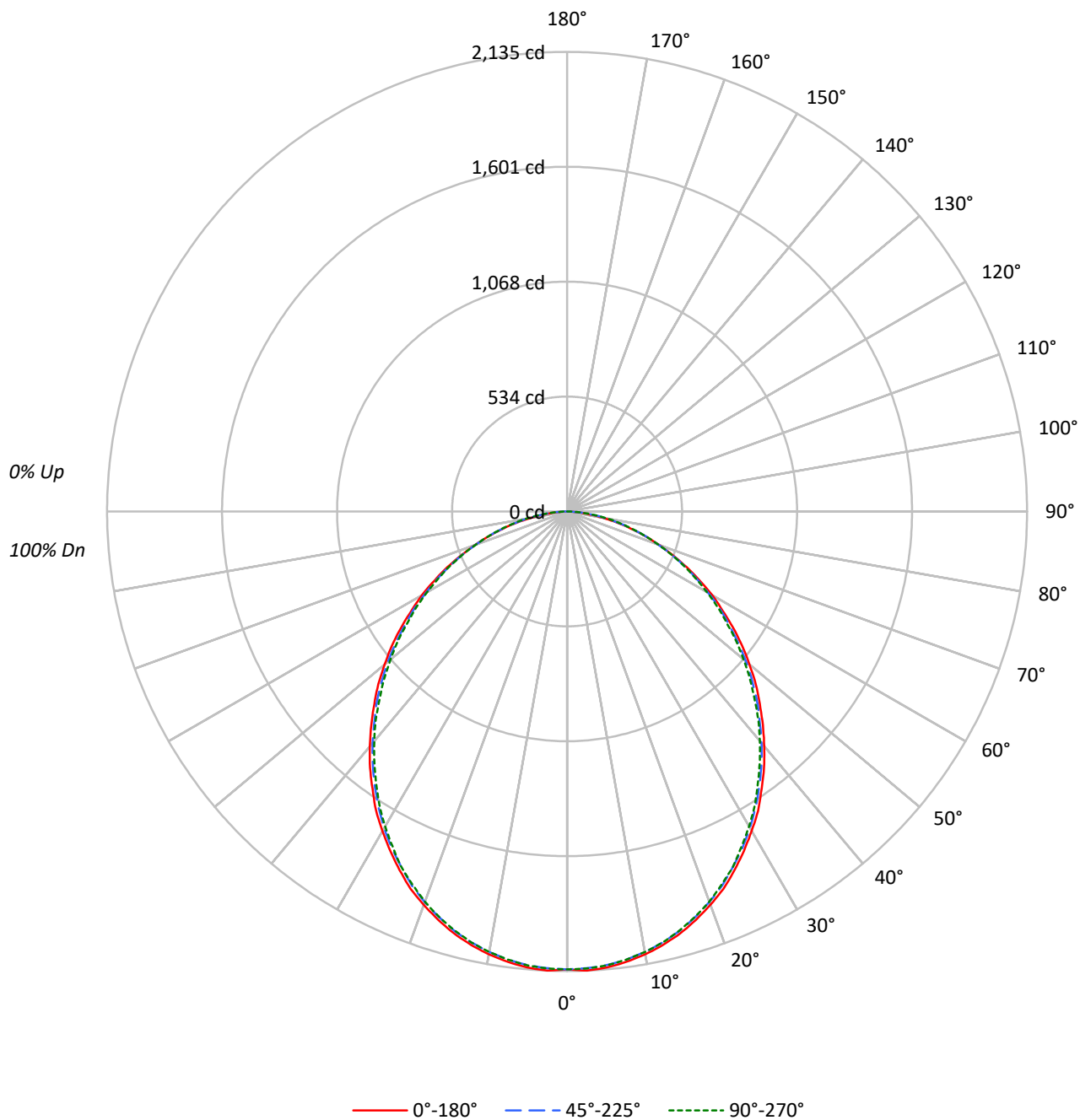
Lumens per Lamp: N/A  
Luminaire Lumens: 5381.7 lumens  
Efficiency: N/A  
Efficacy: 124.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.29  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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: P1216052  
CATALOG NUMBER: 24-ID2-50-CNC-L850-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1216052

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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 | 100 | 97  | 106 | 102 | 99  | 95  | 98  | 95  | 92  |  | 94  | 92  | 89  |  | 85  |
| 2   | 100 | 92  | 85  | 79  | 97  | 90  | 84  | 78  | 86  | 81  | 77  |  | 83  | 79  | 75  |  | 71  |
| 3   | 91  | 81  | 73  | 67  | 89  | 79  | 72  | 66  | 76  | 70  | 65  |  | 74  | 68  | 64  |  | 60  |
| 4   | 84  | 72  | 63  | 57  | 81  | 71  | 63  | 56  | 68  | 61  | 56  |  | 66  | 60  | 55  |  | 52  |
| 5   | 77  | 64  | 56  | 49  | 75  | 63  | 55  | 49  | 61  | 54  | 48  |  | 59  | 53  | 48  |  | 45  |
| 6   | 71  | 58  | 49  | 43  | 69  | 57  | 49  | 43  | 55  | 48  | 42  |  | 54  | 47  | 42  |  | 40  |
| 7   | 66  | 53  | 44  | 38  | 64  | 52  | 44  | 38  | 51  | 43  | 38  |  | 49  | 42  | 37  |  | 35  |
| 8   | 62  | 48  | 40  | 34  | 60  | 48  | 40  | 34  | 46  | 39  | 34  |  | 45  | 38  | 34  |  | 32  |
| 9   | 58  | 44  | 36  | 31  | 56  | 44  | 36  | 31  | 43  | 36  | 31  |  | 42  | 35  | 30  |  | 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°  | 2862 | 2862 | 2862 |
| 5°  | 2872 | 2857 | 2859 |
| 10° | 2855 | 2839 | 2839 |
| 15° | 2827 | 2810 | 2807 |
| 20° | 2784 | 2765 | 2762 |
| 25° | 2729 | 2705 | 2704 |
| 30° | 2662 | 2638 | 2624 |
| 35° | 2585 | 2556 | 2535 |
| 40° | 2501 | 2466 | 2445 |
| 45° | 2407 | 2375 | 2340 |
| 50° | 2312 | 2270 | 2237 |
| 55° | 2204 | 2152 | 2124 |
| 60° | 2095 | 2039 | 2019 |
| 65° | 1951 | 1915 | 1911 |
| 70° | 1785 | 1777 | 1771 |
| 75° | 1595 | 1622 | 1633 |
| 80° | 1301 | 1416 | 1485 |
| 85° | 894  | 1135 | 1135 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2407 cd/sqm

