

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: P1214677

Luminaire Tested: 22-ID2-45-CFR2-L930-U

Issue Date: 12/4/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1214677  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2506-458-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/4/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 22-ID2-45-CFR2-L930-U  
Description: 2X2 IN DEPTH TROFFER WITH 2INCH CUBE REGRESS LENS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

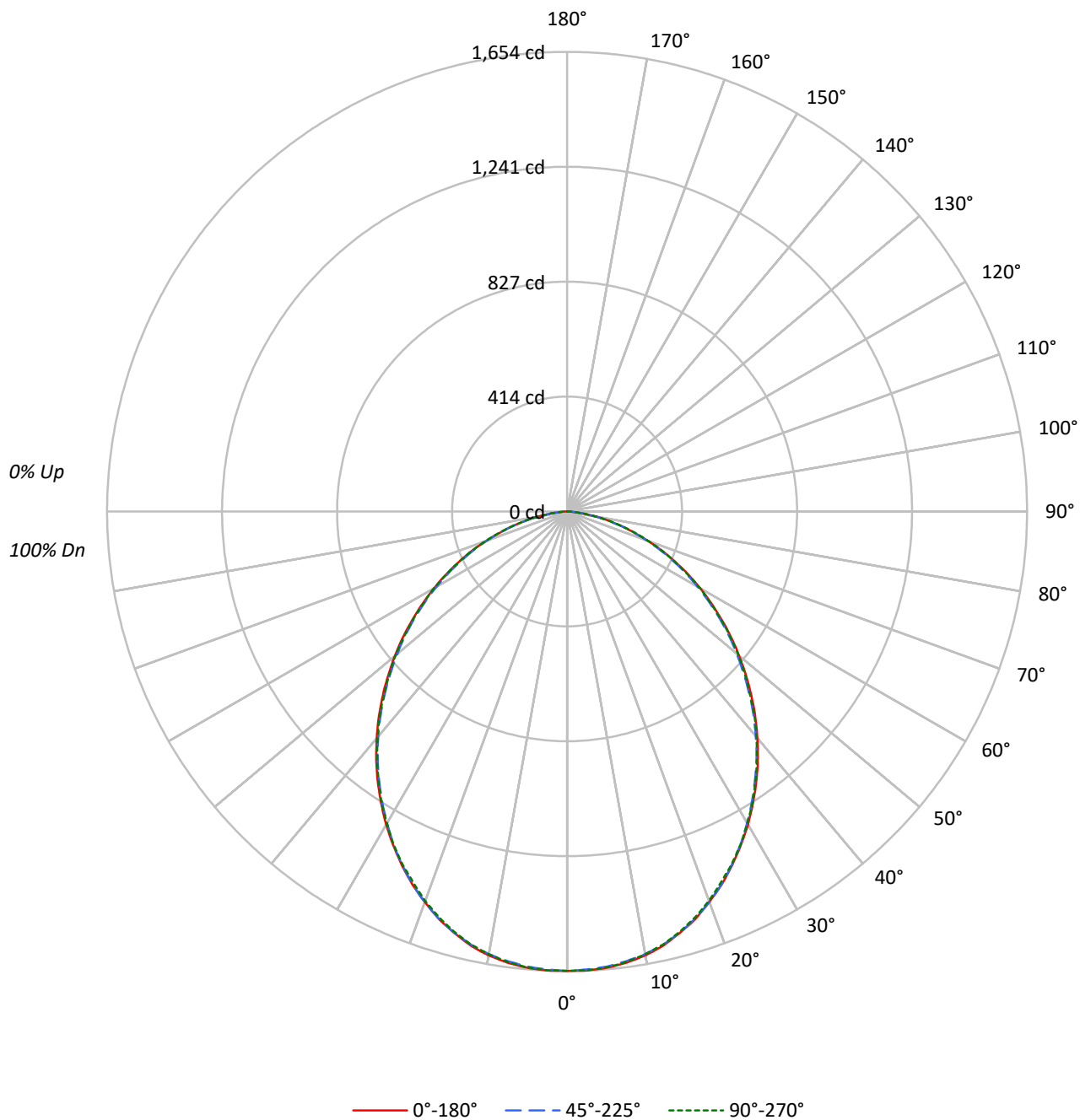
Lumens per Lamp: N/A  
Luminaire Lumens: 3980.0 lumens  
Efficiency: N/A  
Efficacy: 102.3 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.17 / 1.27  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.9  
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: P1214677  
CATALOG NUMBER: 22-ID2-45-CFR2-L930-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1214677

