

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: P1214938

Luminaire Tested: 22-ID2-45-CNC-L835-U

Issue Date: 12/4/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1214938  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2506-458-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/4/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 22-ID2-45-CNC-L835-U  
Description: 2X2 IN DEPTH TROFFER WITH 2INCH CURVE REGRESSED  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

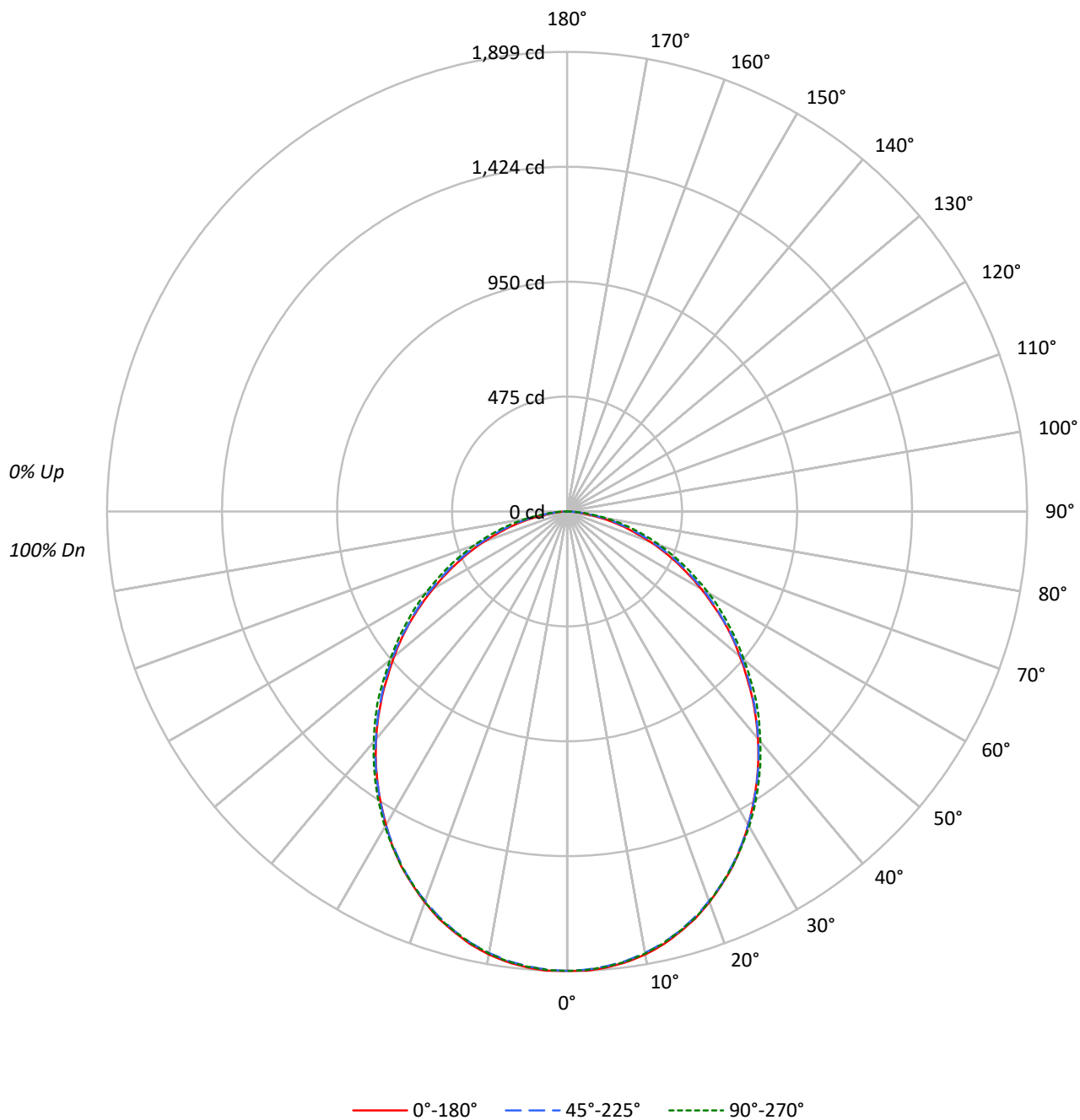
Lumens per Lamp: N/A  
Luminaire Lumens: 4690.0 lumens  
Efficiency: N/A  
Efficacy: 120.6 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.18 / 1.28  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 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



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### Luminous Intensity Polar Plot