TEST NUMBER: P1216052  
 CATALOG NUMBER: 24-ID2-50-CNC-L850-U

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 200.9  | 3.7       |
| 10°-20°   | 568.8  | 10.6      |
| 20°-30°   | 840.0  | 15.6      |
| 30°-40°   | 973.9  | 18.1      |
| 40°-50°   | 962.0  | 17.9      |
| 50°-60°   | 824.2  | 15.3      |
| 60°-70°   | 598.1  | 11.1      |
| 70°-80°   | 330.1  | 6.1       |
| 80°-90°   | 83.7   | 1.6       |
| 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°    | 1609.7 | 29.9      |
| 0°-40°    | 2583.6 | 48.0      |
| 0°-60°    | 4369.8 | 81.2      |
| 0°-90°    | 5381.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5381.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2127 | 2127  | 2127 | 2127  | 2127 |      |
| 5°  | 2127 | 2118  | 2115 | 2112  | 2117 | 202  |
| 15° | 2029 | 2022  | 2017 | 2013  | 2015 | 572  |
| 25° | 1838 | 1831  | 1822 | 1818  | 1821 | 847  |
| 35° | 1574 | 1568  | 1556 | 1549  | 1544 | 985  |
| 45° | 1265 | 1257  | 1248 | 1235  | 1230 | 977  |
| 55° | 940  | 931   | 917  | 910   | 905  | 841  |
| 65° | 613  | 608   | 602  | 599   | 600  | 606  |
| 75° | 307  | 305   | 312  | 314   | 314  | 325  |
| 85° | 58   | 64    | 74   | 74    | 74   | 73   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

TEST NUMBER: P1216052

CATALOG NUMBER: 24-ID2-50-CNC-L850-U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2127.3 | 2127.3 | 2127.3 | 2127.3 | 2127.3 |
| 2.5°  | 2134.7 | 2127.3 | 2123.6 | 2120.6 | 2125.1 |
| 5°    | 2126.6 | 2118.4 | 2115.4 | 2111.7 | 2116.9 |
| 7.5°  | 2110.2 | 2103.5 | 2099.8 | 2096.9 | 2099.8 |
| 10°   | 2089.4 | 2082.0 | 2078.3 | 2076.1 | 2078.3 |
| 12.5° | 2061.9 | 2056.7 | 2050.8 | 2046.3 | 2050.8 |
| 15°   | 2029.3 | 2021.8 | 2017.4 | 2012.9 | 2015.1 |
| 17.5° | 1989.1 | 1982.5 | 1976.5 | 1972.8 | 1975.0 |
| 20°   | 1944.6 | 1936.4 | 1931.2 | 1927.5 | 1929.0 |
| 22.5° | 1897.8 | 1887.4 | 1880.7 | 1874.8 | 1875.5 |
| 25°   | 1838.4 | 1830.9 | 1822.0 | 1818.3 | 1821.3 |
| 27.5° | 1777.5 | 1769.3 | 1761.9 | 1755.9 | 1754.4 |
| 30°   | 1713.6 | 1706.2 | 1698.0 | 1691.3 | 1689.1 |
| 32.5° | 1649.7 | 1637.1 | 1628.2 | 1621.5 | 1620.7 |
| 35°   | 1573.9 | 1568.0 | 1556.1 | 1548.7 | 1543.5 |
| 37.5° | 1501.9 | 1493.0 | 1481.1 | 1474.4 | 1469.2 |
| 40°   | 1423.9 | 1415.0 | 1403.8 | 1394.2 | 1392.0 |
| 42.5° | 1345.2 | 1338.5 | 1323.6 | 1317.7 | 1314.0 |
| 45°   | 1264.9 | 1256.8 | 1247.9 | 1235.2 | 1230.0 |
| 47.5° | 1188.4 | 1180.3 | 1165.4 | 1154.3 | 1151.3 |
| 50°   | 1104.5 | 1094.8 | 1084.5 | 1071.1 | 1068.9 |
| 52.5° | 1025.0 | 1013.9 | 1000.5 | 994.6  | 990.1  |
| 55°   | 939.6  | 930.7  | 917.3  | 909.9  | 905.4  |
| 57.5° | 854.9  | 849.7  | 840.8  | 830.4  | 829.7  |
| 60°   | 778.4  | 768.0  | 757.6  | 750.2  | 750.2  |
| 62.5° | 693.0  | 689.3  | 678.9  | 674.4  | 672.2  |
| 65°   | 612.8  | 607.6  | 601.6  | 598.7  | 600.2  |
| 67.5° | 530.3  | 529.6  | 525.1  | 525.9  | 524.4  |
| 70°   | 453.8  | 450.9  | 451.6  | 453.1  | 450.1  |
| 72.5° | 379.6  | 377.3  | 381.0  | 381.8  | 383.3  |
| 75°   | 306.8  | 305.3  | 312.0  | 314.2  | 314.2  |
| 77.5° | 234.0  | 238.4  | 245.9  | 251.8  | 251.8  |
| 80°   | 167.9  | 173.8  | 182.7  | 187.9  | 191.6  |
| 82.5° | 107.7  | 117.4  | 125.5  | 129.2  | 129.2  |
| 85°   | 57.9   | 63.9   | 73.5   | 74.3   | 73.5   |
| 87.5° | 17.8   | 22.3   | 26.7   | 28.2   | 29.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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CATALOG NUMBER: 24-ID2-50-CNC-L850-U