CATALOG NUMBER: 22-ID2-45-CFR2-L930-U

**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   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  |  | 95  | 92  | 90  |  | 85  |
| 2   | 100 | 92  | 86  | 81  | 98  | 91  | 85  | 80  | 87  | 82  | 78  |  | 84  | 80  | 76  |  | 72  |
| 3   | 92  | 82  | 74  | 68  | 89  | 80  | 73  | 67  | 77  | 71  | 66  |  | 75  | 69  | 65  |  | 62  |
| 4   | 84  | 73  | 64  | 58  | 82  | 72  | 64  | 58  | 69  | 62  | 57  |  | 67  | 61  | 56  |  | 53  |
| 5   | 78  | 65  | 57  | 50  | 76  | 64  | 56  | 50  | 62  | 55  | 50  |  | 60  | 54  | 49  |  | 46  |
| 6   | 72  | 59  | 50  | 44  | 70  | 58  | 50  | 44  | 56  | 49  | 44  |  | 55  | 48  | 43  |  | 41  |
| 7   | 67  | 54  | 45  | 39  | 65  | 53  | 45  | 39  | 51  | 44  | 39  |  | 50  | 44  | 39  |  | 36  |
| 8   | 62  | 49  | 41  | 35  | 61  | 49  | 41  | 35  | 47  | 40  | 35  |  | 46  | 40  | 35  |  | 33  |
| 9   | 58  | 45  | 37  | 32  | 57  | 45  | 37  | 32  | 44  | 37  | 32  |  | 43  | 36  | 31  |  | 30  |
| 10  | 55  | 42  | 34  | 29  | 54  | 41  | 34  | 29  | 40  | 34  | 29  |  | 39  | 33  | 29  |  | 27  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4449 | 4449 | 4449 |
| 5°  | 4452 | 4441 | 4448 |
| 10° | 4433 | 4420 | 4421 |
| 15° | 4373 | 4372 | 4364 |
| 20° | 4283 | 4285 | 4271 |
| 25° | 4171 | 4165 | 4158 |
| 30° | 4044 | 4024 | 4025 |
| 35° | 3898 | 3870 | 3882 |
| 40° | 3739 | 3711 | 3721 |
| 45° | 3566 | 3524 | 3537 |
| 50° | 3382 | 3334 | 3369 |
| 55° | 3183 | 3137 | 3162 |
| 60° | 2970 | 2913 | 2972 |
| 65° | 2728 | 2677 | 2719 |
| 70° | 2433 | 2405 | 2445 |
| 75° | 2093 | 2057 | 2114 |
| 80° | 1595 | 1595 | 1657 |
| 85° | 874  | 936  | 920  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3566 cd/sqm

TEST NUMBER: P1214677  
 CATALOG NUMBER: 22-ID2-45-CFR2-L930-U

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 156.2  | 3.9       |
| 10°-20°   | 441.5  | 11.1      |
| 20°-30°   | 645.9  | 16.2      |
| 30°-40°   | 739.5  | 18.6      |
| 40°-50°   | 718.2  | 18.0      |
| 50°-60°   | 602.0  | 15.1      |
| 60°-70°   | 420.6  | 10.6      |
| 70°-80°   | 213.4  | 5.4       |
| 80°-90°   | 42.6   | 1.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1243.7 | 31.2      |
| 0°-40°    | 1983.1 | 49.8      |
| 0°-60°    | 3303.4 | 83.0      |
| 0°-90°    | 3980.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3980.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1653 | 1653  | 1653 | 1653  | 1653 |      |
| 5°  | 1648 | 1646  | 1644 | 1644  | 1647 | 157  |
| 15° | 1570 | 1569  | 1569 | 1566  | 1566 | 442  |
| 25° | 1405 | 1407  | 1403 | 1404  | 1400 | 647  |
| 35° | 1186 | 1186  | 1178 | 1183  | 1182 | 742  |
| 45° | 937  | 934   | 926  | 930   | 930  | 723  |
| 55° | 678  | 672   | 669  | 674   | 674  | 607  |
| 65° | 428  | 422   | 420  | 424   | 427  | 426  |
| 75° | 201  | 199   | 198  | 201   | 203  | 214  |
| 85° | 28   | 29    | 30   | 31    | 30   | 42   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

TEST NUMBER: P1214677

CATALOG NUMBER: 22-ID2-45-CFR2-L930-U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1653.3 | 1653.3 | 1653.3 | 1653.3 | 1653.3 |
| 2.5°  | 1653.8 | 1652.3 | 1649.8 | 1650.8 | 1652.3 |
| 5°    | 1648.3 | 1645.9 | 1643.9 | 1644.4 | 1646.8 |
| 7.5°  | 1637.9 | 1634.9 | 1632.4 | 1633.4 | 1635.4 |
| 10°   | 1622.5 | 1619.5 | 1617.5 | 1617.5 | 1618.0 |
| 12.5° | 1600.6 | 1597.6 | 1596.6 | 1595.1 | 1596.1 |
| 15°   | 1569.8 | 1569.3 | 1569.3 | 1565.8 | 1566.3 |
| 17.5° | 1537.0 | 1535.5 | 1535.5 | 1531.5 | 1531.0 |
| 20°   | 1495.7 | 1495.7 | 1496.2 | 1493.7 | 1491.3 |
| 22.5° | 1453.0 | 1453.5 | 1452.5 | 1450.0 | 1445.0 |
| 25°   | 1404.8 | 1407.2 | 1402.8 | 1403.8 | 1400.3 |
| 27.5° | 1354.1 | 1354.6 | 1351.1 | 1352.6 | 1351.1 |
| 30°   | 1301.4 | 1301.4 | 1294.9 | 1300.4 | 1295.4 |
| 32.5° | 1244.2 | 1246.2 | 1237.7 | 1242.2 | 1241.7 |
| 35°   | 1186.5 | 1186.0 | 1178.1 | 1183.1 | 1181.6 |
| 37.5° | 1127.4 | 1124.9 | 1118.9 | 1121.9 | 1121.9 |
| 40°   | 1064.3 | 1061.3 | 1056.3 | 1060.8 | 1059.3 |
| 42.5° | 1002.1 | 998.1  | 991.7  | 994.7  | 997.7  |
| 45°   | 937.0  | 933.5  | 926.1  | 930.0  | 929.5  |
| 47.5° | 872.4  | 868.9  | 860.5  | 864.9  | 866.9  |
| 50°   | 807.8  | 804.3  | 796.3  | 800.8  | 804.8  |
| 52.5° | 744.1  | 738.2  | 733.2  | 738.7  | 738.7  |
| 55°   | 678.5  | 672.1  | 668.6  | 673.6  | 674.0  |
| 57.5° | 614.9  | 609.4  | 605.0  | 609.4  | 609.9  |
| 60°   | 551.8  | 547.3  | 541.3  | 546.3  | 552.3  |
| 62.5° | 491.1  | 485.7  | 480.7  | 484.7  | 487.6  |
| 65°   | 428.5  | 422.5  | 420.5  | 423.5  | 427.0  |
| 67.5° | 371.3  | 365.4  | 361.9  | 363.4  | 369.8  |
| 70°   | 309.2  | 308.7  | 305.7  | 306.2  | 310.7  |
| 72.5° | 253.5  | 252.0  | 251.5  | 253.5  | 257.5  |
| 75°   | 201.3  | 198.8  | 197.8  | 200.8  | 203.3  |
| 77.5° | 153.1  | 151.6  | 149.1  | 150.6  | 151.6  |
| 80°   | 102.9  | 102.4  | 102.9  | 106.4  | 106.9  |
| 82.5° | 62.6   | 62.6   | 63.1   | 66.1   | 64.1   |
| 85°   | 28.3   | 28.8   | 30.3   | 30.8   | 29.8   |
| 87.5° | 10.4   | 10.9   | 10.4   | 11.9   | 10.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