TEST NUMBER: P1214938

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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 |  | 102 |
| 1   | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 95  | 98  | 95  | 92  |  |  | 94  | 92  | 90  |  | 91  |
| 2   | 100 | 92  | 85  | 80  | 97  | 90  | 84  | 79  | 87  | 81  | 77  |  |  | 83  | 79  | 75  |  | 80  |
| 3   | 91  | 81  | 73  | 67  | 89  | 80  | 72  | 66  | 77  | 70  | 65  |  |  | 74  | 69  | 64  |  | 71  |
| 4   | 84  | 72  | 64  | 57  | 82  | 71  | 63  | 57  | 68  | 61  | 56  |  |  | 66  | 60  | 55  |  | 64  |
| 5   | 77  | 65  | 56  | 50  | 75  | 64  | 55  | 49  | 62  | 54  | 49  |  |  | 60  | 53  | 48  |  | 58  |
| 6   | 72  | 59  | 50  | 44  | 70  | 58  | 49  | 43  | 56  | 48  | 43  |  |  | 54  | 48  | 43  |  | 53  |
| 7   | 66  | 53  | 45  | 39  | 65  | 52  | 44  | 38  | 51  | 44  | 38  |  |  | 49  | 43  | 38  |  | 48  |
| 8   | 62  | 49  | 40  | 35  | 60  | 48  | 40  | 35  | 47  | 39  | 34  |  |  | 45  | 39  | 34  |  | 44  |
| 9   | 58  | 45  | 37  | 31  | 57  | 44  | 36  | 31  | 43  | 36  | 31  |  |  | 42  | 36  | 31  |  | 41  |
| 10  | 54  | 41  | 34  | 28  | 53  | 41  | 33  | 28  | 40  | 33  | 28  |  |  | 39  | 33  | 28  |  | 38  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5108 | 5108 | 5108 |
| 5°  | 5108 | 5095 | 5100 |
| 10° | 5079 | 5061 | 5068 |
| 15° | 5012 | 4999 | 5002 |
| 20° | 4920 | 4906 | 4915 |
| 25° | 4804 | 4792 | 4801 |
| 30° | 4646 | 4648 | 4672 |
| 35° | 4485 | 4487 | 4524 |
| 40° | 4308 | 4312 | 4360 |
| 45° | 4109 | 4127 | 4200 |
| 50° | 3898 | 3933 | 3993 |
| 55° | 3695 | 3714 | 3815 |
| 60° | 3436 | 3504 | 3629 |
| 65° | 3170 | 3265 | 3428 |
| 70° | 2870 | 2992 | 3209 |
| 75° | 2486 | 2690 | 2951 |
| 80° | 1959 | 2300 | 2586 |
| 85° | 1213 | 1621 | 1933 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4200 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 179.2  | 3.8       |
| 10°-20°   | 506.0  | 10.8      |
| 20°-30°   | 743.2  | 15.8      |
| 30°-40°   | 855.9  | 18.3      |
| 40°-50°   | 839.6  | 17.9      |
| 50°-60°   | 713.0  | 15.2      |
| 60°-70°   | 511.1  | 10.9      |
| 70°-80°   | 276.7  | 5.9       |
| 80°-90°   | 65.4   | 1.4       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1428.4 | 30.5      |
| 0°-40°    | 2284.3 | 48.7      |
| 0°-60°    | 3836.9 | 81.8      |
| 0°-90°    | 4690.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4690.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1898 | 1898  | 1898 | 1898  | 1898 |      |
| 5°  | 1891 | 1889  | 1886 | 1887  | 1888 | 179  |
| 15° | 1799 | 1798  | 1794 | 1795  | 1796 | 507  |
| 25° | 1618 | 1613  | 1614 | 1618  | 1617 | 744  |
| 35° | 1365 | 1365  | 1366 | 1375  | 1377 | 853  |
| 45° | 1080 | 1080  | 1084 | 1099  | 1104 | 832  |
| 55° | 788  | 787   | 792  | 807   | 813  | 703  |
| 65° | 498  | 501   | 513  | 531   | 538  | 494  |
| 75° | 239  | 244   | 259  | 277   | 284  | 254  |
| 85° | 39   | 44    | 52   | 60    | 63   | 53   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1898.1 | 1898.1 | 1898.1 | 1898.1 | 1898.1 |
| 2.5°  | 1899.3 | 1896.3 | 1894.6 | 1895.2 | 1895.8 |
| 5°    | 1891.0 | 1889.2 | 1886.2 | 1886.8 | 1888.0 |
| 7.5°  | 1877.9 | 1875.5 | 1872.5 | 1873.1 | 1874.9 |
| 10°   | 1858.8 | 1855.8 | 1852.2 | 1852.8 | 1854.6 |
| 12.5° | 1833.2 | 1830.2 | 1827.2 | 1826.6 | 1828.4 |
| 15°   | 1799.2 | 1798.0 | 1794.4 | 1795.0 | 1795.6 |
| 17.5° | 1762.8 | 1758.6 | 1756.9 | 1758.0 | 1760.4 |
| 20°   | 1718.1 | 1713.9 | 1713.3 | 1714.5 | 1716.3 |
| 22.5° | 1669.2 | 1665.6 | 1666.8 | 1668.0 | 1666.8 |
| 25°   | 1617.9 | 1612.6 | 1613.8 | 1618.5 | 1616.8 |
| 27.5° | 1559.5 | 1557.7 | 1555.9 | 1561.9 | 1561.3 |
| 30°   | 1495.1 | 1495.7 | 1495.7 | 1503.5 | 1503.5 |
| 32.5° | 1430.2 | 1431.4 | 1431.4 | 1440.3 | 1441.5 |
| 35°   | 1365.2 | 1365.2 | 1365.8 | 1374.7 | 1377.1 |
| 37.5° | 1296.6 | 1297.8 | 1299.6 | 1306.2 | 1310.3 |
| 40°   | 1226.3 | 1226.3 | 1227.5 | 1239.4 | 1241.2 |
| 42.5° | 1153.0 | 1154.1 | 1157.1 | 1168.5 | 1173.2 |
| 45°   | 1079.6 | 1079.6 | 1084.4 | 1099.3 | 1103.5 |
| 47.5° | 1003.3 | 1007.5 | 1012.3 | 1027.2 | 1026.6 |
| 50°   | 931.2  | 936.6  | 939.5  | 952.0  | 953.8  |
| 52.5° | 861.4  | 861.4  | 865.6  | 880.5  | 884.1  |
| 55°   | 787.5  | 786.9  | 791.7  | 806.6  | 813.1  |
| 57.5° | 710.6  | 714.2  | 720.7  | 738.0  | 745.2  |
| 60°   | 638.5  | 641.5  | 651.0  | 667.1  | 674.2  |
| 62.5° | 566.9  | 571.7  | 578.9  | 597.3  | 603.3  |
| 65°   | 497.8  | 501.4  | 512.7  | 530.6  | 538.3  |
| 67.5° | 431.6  | 434.0  | 445.3  | 463.8  | 470.4  |
| 70°   | 364.8  | 369.6  | 380.3  | 398.8  | 407.8  |
| 72.5° | 298.1  | 305.2  | 318.9  | 337.4  | 345.2  |
| 75°   | 239.1  | 244.4  | 258.7  | 276.6  | 283.8  |
| 77.5° | 180.6  | 187.8  | 202.7  | 217.6  | 225.9  |
| 80°   | 126.4  | 135.3  | 148.4  | 161.6  | 166.9  |
| 82.5° | 79.3   | 87.0   | 99.0   | 108.5  | 111.5  |
| 85°   | 39.3   | 43.5   | 52.5   | 60.2   | 62.6   |
| 87.5° | 13.1   | 14.3   | 16.7   | 20.3   | 21.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 16.36            | 17.95 | 16.73 | 18.27 | 18.58 | 16.61          | 18.20 | 16.98 | 18.51 | 18.83 |
|                 | 3H   | 17.92            | 19.36 | 18.30 | 19.68 | 20.04 | 18.30          | 19.74 | 18.68 | 20.06 | 20.42 |
|                 | 4H   | 18.45            | 19.80 | 18.85 | 20.15 | 20.52 | 18.94          | 20.29 | 19.34 | 20.63 | 21.01 |
|                 | 6H   | 18.78            | 20.03 | 19.20 | 20.40 | 20.79 | 19.40          | 20.65 | 19.81 | 21.01 | 21.40 |
|                 | 8H   | 18.86            | 20.05 | 19.29 | 20.44 | 20.84 | 19.53          | 20.72 | 19.96 | 21.11 | 21.51 |
|                 | 12H  | 18.89            | 20.03 | 19.32 | 20.41 | 20.84 | 19.61          | 20.75 | 20.04 | 21.13 | 21.56 |
| 4H              | 2H   | 16.95            | 18.30 | 17.35 | 18.65 | 19.02 | 17.15          | 18.50 | 17.55 | 18.85 | 19.22 |
|                 | 3H   | 18.73            | 19.85 | 19.14 | 20.25 | 20.65 | 19.06          | 20.19 | 19.47 | 20.58 | 20.99 |
|                 | 4H   | 19.37            | 20.38 | 19.80 | 20.80 | 21.23 | 19.83          | 20.84 | 20.26 | 21.25 | 21.69 |
|                 | 6H   | 19.81            | 20.69 | 20.26 | 21.13 | 21.59 | 20.41          | 21.30 | 20.87 | 21.74 | 22.19 |
|                 | 8H   | 19.92            | 20.74 | 20.38 | 21.19 | 21.65 | 20.59          | 21.41 | 21.05 | 21.86 | 22.32 |
|                 | 12H  | 19.97            | 20.71 | 20.45 | 21.19 | 21.66 | 20.70          | 21.44 | 21.18 | 21.92 | 22.39 |
| 8H              | 4H   | 19.66            | 20.48 | 20.12 | 20.93 | 21.39 | 20.07          | 20.89 | 20.53 | 21.34 | 21.80 |
|                 | 6H   | 20.19            | 20.88 | 20.69 | 21.37 | 21.85 | 20.76          | 21.44 | 21.25 | 21.93 | 22.41 |
|                 | 8H   | 20.35            | 20.97 | 20.87 | 21.48 | 21.96 | 21.00          | 21.61 | 21.51 | 22.12 | 22.61 |
|                 | 12H  | 20.45            | 20.99 | 20.96 | 21.48 | 22.05 | 21.17          | 21.71 | 21.68 | 22.20 | 22.77 |
| 12H             | 4H   | 19.68            | 20.43 | 20.17 | 20.90 | 21.37 | 20.08          | 20.82 | 20.56 | 21.30 | 21.77 |
|                 | 6H   | 20.24            | 20.86 | 20.75 | 21.36 | 21.85 | 20.78          | 21.40 | 21.29 | 21.91 | 22.39 |
|                 | 8H   | 20.45            | 20.99 | 20.96 | 21.48 | 22.05 | 21.07          | 21.61 | 21.58 | 22.11 | 22.67 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-1