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 14.69            | 16.29 | 15.05 | 16.60 | 16.92 | 14.52          | 16.12 | 14.88 | 16.43 | 16.75 |
|                 | 3H   | 16.33            | 17.77 | 16.71 | 18.10 | 18.46 | 16.21          | 17.65 | 16.59 | 17.98 | 18.34 |
|                 | 4H   | 16.91            | 18.27 | 17.31 | 18.62 | 18.99 | 16.84          | 18.20 | 17.24 | 18.54 | 18.92 |
|                 | 6H   | 17.30            | 18.55 | 17.71 | 18.92 | 19.31 | 17.31          | 18.57 | 17.72 | 18.93 | 19.32 |
|                 | 8H   | 17.40            | 18.59 | 17.82 | 18.98 | 19.38 | 17.45          | 18.65 | 17.88 | 19.04 | 19.44 |
|                 | 12H  | 17.45            | 18.59 | 17.87 | 18.97 | 19.40 | 17.54          | 18.69 | 17.97 | 19.07 | 19.50 |
| 4H              | 2H   | 15.25            | 16.61 | 15.65 | 16.96 | 17.34 | 15.12          | 16.48 | 15.52 | 16.82 | 17.20 |
|                 | 3H   | 17.11            | 18.25 | 17.52 | 18.65 | 19.05 | 17.03          | 18.16 | 17.44 | 18.56 | 18.96 |
|                 | 4H   | 17.82            | 18.84 | 18.25 | 19.26 | 19.69 | 17.78          | 18.81 | 18.22 | 19.22 | 19.66 |
|                 | 6H   | 18.32            | 19.21 | 18.77 | 19.65 | 20.11 | 18.38          | 19.28 | 18.84 | 19.72 | 20.17 |
|                 | 8H   | 18.46            | 19.29 | 18.92 | 19.74 | 20.20 | 18.57          | 19.41 | 19.03 | 19.85 | 20.31 |
|                 | 12H  | 18.54            | 19.29 | 19.02 | 19.76 | 20.23 | 18.69          | 19.44 | 19.17 | 19.92 | 20.39 |
| 8H              | 4H   | 18.10            | 18.93 | 18.56 | 19.38 | 19.84 | 18.07          | 18.90 | 18.53 | 19.35 | 19.81 |
|                 | 6H   | 18.71            | 19.40 | 19.20 | 19.89 | 20.36 | 18.78          | 19.47 | 19.27 | 19.96 | 20.44 |
|                 | 8H   | 18.91            | 19.53 | 19.42 | 20.03 | 20.52 | 19.04          | 19.66 | 19.55 | 20.17 | 20.65 |
|                 | 12H  | 19.04            | 19.59 | 19.55 | 20.08 | 20.64 | 19.22          | 19.77 | 19.73 | 20.26 | 20.83 |
| 12H             | 4H   | 18.12            | 18.87 | 18.61 | 19.35 | 19.82 | 18.09          | 18.84 | 18.57 | 19.32 | 19.79 |
|                 | 6H   | 18.75            | 19.38 | 19.26 | 19.88 | 20.37 | 18.82          | 19.44 | 19.33 | 19.95 | 20.44 |
|                 | 8H   | 19.00            | 19.55 | 19.51 | 20.05 | 20.61 | 19.13          | 19.68 | 19.64 | 20.17 | 20.73 |