TEST NUMBER: P1214677

CATALOG NUMBER: 22-ID2-45-CFR2-L930-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 | 15.87            | 17.44 | 16.23 | 17.76 | 18.07 | 15.86          | 17.43 | 16.22 | 17.74 | 18.06 |
|                 | 3H   | 17.41            | 18.82 | 17.78 | 19.15 | 19.51 | 17.39          | 18.80 | 17.77 | 19.13 | 19.49 |
|                 | 4H   | 17.91            | 19.24 | 18.31 | 19.59 | 19.97 | 17.91          | 19.24 | 18.31 | 19.59 | 19.96 |
|                 | 6H   | 18.22            | 19.45 | 18.63 | 19.82 | 20.21 | 18.22          | 19.45 | 18.64 | 19.82 | 20.21 |
|                 | 8H   | 18.28            | 19.46 | 18.71 | 19.84 | 20.24 | 18.29          | 19.46 | 18.72 | 19.85 | 20.25 |
|                 | 12H  | 18.30            | 19.42 | 18.73 | 19.80 | 20.23 | 18.31          | 19.43 | 18.74 | 19.82 | 20.25 |
| 4H              | 2H   | 16.40            | 17.73 | 16.80 | 18.08 | 18.46 | 16.39          | 17.72 | 16.79 | 18.07 | 18.45 |
|                 | 3H   | 18.14            | 19.25 | 18.55 | 19.65 | 20.05 | 18.13          | 19.24 | 18.54 | 19.63 | 20.03 |
|                 | 4H   | 18.76            | 19.75 | 19.19 | 20.17 | 20.60 | 18.76          | 19.75 | 19.19 | 20.17 | 20.61 |
|                 | 6H   | 19.16            | 20.03 | 19.62 | 20.47 | 20.93 | 19.17          | 20.04 | 19.63 | 20.48 | 20.94 |
|                 | 8H   | 19.25            | 20.06 | 19.71 | 20.50 | 20.97 | 19.27          | 20.08 | 19.73 | 20.52 | 20.99 |
|                 | 12H  | 19.29            | 20.01 | 19.77 | 20.49 | 20.96 | 19.31          | 20.03 | 19.79 | 20.51 | 20.98 |
| 8H              | 4H   | 18.97            | 19.78 | 19.44 | 20.23 | 20.69 | 18.98          | 19.79 | 19.44 | 20.23 | 20.70 |
|                 | 6H   | 19.46            | 20.13 | 19.95 | 20.62 | 21.09 | 19.47          | 20.14 | 19.97 | 20.63 | 21.11 |
|                 | 8H   | 19.58            | 20.18 | 20.09 | 20.69 | 21.18 | 19.61          | 20.21 | 20.12 | 20.72 | 21.20 |
|                 | 12H  | 19.65            | 20.18 | 20.16 | 20.67 | 21.23 | 19.68          | 20.21 | 20.19 | 20.71 | 21.27 |
| 12H             | 4H   | 18.98            | 19.71 | 19.46 | 20.18 | 20.66 | 18.98          | 19.71 | 19.46 | 20.18 | 20.66 |
|                 | 6H   | 19.47            | 20.07 | 19.98 | 20.58 | 21.07 | 19.48          | 20.08 | 20.00 | 20.59 | 21.08 |
|                 | 8H   | 19.63            | 20.16 | 20.14 | 20.66 | 21.22 | 19.66          | 20.19 | 20.17 | 20.68 | 21.25 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-9

Test Date: 08/26/2025

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

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

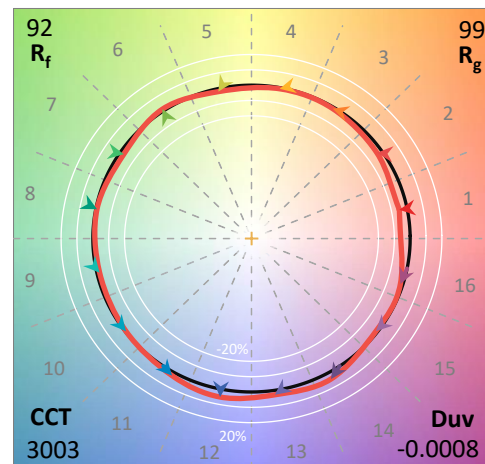
### Test Information

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

### Spectral Parameters

CCT (K): 3003  
 CIE  $u'$ : 0.2507  
 CIE  $v'$ : 0.5202  
 Duv: -0.0008  
 CIE x: 0.4356  
 CIE y: 0.4017  
 CIE z: 0.1627  
 Peak Wavelength (nm): 618  
 Dominant Wavelength (nm): 583  
 Purity: 51.31044  
 R<sub>f</sub>: 91.9  
 R<sub>g</sub>: 99.2