Test Date: 07/23/2025

Luminaire Tested: 22ID2-55-CFR1-L835-U

Data in this report applies to families of products including 22ID2-55-CFR1-L835-U



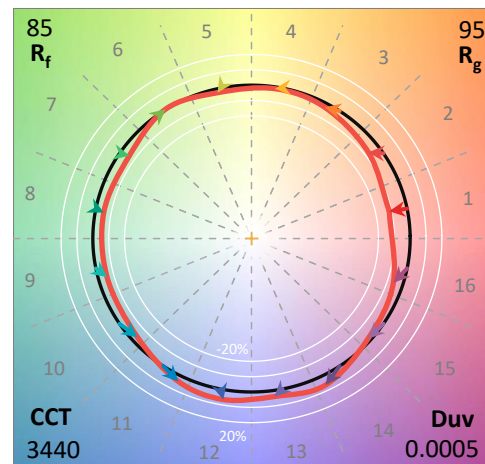
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-1  
 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-L835-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 3500K 80CRI

### Spectral Parameters

CCT (K): 3440  
 CIE  $u'$ : 0.2370  
 CIE  $v'$ : 0.5132  
 Duv: 0.0005  
 CIE x: 0.4093  
 CIE y: 0.3940  
 CIE z: 0.1967  
 Peak Wavelength (nm): 599  
 Dominant Wavelength (nm): 580  
 Purity: 41.09375  
 R<sub>f</sub>: 84.9  
 R<sub>g</sub>: 94.6

CRI (Ra): 84.2  
 R1: 82.8  
 R2: 91.7  
 R3: 96.7  
 R4: 81.9  
 R5: 82.6  
 R6: 88.8  
 R7: 85.0  
 R8: 63.7  
 R9: 13.6  
 R10: 80.1  
 R11: 81.1  
 R12: 65.8  
 R13: 85.2  
 R14: 98.7  
 R15: 76.2



### Test Conditions

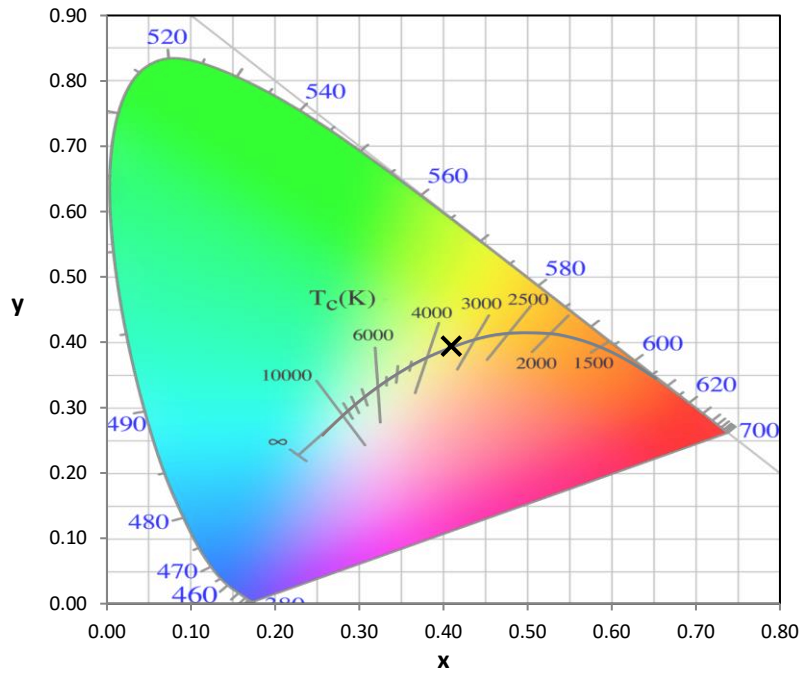
Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2506-458-1