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



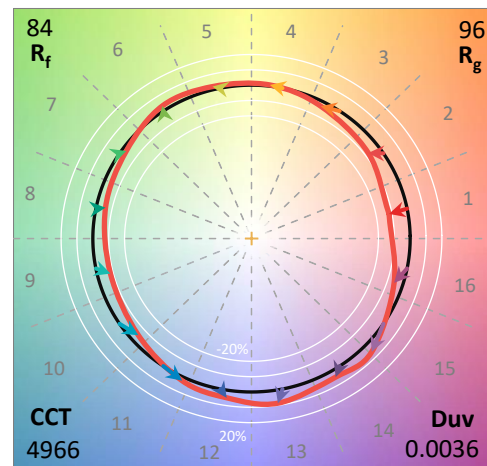
### Test Information

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

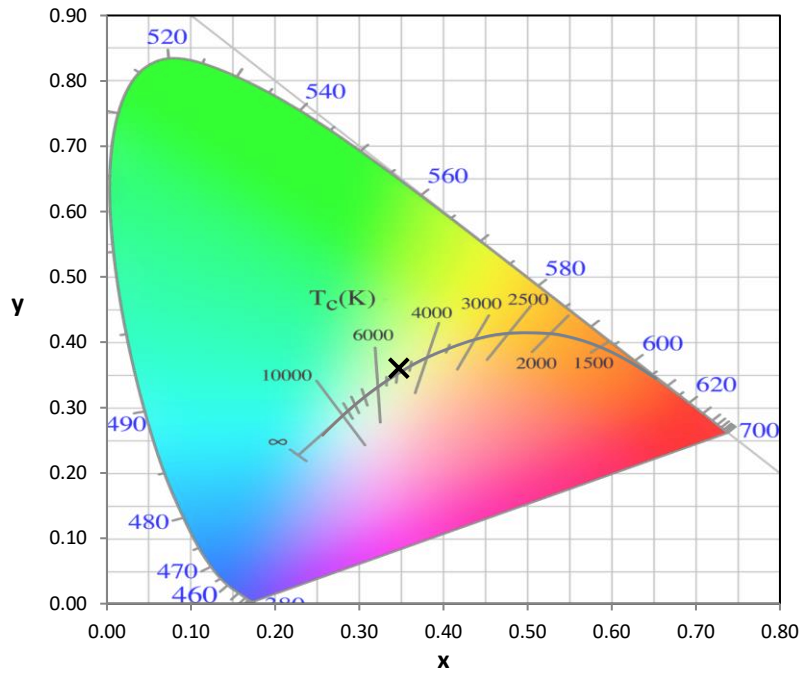
Stabilization Time: 37M  
 Operation Time: 1H 37M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2506-458-7

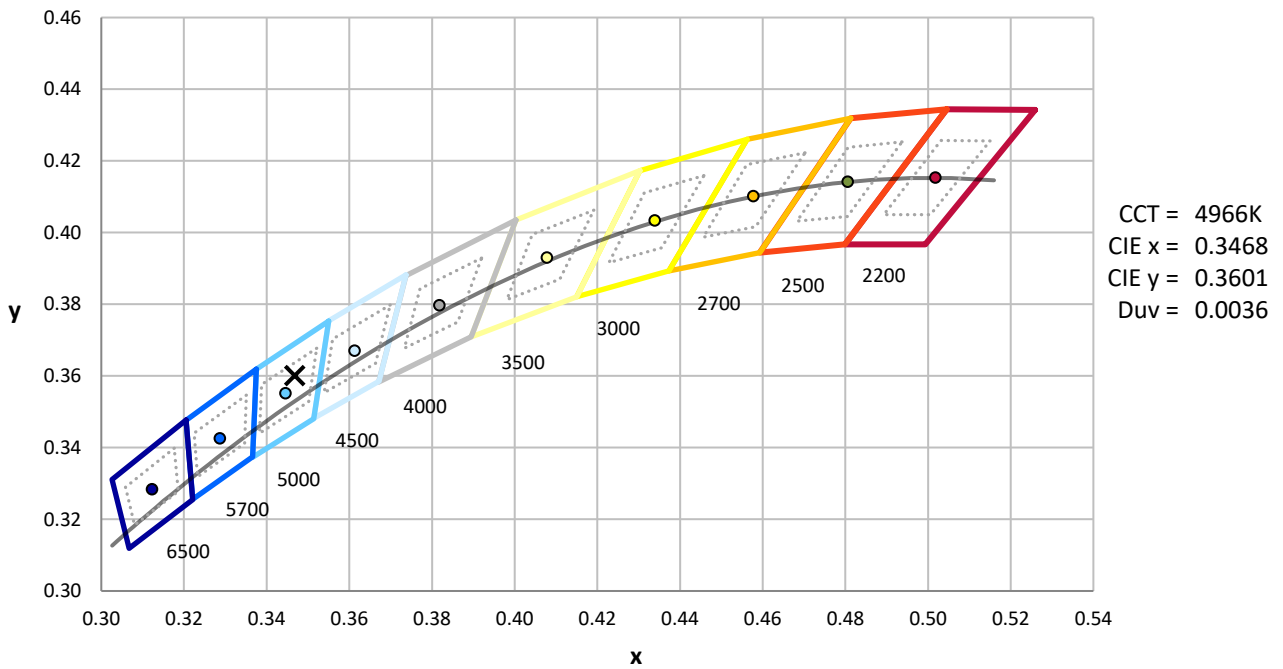
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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           |