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



### Test Conditions

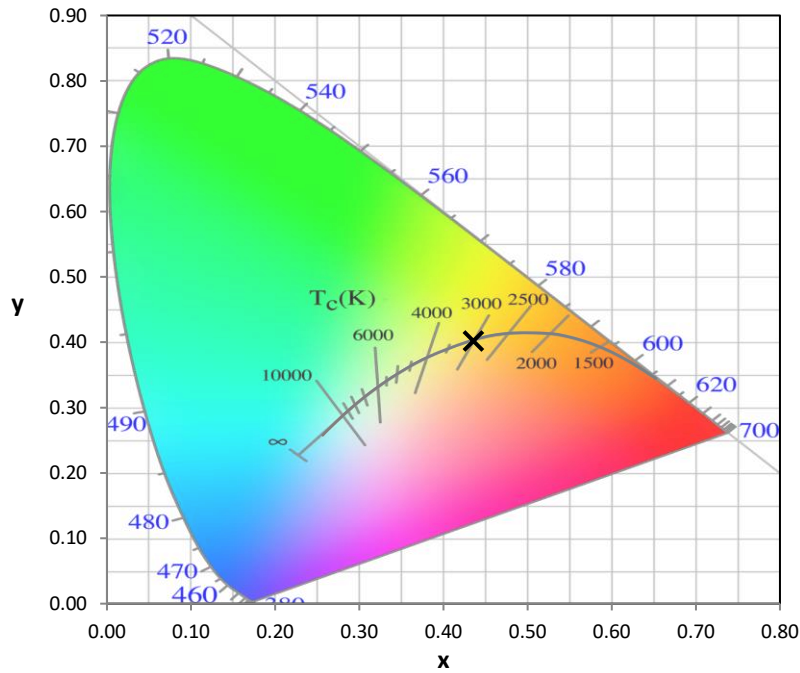
Stabilization Time: 32M  
 Operation Time: 1H 32M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2506-458-9

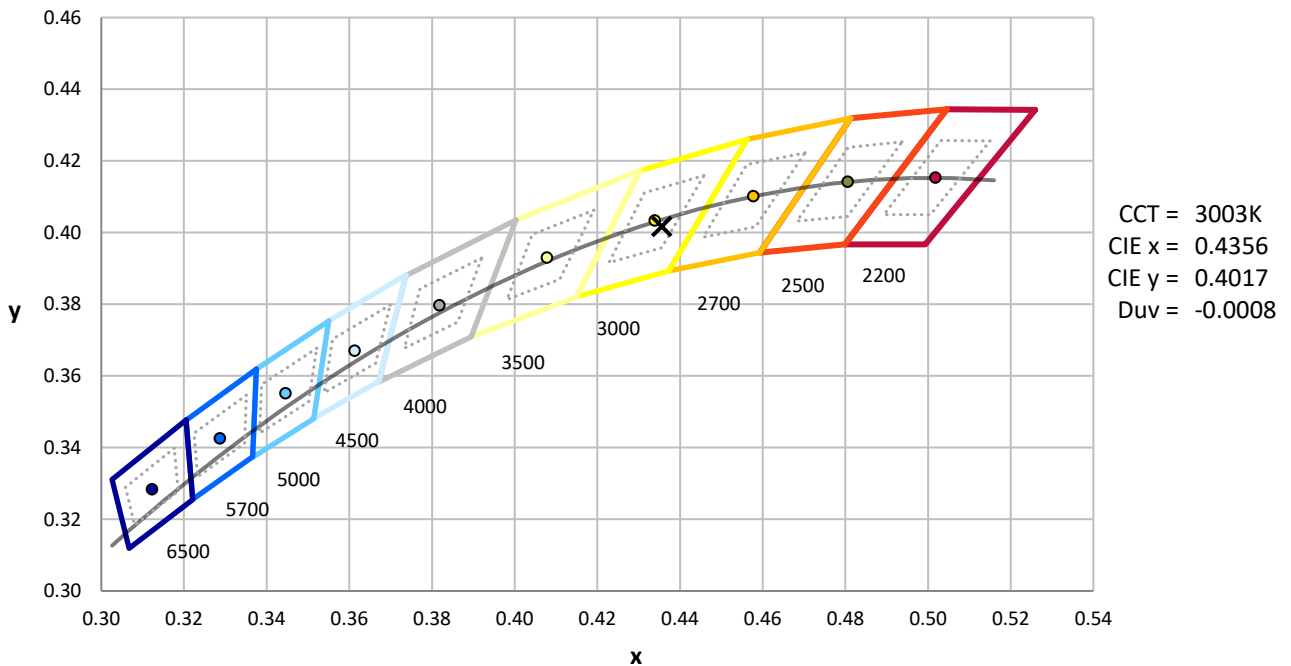
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