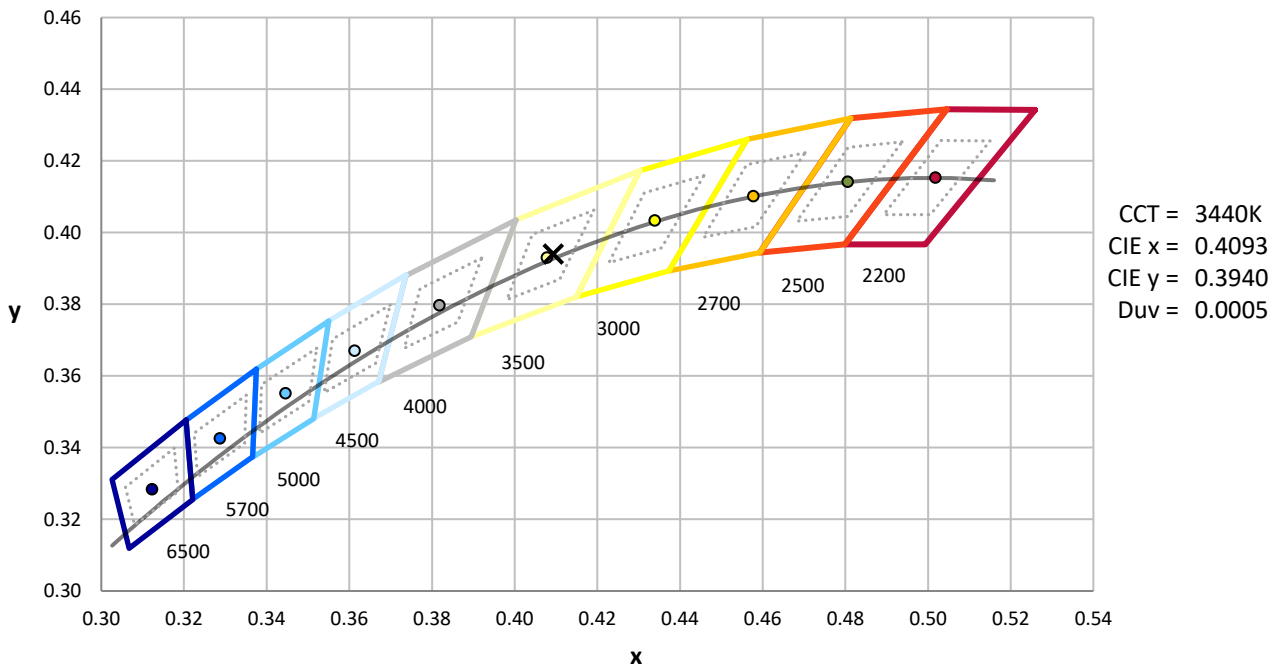
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**

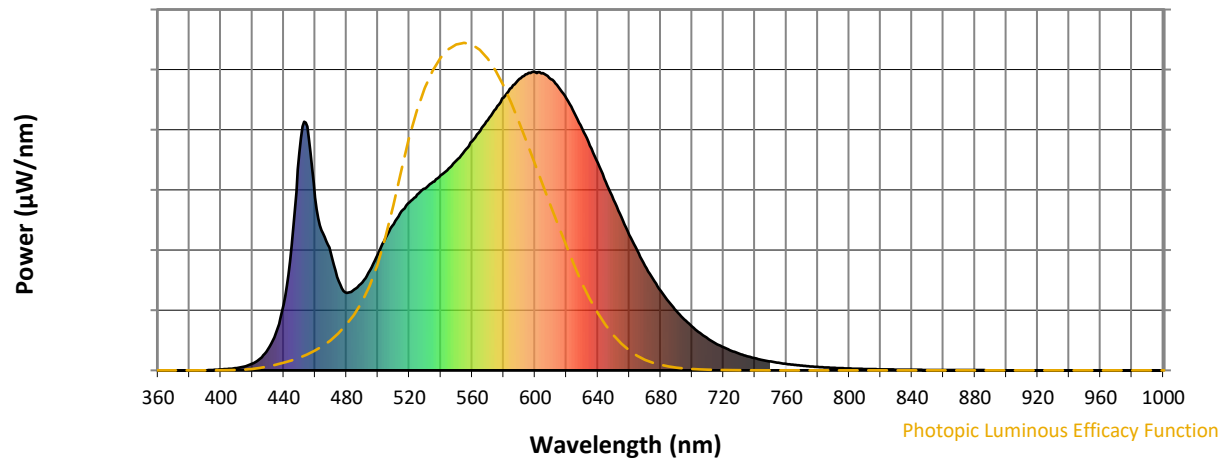


**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



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### Photopic Flux vs. Wavelength