REPORT NUMBER: SP1-2506-458-7

**CIE 1931 Chromaticity Diagram**



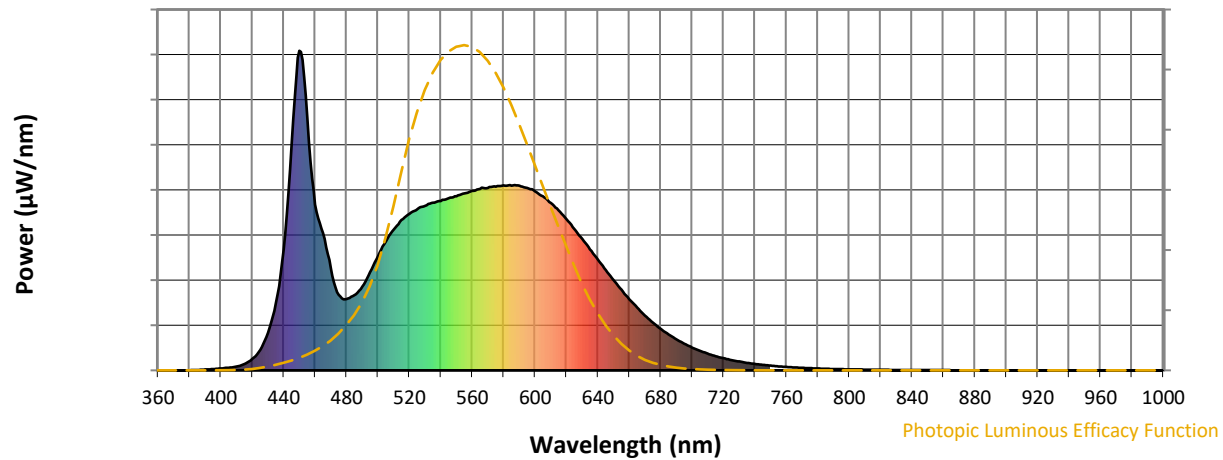
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-2506-458-7

### Photopic Flux vs. Wavelength

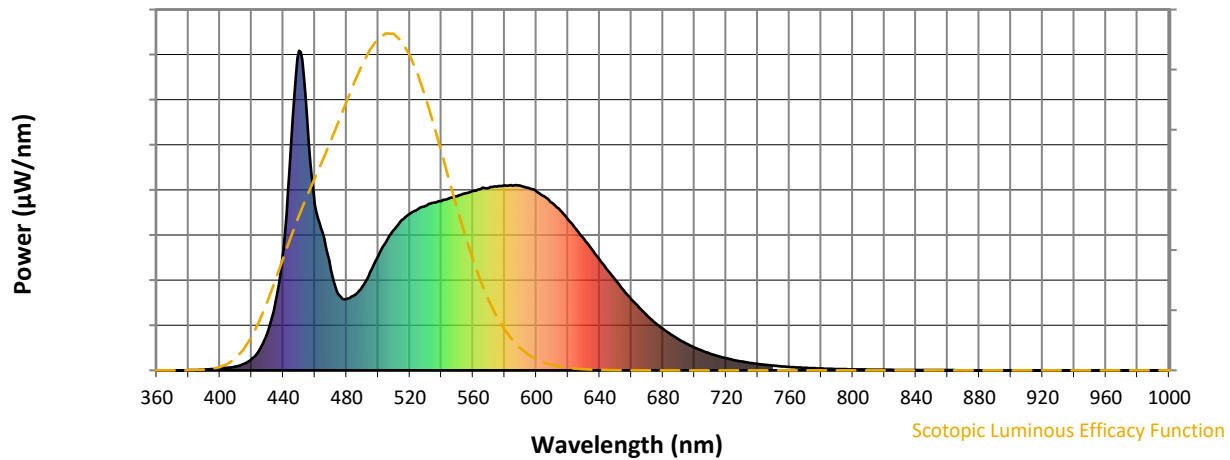


### Photopic Lumens: NR

| 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               |           |                             |                  |

REPORT NUMBER: SP1-2506-458-7

### Scotopic Flux vs. Wavelength



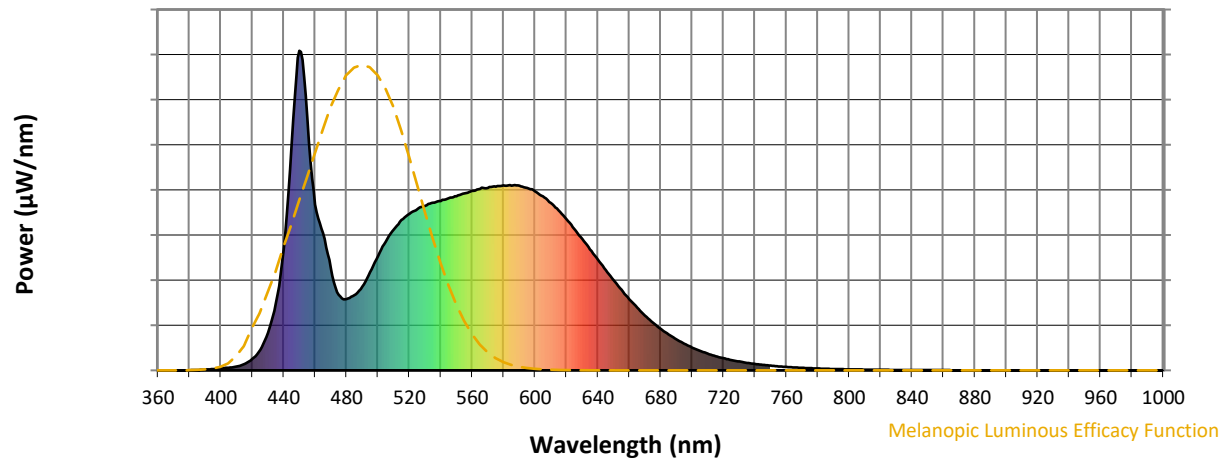
Scotopic Lumens: NR

S/P: 1.94

| $\lambda$<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               | 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                             |                   |                                      |                                |