REPORT NUMBER: SP1-2506-458-9

**CIE 1931 Chromaticity Diagram**



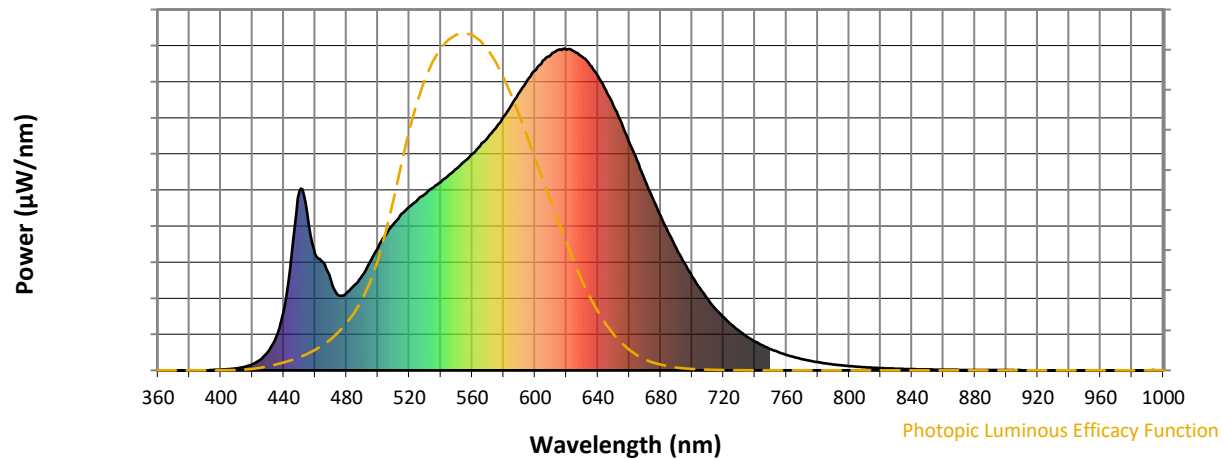
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2506-458-9