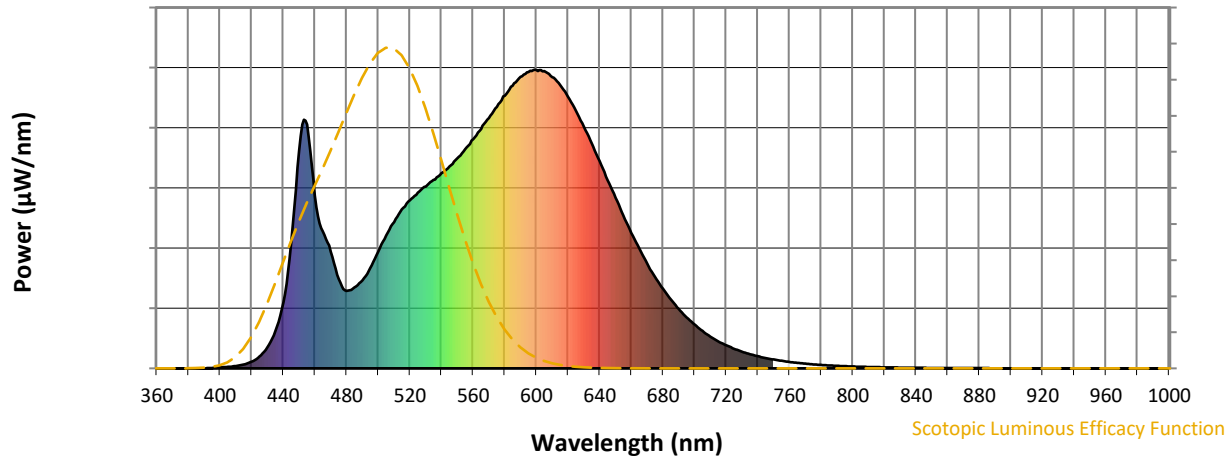


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 295                                  | NR                             | 620               | 910                                  | NR                             | 750               | 30                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 335                                  | NR                             | 625               | 862                                  | NR                             | 755               | 25                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 390                                  | NR                             | 630               | 809                                  | NR                             | 760               | 21                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 445                                  | NR                             | 635               | 752                                  | NR                             | 765               | 18                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 490                                  | NR                             | 640               | 694                                  | NR                             | 770               | 16                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 532                                  | NR                             | 645               | 630                                  | NR                             | 775               | 13                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 563                                  | NR                             | 650               | 571                                  | NR                             | 780               | 12                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 588                                  | NR                             | 655               | 512                                  | NR                             | 785               | 10                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 3                                    | NR                             | 530               | 609                                  | NR                             | 660               | 453                                  | NR                             | 790               | 8                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 5                                    | NR                             | 535               | 631                                  | NR                             | 665               | 401                                  | NR                             | 795               | 7                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 8                                    | NR                             | 540               | 654                                  | NR                             | 670               | 351                                  | NR                             | 800               | 6                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 13                                   | NR                             | 545               | 677                                  | NR                             | 675               | 306                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 23                                   | NR                             | 550               | 702                                  | NR                             | 680               | 267                                  | NR                             | 810               | 5                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 40                                   | NR                             | 555               | 734                                  | NR                             | 685               | 230                                  | NR                             | 815               | 4                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 70                                   | NR                             | 560               | 767                                  | NR                             | 690               | 199                                  | NR                             | 820               | 4                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 126                                  | NR                             | 565               | 802                                  | NR                             | 695               | 171                                  | NR                             | 825               | 3                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 221                                  | NR                             | 570               | 838                                  | NR                             | 700               | 146                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 418                                  | NR                             | 575               | 875                                  | NR                             | 705               | 125                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 729                                  | NR                             | 580               | 913                                  | NR                             | 710               | 107                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 816                                  | NR                             | 585               | 946                                  | NR                             | 715               | 90                                   | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 578                                  | NR                             | 590               | 976                                  | NR                             | 720               | 77                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 458                                  | NR                             | 595               | 992                                  | NR                             | 725               | 66                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 390                                  | NR                             | 600               | 999                                  | NR                             | 730               | 56                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 299                                  | NR                             | 605               | 995                                  | NR                             | 735               | 47                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 260                                  | NR                             | 610               | 975                                  | NR                             | 740               | 40                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 271                                  | NR                             | 615               | 948                                  | NR                             | 745               | 34                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



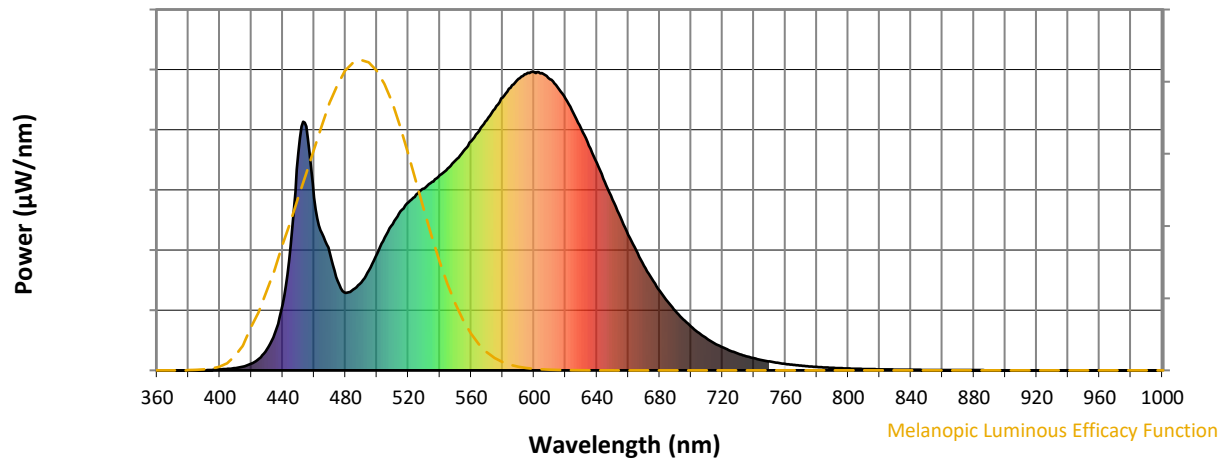
Scotopic Lumens: NR

S/P: 1.53

| 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    | 295                      | NR            | 620    | 910                      | NR            | 750    | 30                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 335                      | NR            | 625    | 862                      | NR            | 755    | 25                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 390                      | NR            | 630    | 809                      | NR            | 760    | 21                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 445                      | NR            | 635    | 752                      | NR            | 765    | 18                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 490                      | NR            | 640    | 694                      | NR            | 770    | 16                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 532                      | NR            | 645    | 630                      | NR            | 775    | 13                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 563                      | NR            | 650    | 571                      | NR            | 780    | 12                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 588                      | NR            | 655    | 512                      | NR            | 785    | 10                       | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 609                      | NR            | 660    | 453                      | NR            | 790    | 8                        | NR            | 920    | 0                        | NR            |
| 405    | 5                        | NR            | 535    | 631                      | NR            | 665    | 401                      | NR            | 795    | 7                        | NR            | 925    | 0                        | NR            |
| 410    | 8                        | NR            | 540    | 654                      | NR            | 670    | 351                      | NR            | 800    | 6                        | NR            | 930    | 0                        | NR            |
| 415    | 13                       | NR            | 545    | 677                      | NR            | 675    | 306                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 23                       | NR            | 550    | 702                      | NR            | 680    | 267                      | NR            | 810    | 5                        | NR            | 940    | 0                        | NR            |
| 425    | 40                       | NR            | 555    | 734                      | NR            | 685    | 230                      | NR            | 815    | 4                        | NR            | 945    | 0                        | NR            |
| 430    | 70                       | NR            | 560    | 767                      | NR            | 690    | 199                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 126                      | NR            | 565    | 802                      | NR            | 695    | 171                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 221                      | NR            | 570    | 838                      | NR            | 700    | 146                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 418                      | NR            | 575    | 875                      | NR            | 705    | 125                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 729                      | NR            | 580    | 913                      | NR            | 710    | 107                      | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 816                      | NR            | 585    | 946                      | NR            | 715    | 90                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 578                      | NR            | 590    | 976                      | NR            | 720    | 77                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 458                      | NR            | 595    | 992                      | NR            | 725    | 66                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 390                      | NR            | 600    | 999                      | NR            | 730    | 56                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 299                      | NR            | 605    | 995                      | NR            | 735    | 47                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 260                      | NR            | 610    | 975                      | NR            | 740    | 40                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 271                      | NR            | 615    | 948                      | NR            | 745    | 34                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.07