REPORT NUMBER: SP1-2506-458-7

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.11

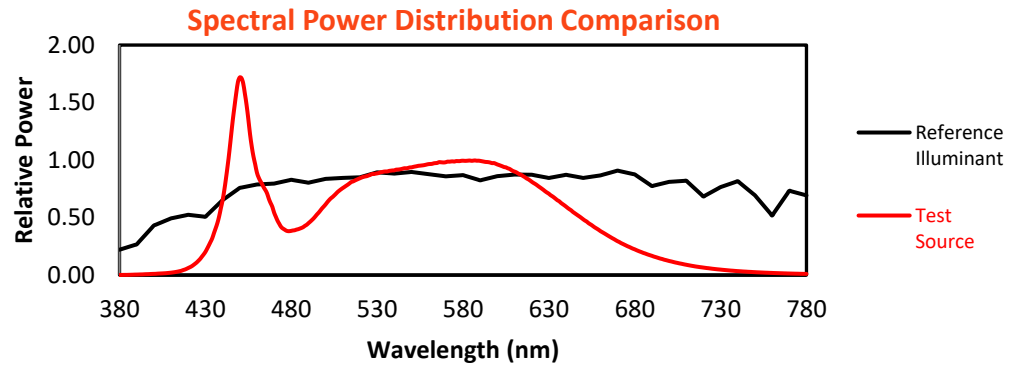
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm)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

REPORT NUMBER: SP1-2506-458-7

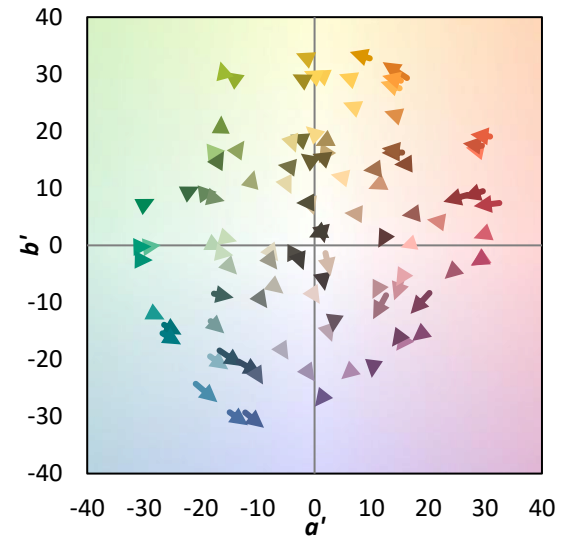
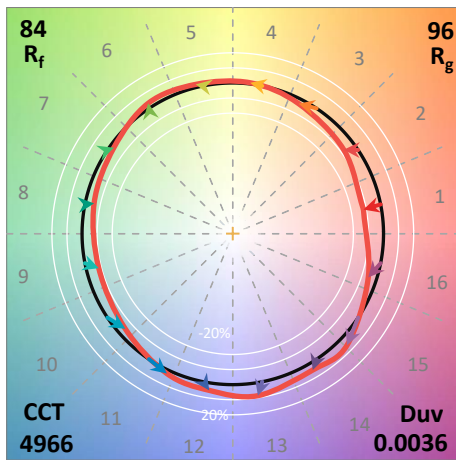
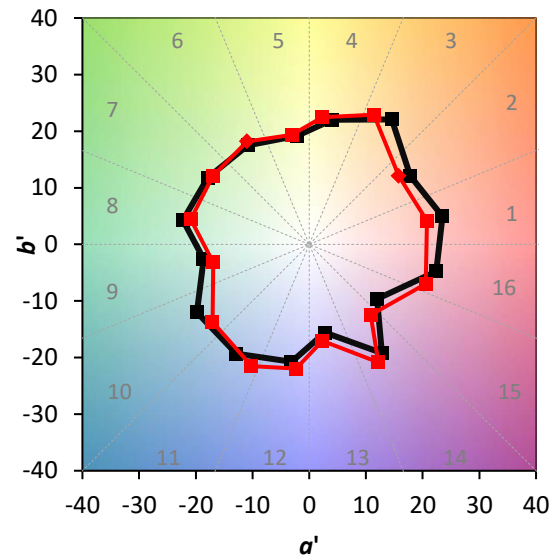
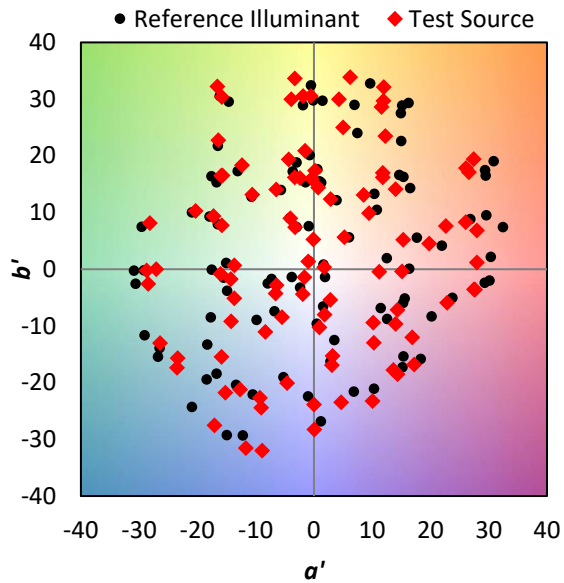
TM-30-18