### Photopic Flux vs. Wavelength

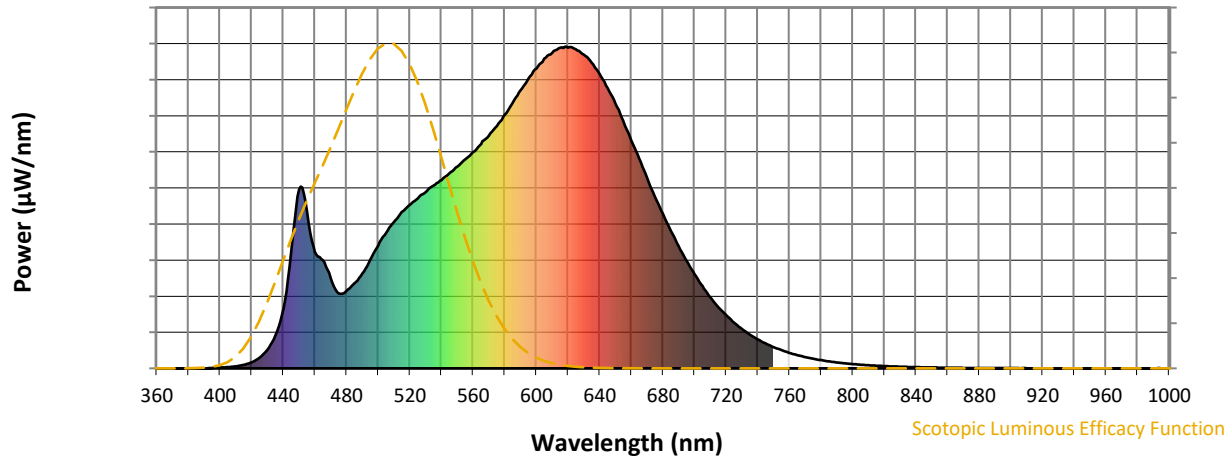


### Photopic Lumens: NR

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

REPORT NUMBER: SP1-2506-458-9

### Scotopic Flux vs. Wavelength



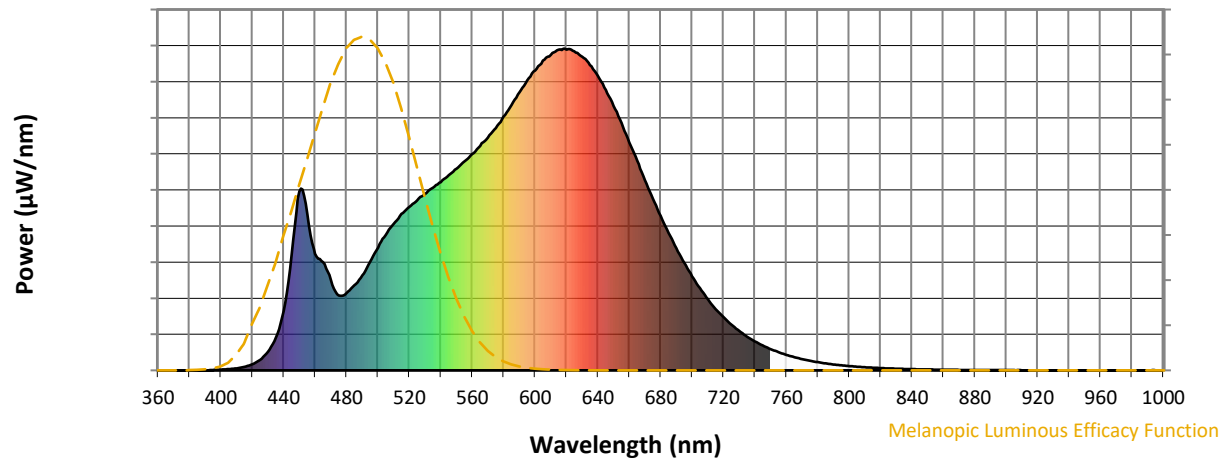
Scotopic Lumens: NR

S/P: 1.43

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

REPORT NUMBER: SP1-2506-458-9

### Melanopic Flux vs. Wavelength


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

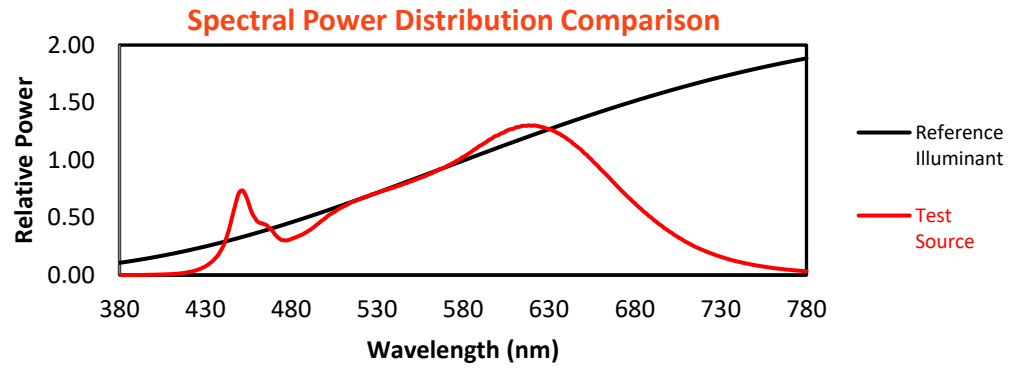
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power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

REPORT NUMBER: SP1-2506-458-9

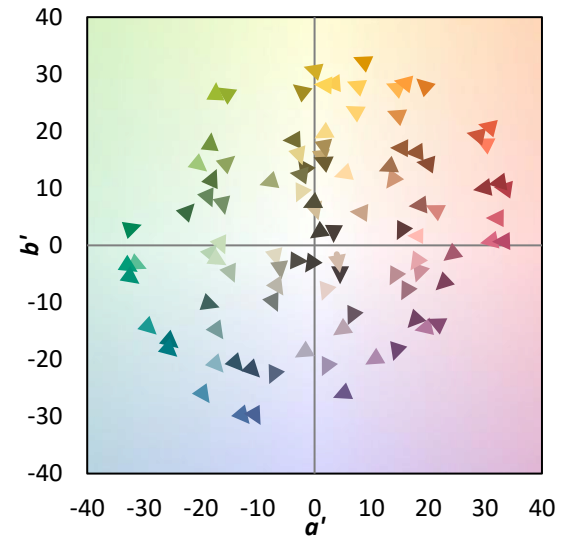
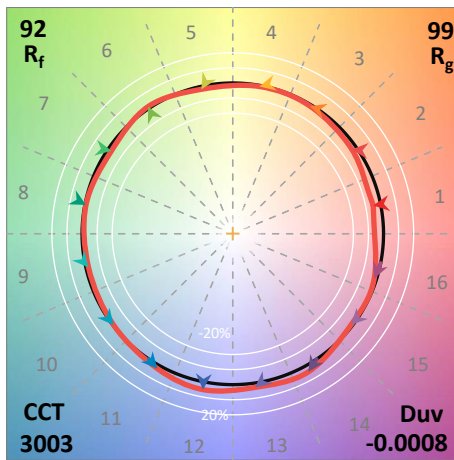
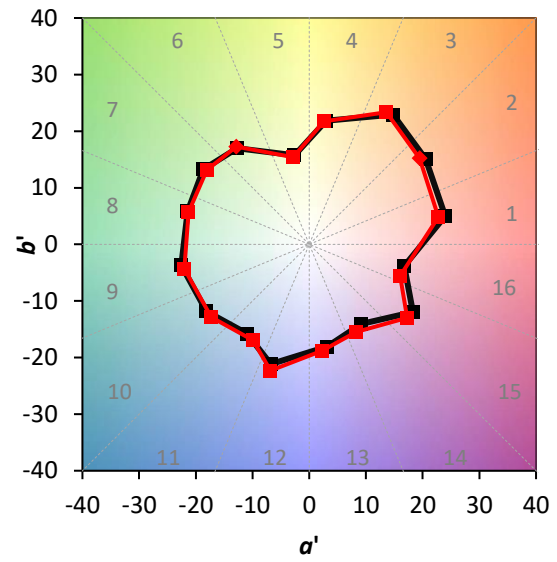
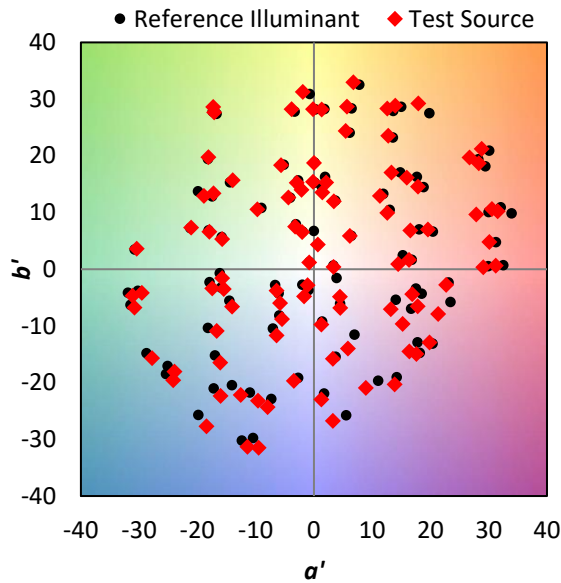
TM-30-18