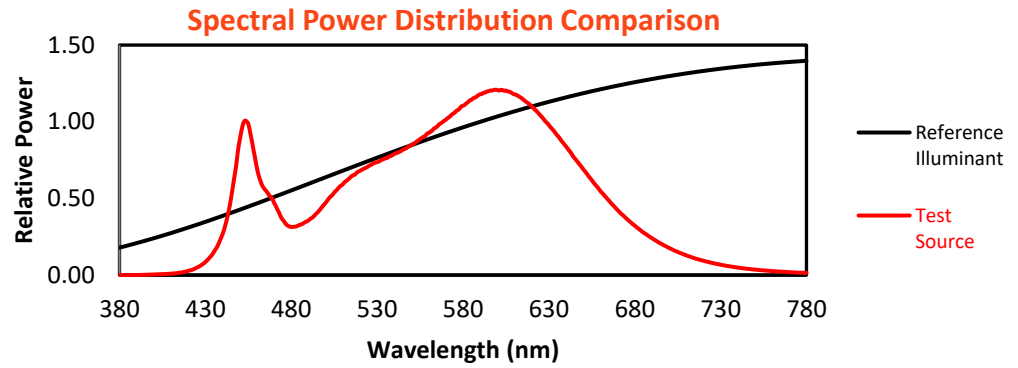
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 295                         | NR               | 620       | 910                         | NR               | 750       | 30                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 335                         | NR               | 625       | 862                         | NR               | 755       | 25                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 390                         | NR               | 630       | 809                         | NR               | 760       | 21                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 445                         | NR               | 635       | 752                         | NR               | 765       | 18                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 490                         | NR               | 640       | 694                         | NR               | 770       | 16                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 532                         | NR               | 645       | 630                         | NR               | 775       | 13                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 563                         | NR               | 650       | 571                         | NR               | 780       | 12                          | NR               | 910       | 0                           | NR               |
| 395       | 2                           | NR               | 525       | 588                         | NR               | 655       | 512                         | NR               | 785       | 10                          | NR               | 915       | 0                           | NR               |
| 400       | 3                           | NR               | 530       | 609                         | NR               | 660       | 453                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 5                           | NR               | 535       | 631                         | NR               | 665       | 401                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 8                           | NR               | 540       | 654                         | NR               | 670       | 351                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 13                          | NR               | 545       | 677                         | NR               | 675       | 306                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 23                          | NR               | 550       | 702                         | NR               | 680       | 267                         | NR               | 810       | 5                           | NR               | 940       | 0                           | NR               |
| 425       | 40                          | NR               | 555       | 734                         | NR               | 685       | 230                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 70                          | NR               | 560       | 767                         | NR               | 690       | 199                         | NR               | 820       | 4                           | NR               | 950       | 0                           | NR               |
| 435       | 126                         | NR               | 565       | 802                         | NR               | 695       | 171                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 221                         | NR               | 570       | 838                         | NR               | 700       | 146                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 418                         | NR               | 575       | 875                         | NR               | 705       | 125                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 729                         | NR               | 580       | 913                         | NR               | 710       | 107                         | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 816                         | NR               | 585       | 946                         | NR               | 715       | 90                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 578                         | NR               | 590       | 976                         | NR               | 720       | 77                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 458                         | NR               | 595       | 992                         | NR               | 725       | 66                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 390                         | NR               | 600       | 999                         | NR               | 730       | 56                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 299                         | NR               | 605       | 995                         | NR               | 735       | 47                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 260                         | NR               | 610       | 975                         | NR               | 740       | 40                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 271                         | NR               | 615       | 948                         | NR               | 745       | 34                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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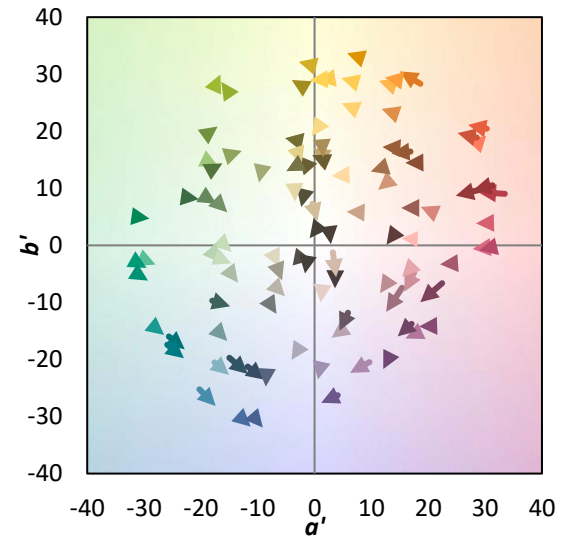
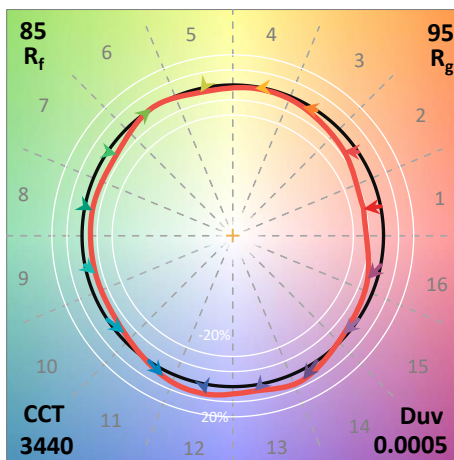
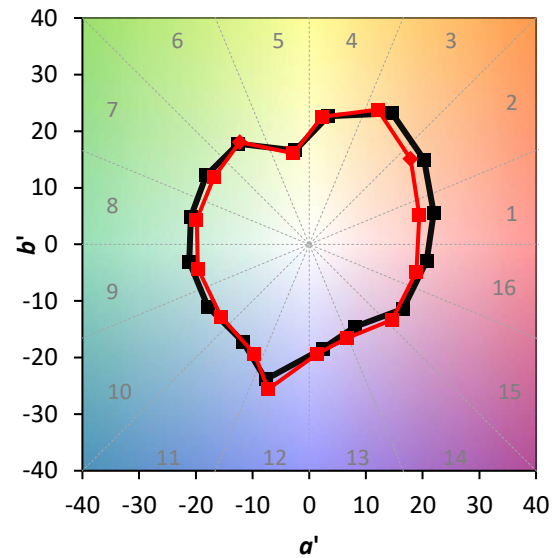
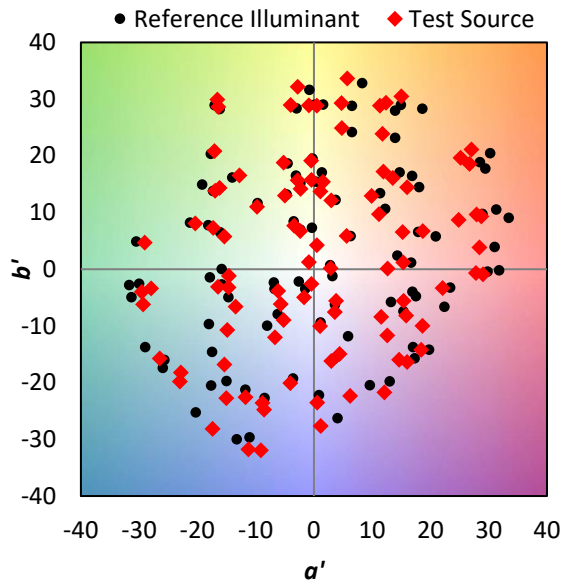
TM-30-18