### Summary

$R_f = 84$   
 $R_g = 96.2$   
 $\text{CIE } R_a = 83.1$   
 $R_9 = 10.3$

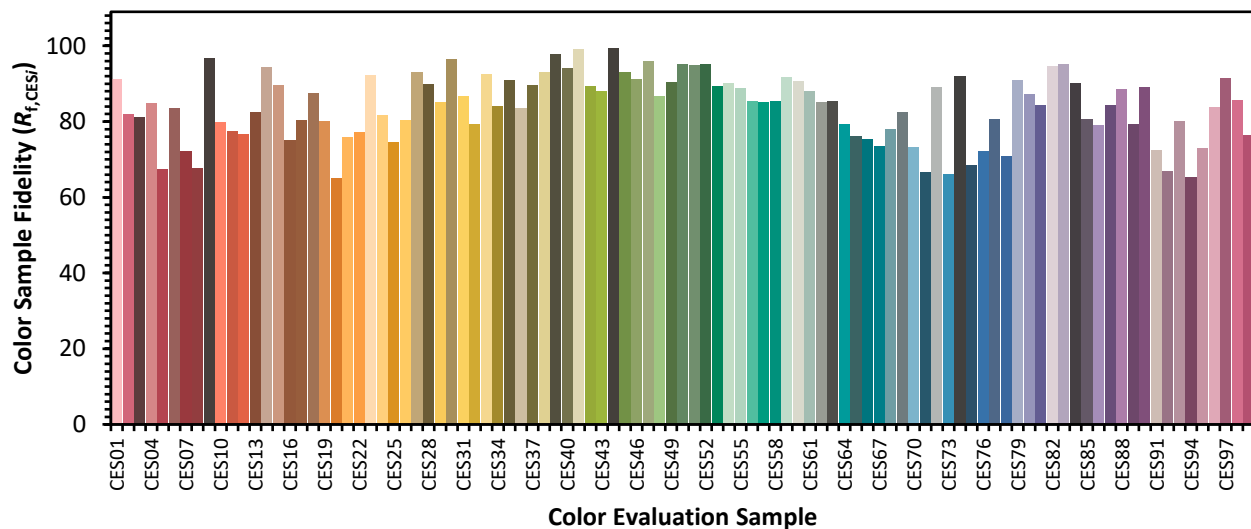


### Color Vector Graphics



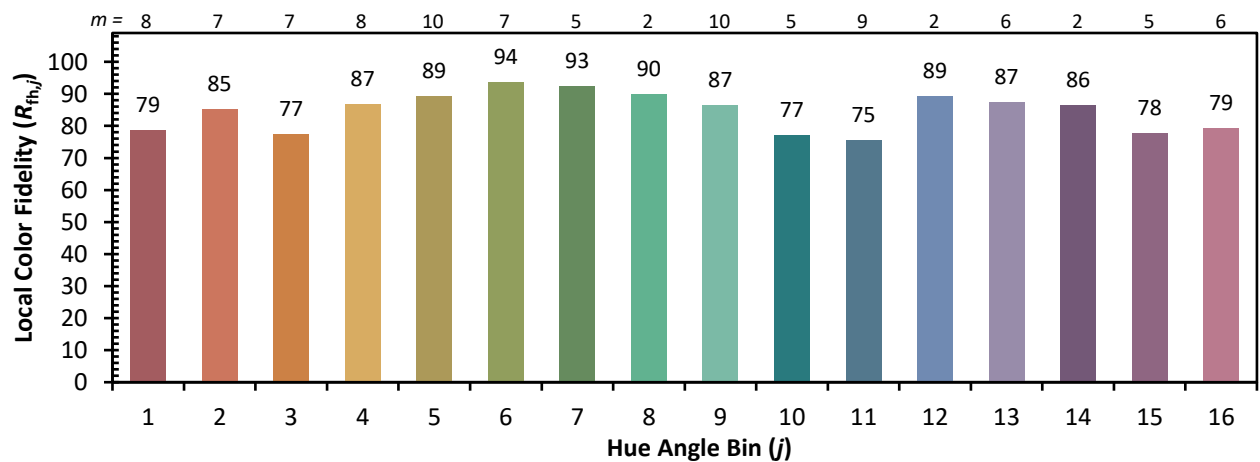
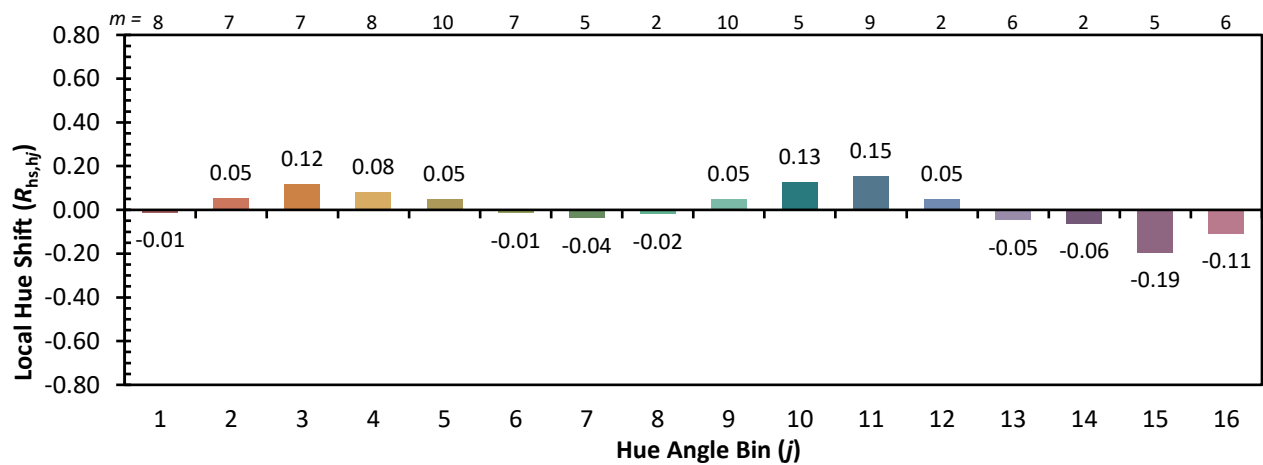
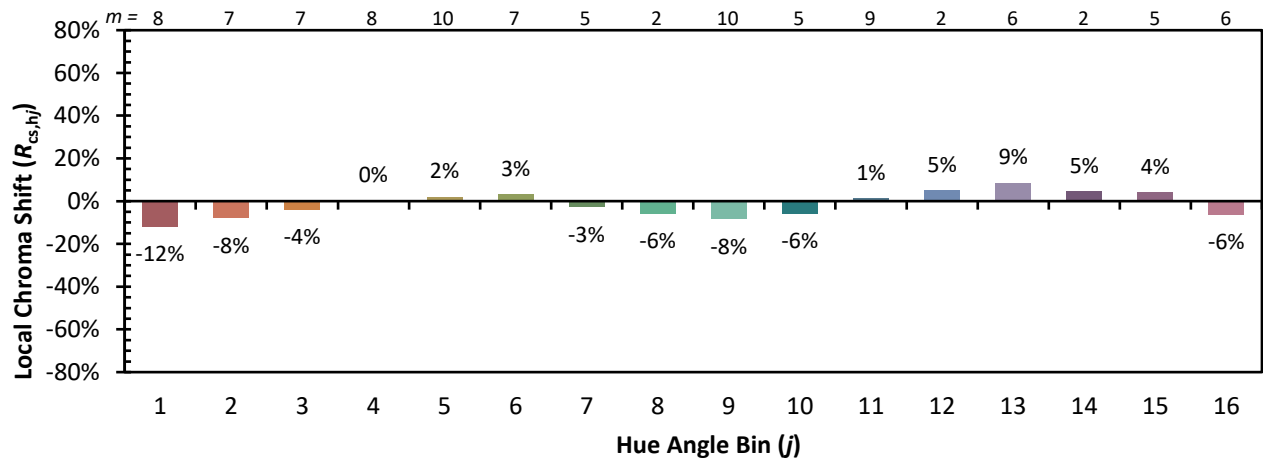
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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 |            |