### Summary

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

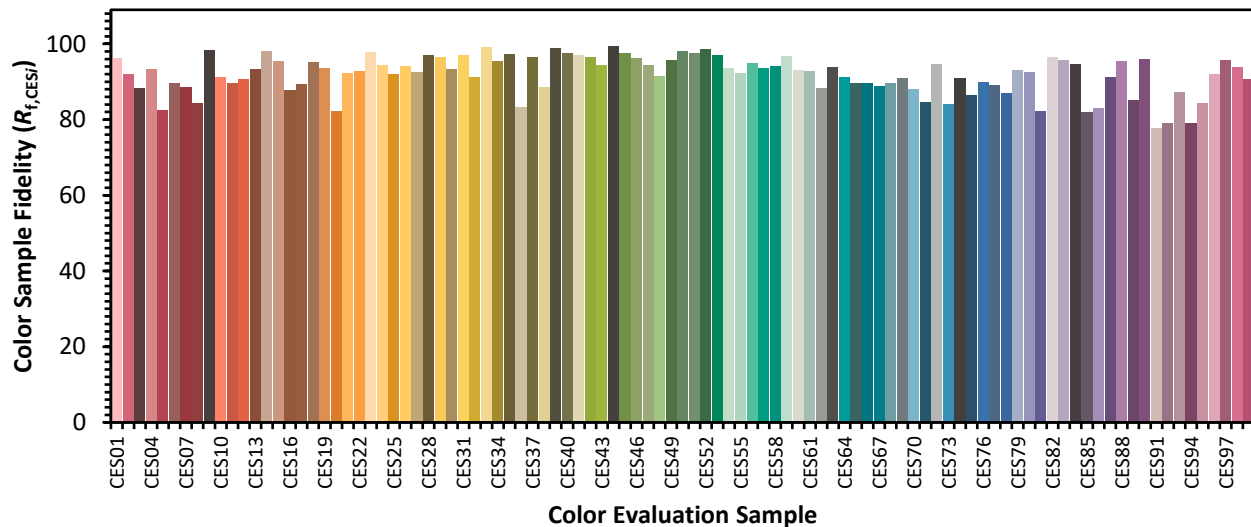


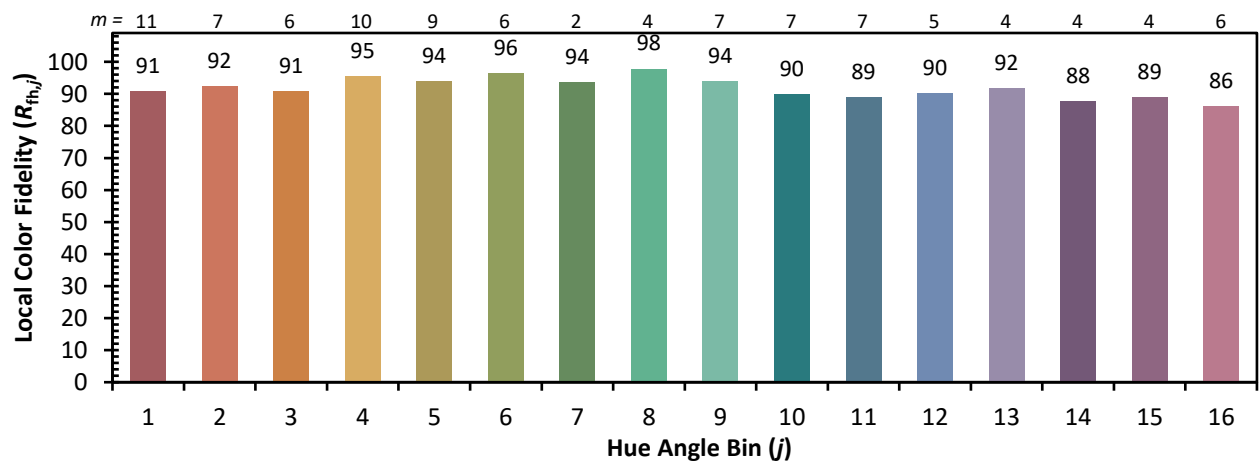
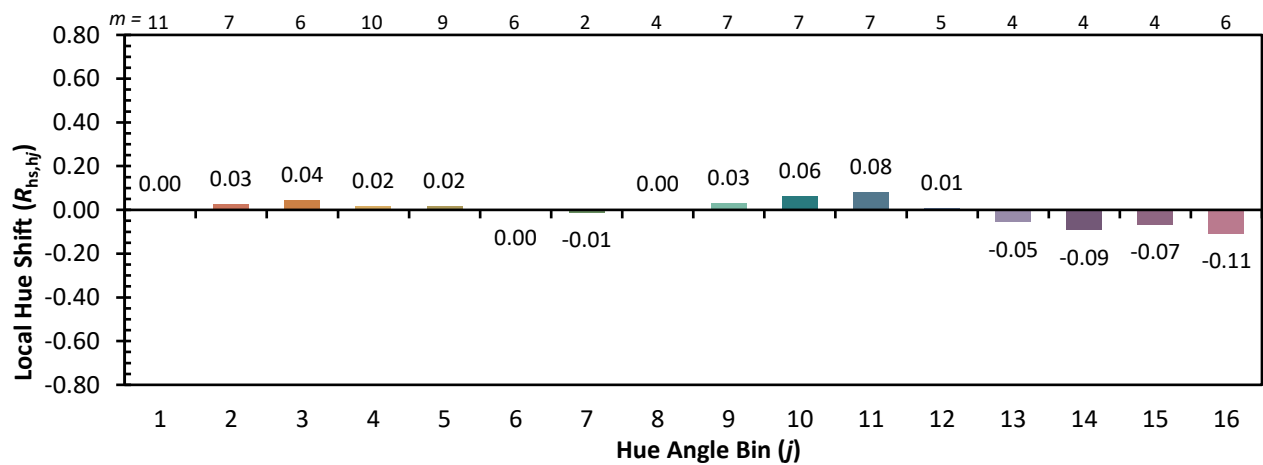
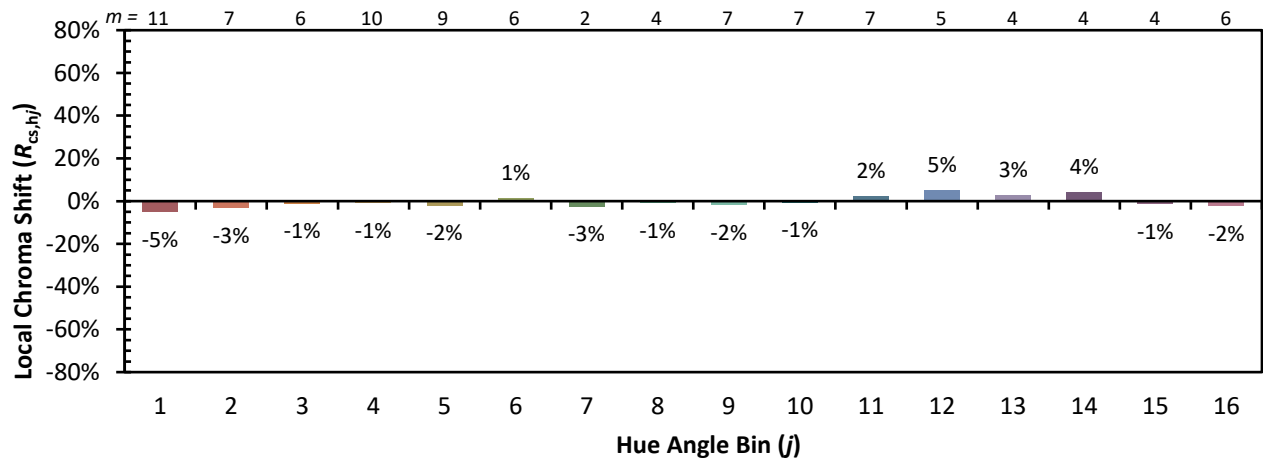
### Color Vector Graphics