### Summary

$R_f = 84.9$   
 $R_g = 94.6$   
 $CIE R_a = 84.2$   
 $R_g = 13.6$

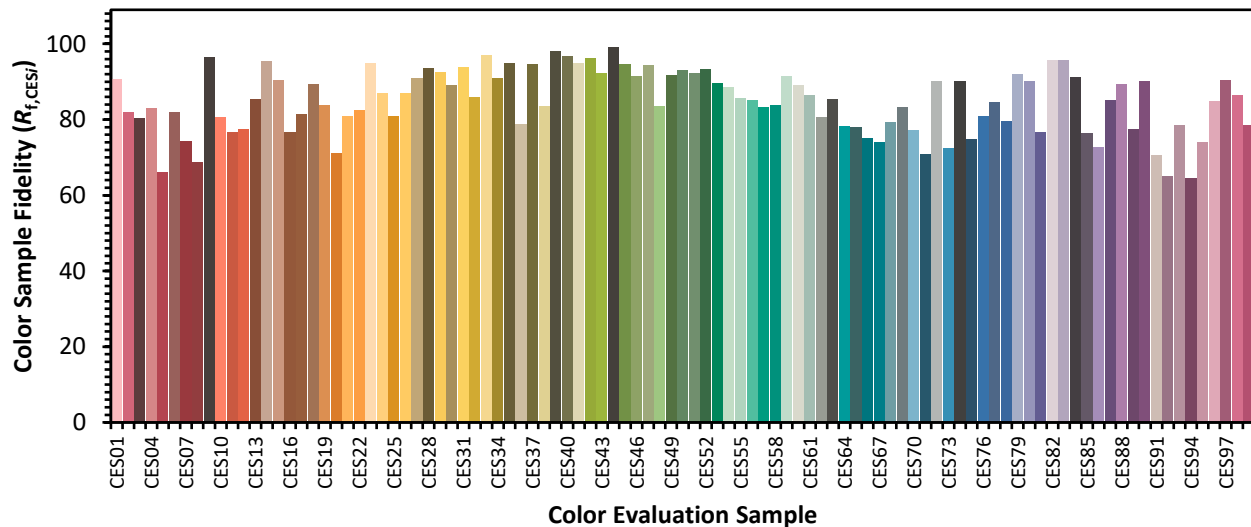


### Color Vector Graphics



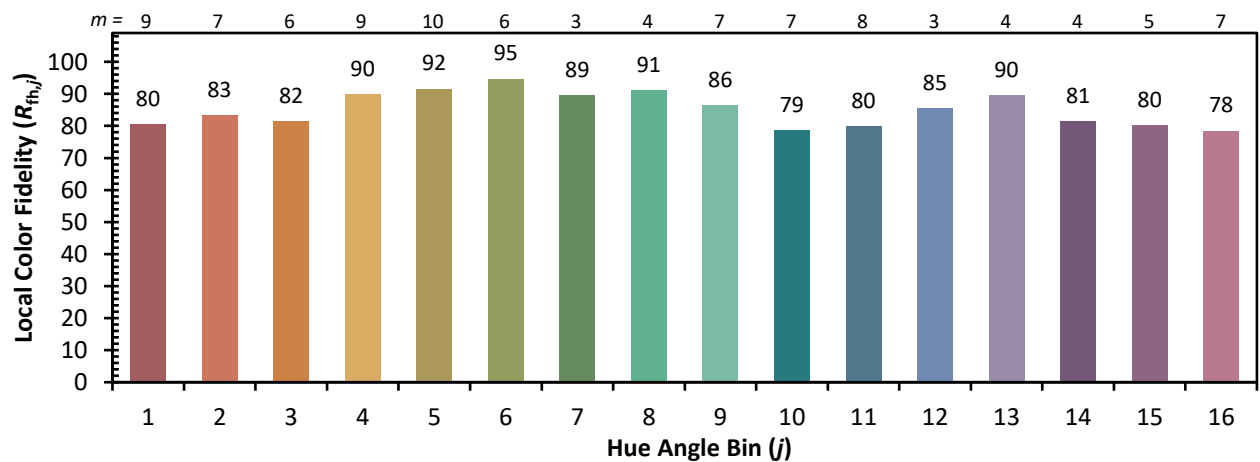
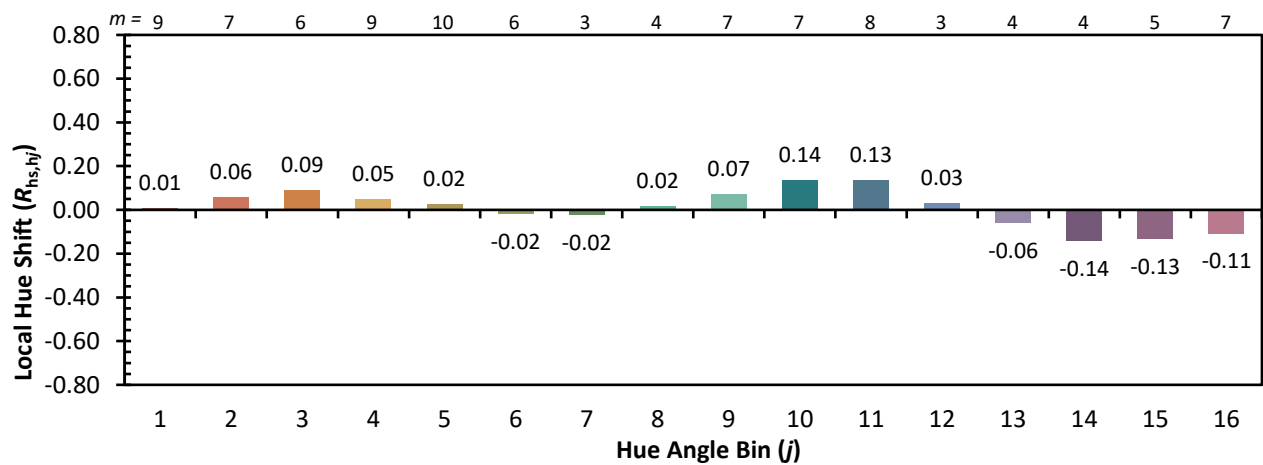
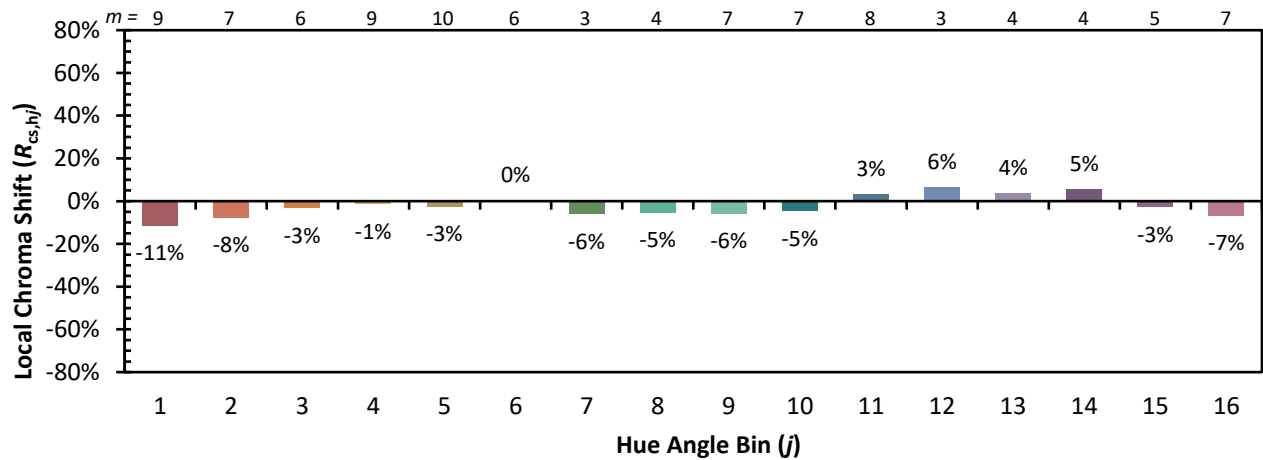
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 87 | CES51 = 92 | CES76 = 81 |
| CES02 = 62 | CES27 = 91 | CES52 = 93 | CES77 = 85 |
| CES03 = 31 | CES28 = 94 | CES53 = 90 | CES78 = 80 |
| CES04 = 70 | CES29 = 92 | CES54 = 89 | CES79 = 92 |
| CES05 = 49 | CES30 = 89 | CES55 = 86 | CES80 = 90 |
| CES06 = 51 | CES31 = 94 | CES56 = 85 | CES81 = 77 |
| CES07 = 41 | CES32 = 86 | CES57 = 83 | CES82 = 96 |
| CES08 = 40 | CES33 = 97 | CES58 = 84 | CES83 = 96 |
| CES09 = 29 | CES34 = 91 | CES59 = 91 | CES84 = 91 |
| CES10 = 75 | CES35 = 95 | CES60 = 89 | CES85 = 76 |
| CES11 = 58 | CES36 = 79 | CES61 = 87 | CES86 = 73 |
| CES12 = 64 | CES37 = 95 | CES62 = 81 | CES87 = 85 |
| CES13 = 43 | CES38 = 84 | CES63 = 85 | CES88 = 89 |
| CES14 = 74 | CES39 = 98 | CES64 = 78 | CES89 = 78 |
| CES15 = 71 | CES40 = 97 | CES65 = 78 | CES90 = 90 |
| CES16 = 47 | CES41 = 95 | CES66 = 75 | CES91 = 71 |
| CES17 = 50 | CES42 = 96 | CES67 = 74 | CES92 = 65 |
| CES18 = 56 | CES43 = 92 | CES68 = 79 | CES93 = 79 |
| CES19 = 72 | CES44 = 99 | CES69 = 83 | CES94 = 64 |
| CES20 = 66 | CES45 = 95 | CES70 = 77 | CES95 = 74 |
| CES21 = 86 | CES46 = 91 | CES71 = 71 | CES96 = 85 |
| CES22 = 78 | CES47 = 94 | CES72 = 90 | CES97 = 90 |
| CES23 = 92 | CES48 = 83 | CES73 = 72 | CES98 = 86 |
| CES24 = 90 | CES49 = 92 | CES74 = 90 | CES99 = 79 |
| CES25 = 72 | CES50 = 93 | CES75 = 75 |            |

