

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: P1216837

Luminaire Tested: 14-ID2-30-CFR2-L830-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1216837  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2508-507-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 14-ID2-30-CFR2-L830-U  
Description: 1X4 IN DEPTH TROFFER WITH 2INCH CUBE REGRESS LENS  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

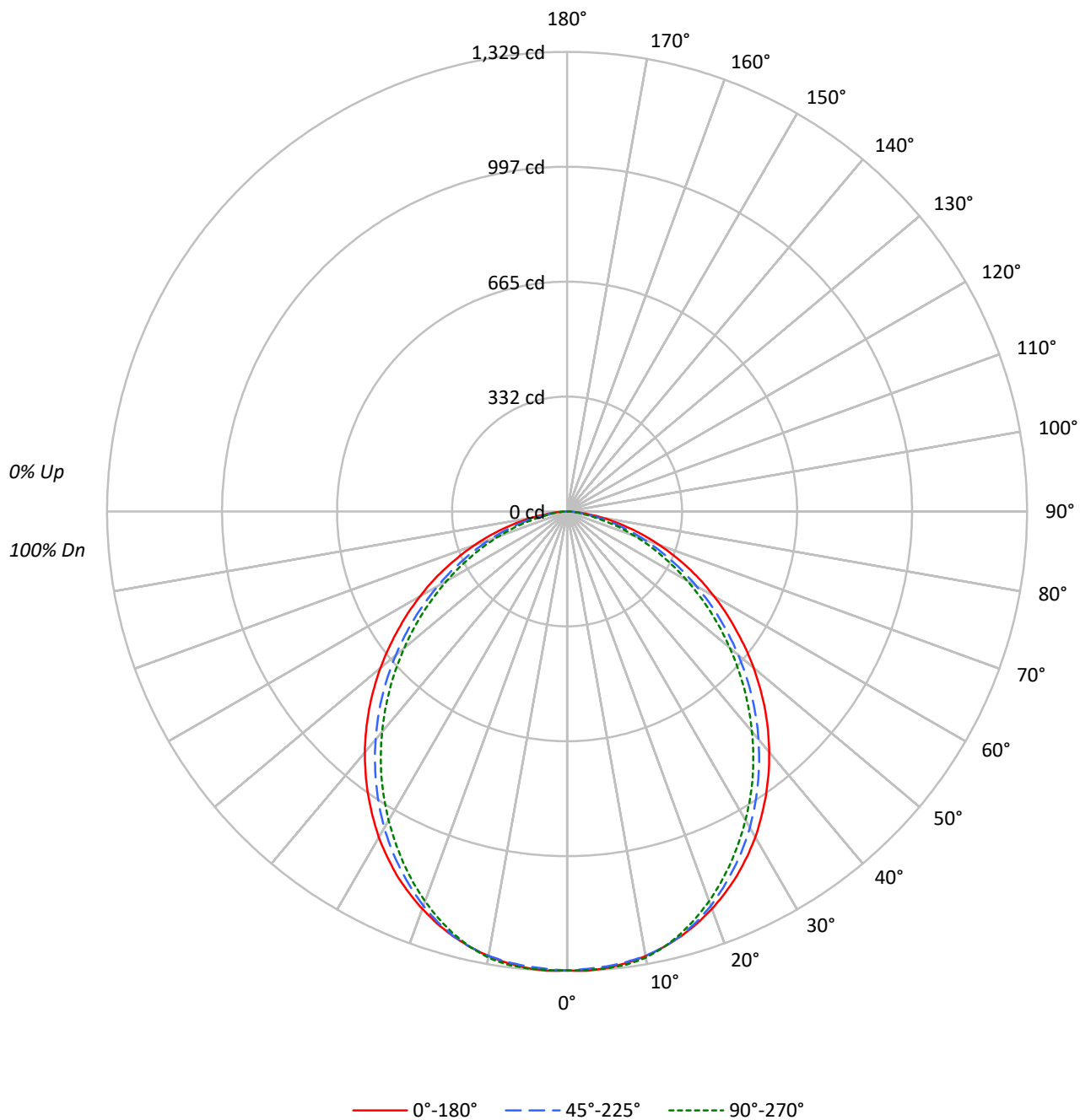
Lumens per Lamp: N/A  
Luminaire Lumens: 3220.1 lumens  
Efficiency: N/A  
Efficacy: 122.4 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.16 / 1.28  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 26.3  
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: P1216837