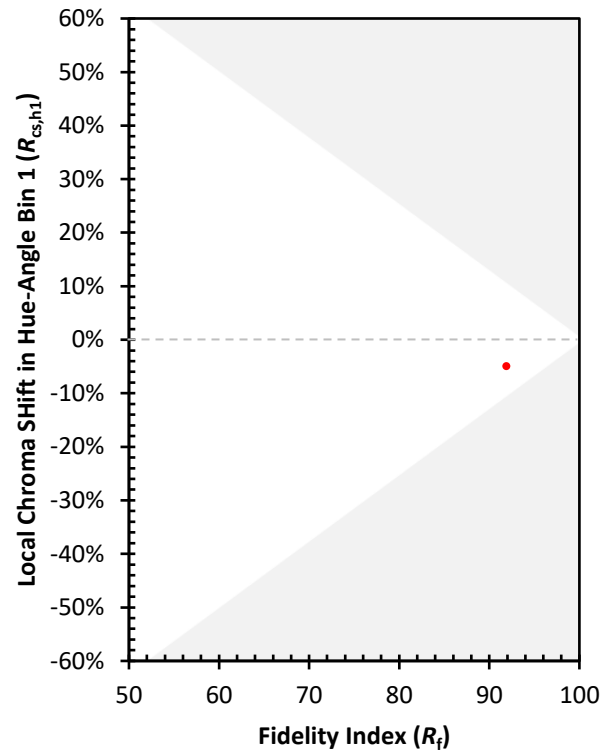
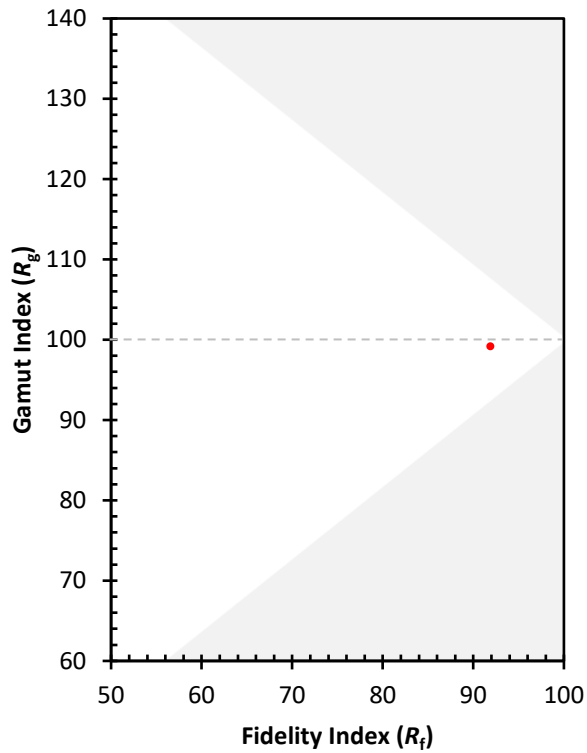
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)