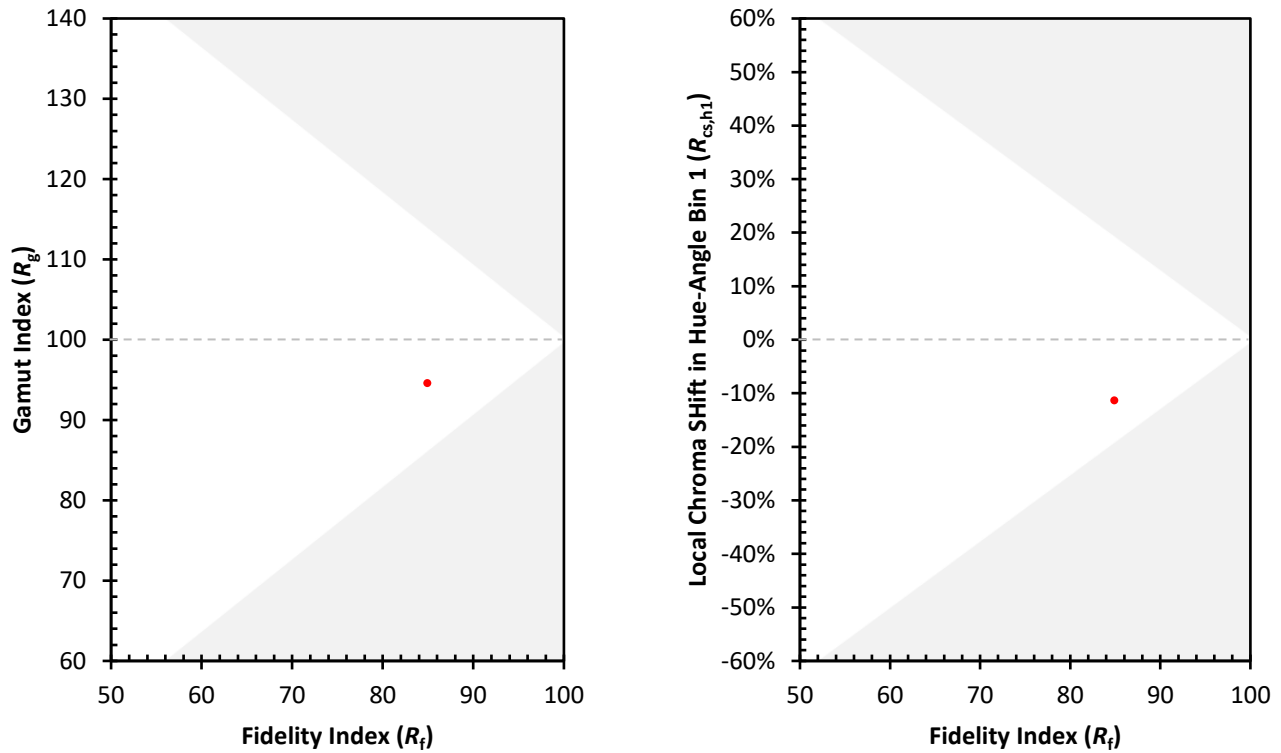




Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)