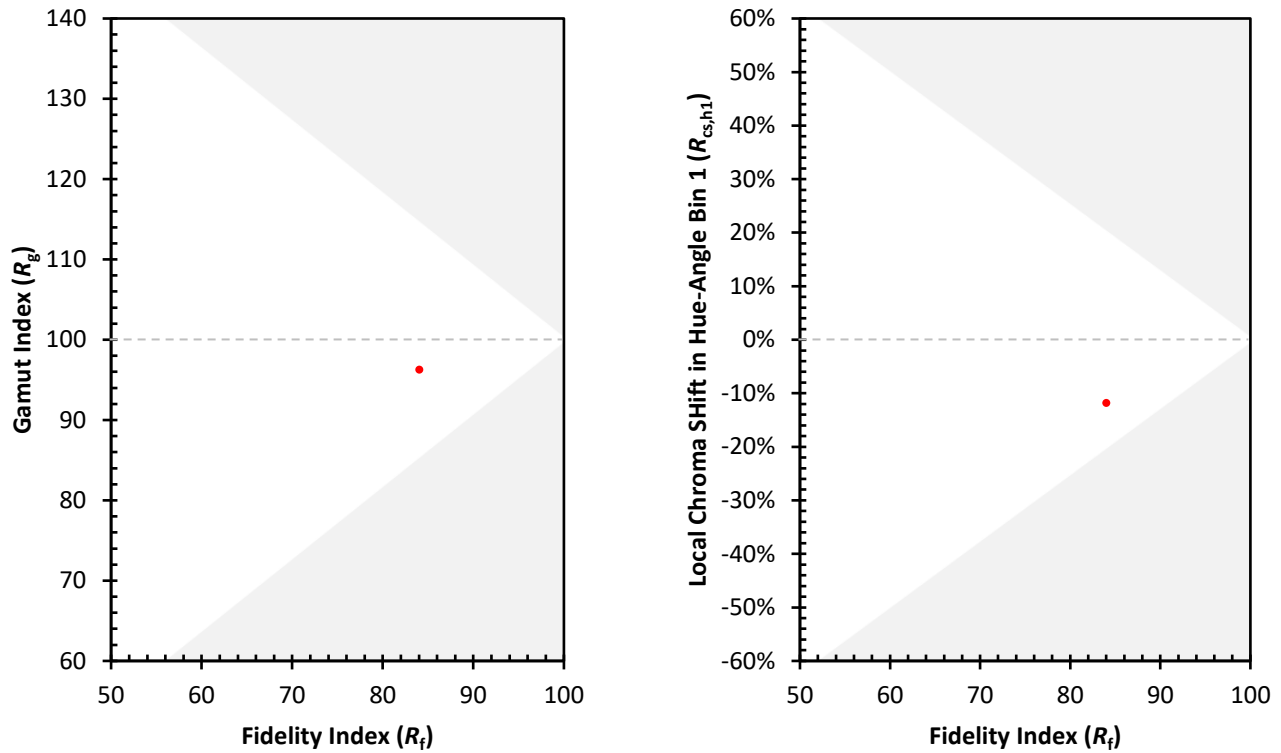




Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)