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

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 100 |
| 1   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  |  | 95  | 93  | 90  |  | 86  |
| 2   | 100 | 93  | 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  | 70  | 65  |  | 62  |
| 4   | 84  | 73  | 65  | 58  | 82  | 72  | 64  | 58  | 69  | 62  | 57  |  | 67  | 61  | 56  |  | 53  |
| 5   | 78  | 66  | 57  | 51  | 76  | 64  | 56  | 50  | 62  | 55  | 50  |  | 60  | 54  | 49  |  | 47  |
| 6   | 72  | 59  | 51  | 44  | 70  | 58  | 50  | 44  | 57  | 49  | 44  |  | 55  | 48  | 44  |  | 41  |
| 7   | 67  | 54  | 45  | 40  | 65  | 53  | 45  | 39  | 52  | 44  | 39  |  | 50  | 44  | 39  |  | 37  |
| 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  | 32  |  | 30  |
| 10  | 55  | 42  | 34  | 29  | 54  | 41  | 34  | 29  | 40  | 34  | 29  |  | 40  | 33  | 29  |  | 27  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3571 | 3571 | 3571 |
| 5°  | 3579 | 3567 | 3582 |
| 10° | 3568 | 3565 | 3581 |
| 15° | 3543 | 3539 | 3524 |
| 20° | 3503 | 3476 | 3435 |
| 25° | 3450 | 3385 | 3325 |
| 30° | 3381 | 3282 | 3204 |
| 35° | 3291 | 3159 | 3073 |
| 40° | 3192 | 3023 | 2920 |
| 45° | 3078 | 2873 | 2753 |
| 50° | 2946 | 2702 | 2569 |
| 55° | 2793 | 2521 | 2373 |
| 60° | 2635 | 2320 | 2159 |
| 65° | 2458 | 2099 | 1918 |
| 70° | 2235 | 1856 | 1651 |
| 75° | 1958 | 1577 | 1300 |
| 80° | 1581 | 1167 | 908  |
| 85° | 1065 | 855  | 760  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3078 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 125.8  | 3.9       |
| 10°-20°   | 357.4  | 11.1      |
| 20°-30°   | 525.6  | 16.3      |
| 30°-40°   | 604.3  | 18.8      |
| 40°-50°   | 587.5  | 18.2      |
| 50°-60°   | 487.3  | 15.1      |
| 60°-70°   | 334.0  | 10.4      |
| 70°-80°   | 163.6  | 5.1       |
| 80°-90°   | 34.6   | 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°    | 1008.7 | 31.3      |
| 0°-40°    | 1613.1 | 50.1      |
| 0°-60°    | 2687.9 | 83.5      |
| 0°-90°    | 3220.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3220.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1327 | 1327  | 1327 | 1327  | 1327 |      |
| 5°  | 1325 | 1324  | 1320 | 1322  | 1326 | 126  |
| 15° | 1272 | 1273  | 1270 | 1265  | 1265 | 359  |
| 25° | 1162 | 1163  | 1140 | 1125  | 1120 | 535  |
| 35° | 1002 | 997   | 962  | 942   | 935  | 626  |
| 45° | 809  | 795   | 755  | 732   | 724  | 623  |
| 55° | 595  | 576   | 537  | 515   | 506  | 533  |
| 65° | 386  | 362   | 330  | 311   | 301  | 382  |
| 75° | 188  | 173   | 152  | 132   | 125  | 200  |
| 85° | 34   | 30    | 28   | 26    | 25   | 44   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1327.2 | 1327.2 | 1327.2 | 1327.2 | 1327.2 |
| 2.5°  | 1329.3 | 1327.2 | 1324.0 | 1325.1 | 1327.2 |
| 5°    | 1325.1 | 1323.5 | 1320.4 | 1322.5 | 1326.1 |
| 7.5°  | 1317.2 | 1316.2 | 1314.1 | 1317.2 | 1321.9 |
| 10°   | 1305.7 | 1305.2 | 1304.7 | 1306.8 | 1310.4 |
| 12.5° | 1290.6 | 1290.6 | 1290.6 | 1289.0 | 1290.6 |
| 15°   | 1271.7 | 1272.8 | 1270.2 | 1264.9 | 1264.9 |
| 17.5° | 1249.2 | 1251.3 | 1244.5 | 1236.1 | 1234.1 |
| 20°   | 1223.1 | 1225.7 | 1213.7 | 1201.6 | 1199.5 |
| 22.5° | 1193.8 | 1196.4 | 1178.1 | 1164.0 | 1161.3 |
| 25°   | 1161.9 | 1163.4 | 1139.9 | 1124.7 | 1120.0 |
| 27.5° | 1125.8 | 1125.8 | 1099.6 | 1082.3 | 1076.1 |
| 30°   | 1088.1 | 1086.0 | 1056.2 | 1037.9 | 1031.1 |
| 32.5° | 1045.2 | 1042.6 | 1009.6 | 990.8  | 984.0  |
| 35°   | 1001.8 | 996.6  | 961.5  | 942.2  | 935.4  |
| 37.5° | 956.3  | 949.0  | 911.8  | 891.4  | 883.6  |
| 40°   | 908.7  | 898.7  | 860.5  | 839.1  | 831.2  |
| 42.5° | 859.5  | 848.0  | 808.2  | 787.3  | 777.4  |
| 45°   | 808.8  | 795.2  | 754.9  | 731.9  | 723.5  |
| 47.5° | 756.4  | 741.3  | 700.5  | 678.5  | 668.6  |
| 50°   | 703.6  | 686.3  | 645.5  | 623.6  | 613.6  |
| 52.5° | 649.7  | 629.8  | 591.1  | 569.2  | 559.7  |
| 55°   | 595.3  | 576.0  | 537.3  | 515.3  | 505.9  |
| 57.5° | 543.5  | 521.0  | 483.4  | 463.0  | 452.5  |
| 60°   | 489.6  | 467.2  | 431.1  | 410.7  | 401.2  |
| 62.5° | 438.9  | 413.8  | 379.8  | 359.9  | 350.5  |
| 65°   | 386.1  | 362.0  | 329.6  | 310.7  | 301.3  |
| 67.5° | 334.3  | 311.8  | 282.0  | 262.6  | 254.8  |
| 70°   | 284.1  | 262.6  | 235.9  | 217.6  | 209.8  |
| 72.5° | 235.4  | 217.1  | 193.6  | 173.7  | 166.9  |
| 75°   | 188.3  | 172.6  | 151.7  | 132.4  | 125.0  |
| 77.5° | 143.9  | 131.3  | 111.4  | 92.6   | 85.3   |
| 80°   | 102.0  | 92.6   | 75.3   | 59.6   | 58.6   |
| 82.5° | 65.9   | 59.1   | 45.0   | 42.9   | 41.9   |
| 85°   | 34.5   | 30.3   | 27.7   | 25.6   | 24.6   |
| 87.5° | 11.0   | 11.0   | 11.0   | 8.9    | 8.4    |
| 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 | 15.56            | 17.13 | 15.93 | 17.45 | 17.76 | 14.66          | 16.22 | 15.02 | 16.54 | 16.85 |
|                 | 3H   | 17.16            | 18.57 | 17.54 | 18.90 | 19.26 | 16.00          | 17.41 | 16.37 | 17.73 | 18.10 |
|                 | 4H   | 17.72            | 19.04 | 18.12 | 19.39 | 19.77 | 16.39          | 17.71 | 16.79 | 18.06 | 18.44 |
|                 | 6H   | 18.08            | 19.30 | 18.49 | 19.67 | 20.06 | 16.56          | 17.79 | 16.97 | 18.15 | 18.54 |
|                 | 8H   | 18.17            | 19.34 | 18.60 | 19.73 | 20.13 | 16.60          | 17.77 | 17.03 | 18.16 | 18.56 |
|                 | 12H  | 18.21            | 19.33 | 18.64 | 19.71 | 20.14 | 16.63          | 17.74 | 17.06 | 18.13 | 18.56 |
| 4H              | 2H   | 15.99            | 17.31 | 16.39 | 17.66 | 18.04 | 15.24          | 16.57 | 15.64 | 16.91 | 17.29 |
|                 | 3H   | 17.79            | 18.89 | 18.20 | 19.28 | 19.69 | 16.78          | 17.88 | 17.19 | 18.28 | 18.68 |
|                 | 4H   | 18.46            | 19.45 | 18.89 | 19.86 | 20.30 | 17.26          | 18.25 | 17.69 | 18.66 | 19.10 |
|                 | 6H   | 18.93            | 19.79 | 19.38 | 20.23 | 20.69 | 17.50          | 18.37 | 17.96 | 18.81 | 19.27 |
|                 | 8H   | 19.05            | 19.86 | 19.51 | 20.30 | 20.77 | 17.57          | 18.37 | 18.03 | 18.82 | 19.28 |
|                 | 12H  | 19.12            | 19.84 | 19.60 | 20.32 | 20.79 | 17.61          | 18.33 | 18.09 | 18.81 | 19.28 |
| 8H              | 4H   | 18.60            | 19.41 | 19.07 | 19.85 | 20.32 | 17.51          | 18.32 | 17.97 | 18.76 | 19.23 |
|                 | 6H   | 19.15            | 19.82 | 19.65 | 20.31 | 20.78 | 17.82          | 18.48 | 18.31 | 18.97 | 19.45 |
|                 | 8H   | 19.32            | 19.92 | 19.83 | 20.43 | 20.91 | 17.92          | 18.51 | 18.43 | 19.02 | 19.51 |
|                 | 12H  | 19.44            | 19.96 | 19.94 | 20.45 | 21.02 | 18.00          | 18.53 | 18.51 | 19.02 | 19.58 |
| 12H             | 4H   | 18.60            | 19.32 | 19.08 | 19.79 | 20.26 | 17.53          | 18.25 | 18.01 | 18.73 | 19.20 |
|                 | 6H   | 19.14            | 19.74 | 19.65 | 20.25 | 20.73 | 17.84          | 18.44 | 18.36 | 18.95 | 19.44 |
|                 | 8H   | 19.35            | 19.88 | 19.86 | 20.37 | 20.93 | 17.98          | 18.51 | 18.49 | 19.00 | 19.56 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-3

Test Date: 07/24/2025

Luminaire Tested: 22ID2-55-CFR1-L830-U

Data in this report applies to families of products including 22ID2-55-CFR1-L830-U



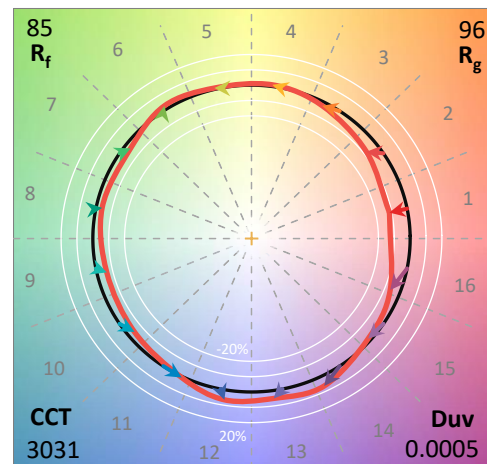
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-3  
 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-L830-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 3000K 80CRI

### Spectral Parameters

CCT (K): 3031  
 CIE  $u'$ : 0.2493  
 CIE  $v'$ : 0.5215  
 Duv: 0.0005  
 CIE x: 0.4355  
 CIE y: 0.4049  
 CIE z: 0.1596  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 582  
 Purity: 52.24762  
 R<sub>f</sub>: 84.8  
 R<sub>g</sub>: 95.8

CRI (Ra): 82.5  
 R1: 80.7  
 R2: 90.5  
 R3: 96.7  
 R4: 80.7  
 R5: 80.9  
 R6: 88.5  
 R7: 83.0  
 R8: 58.8  
 R9: 5.8  
 R10: 78.6  
 R11: 80.2  
 R12: 69.8  
 R13: 83.0  
 R14: 98.8  
 R15: 73.0



### Test Conditions

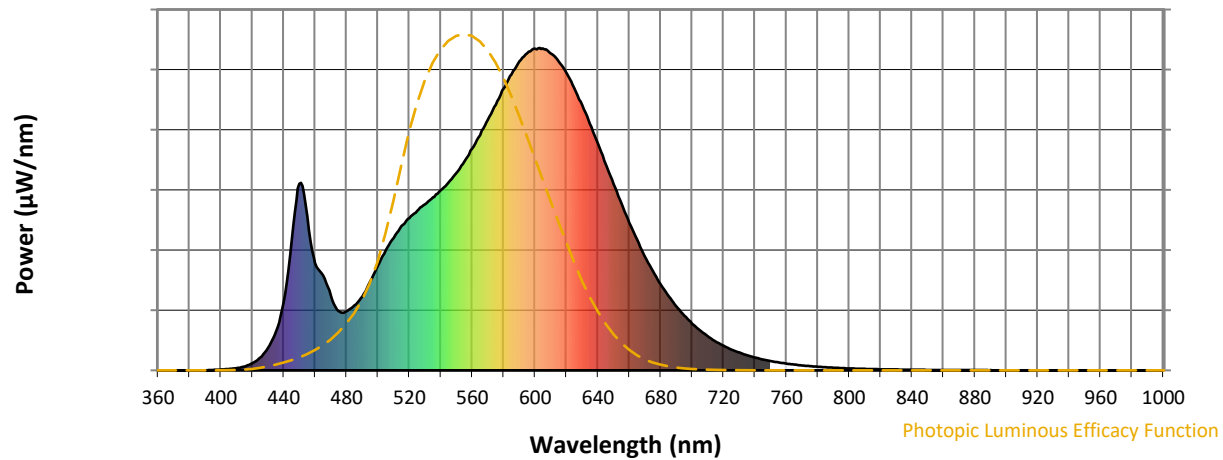
Stabilization Time: 38M  
 Operation Time: 1H 38M  
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2506-458-3

| 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           |



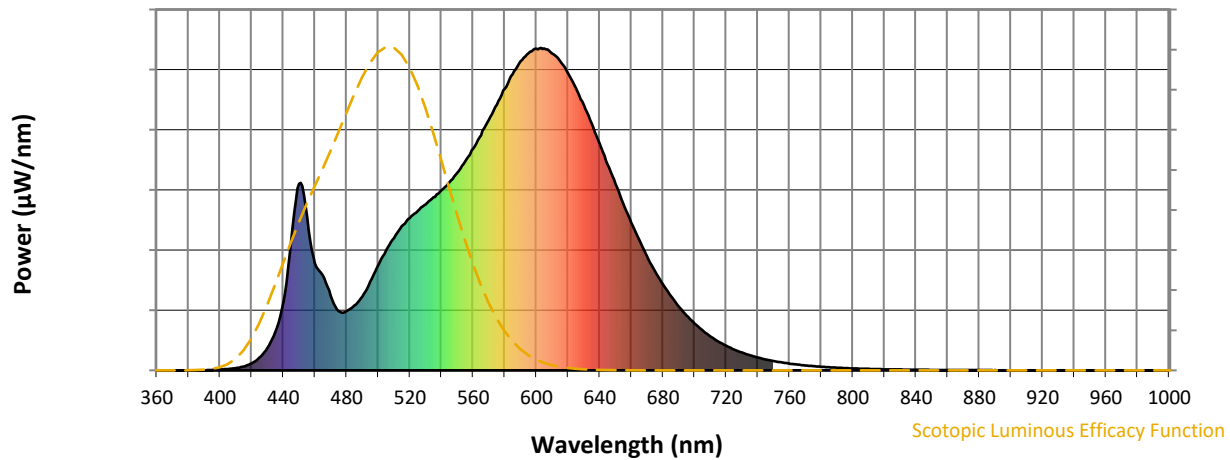
REPORT NUMBER: SP1-2506-458-3

**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               | 229                                  | NR                             | 620               | 922                                  | NR                             | 750               | 29                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 275                                  | NR                             | 625               | 875                                  | NR                             | 755               | 25                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 326                                  | NR                             | 630               | 822                                  | NR                             | 760               | 21                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 372                                  | NR                             | 635               | 764                                  | NR                             | 765               | 18                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 411                                  | NR                             | 640               | 704                                  | NR                             | 770               | 15                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 447                                  | NR                             | 645               | 638                                  | NR                             | 775               | 13                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 473                                  | NR                             | 650               | 577                                  | NR                             | 780               | 11                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 495                                  | NR                             | 655               | 517                                  | NR                             | 785               | 10                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 3                                    | NR                             | 530               | 515                                  | NR                             | 660               | 457                                  | NR                             | 790               | 8                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 4                                    | NR                             | 535               | 537                                  | NR                             | 665               | 404                                  | NR                             | 795               | 7                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 559                                  | NR                             | 670               | 353                                  | NR                             | 800               | 6                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 12                                   | NR                             | 545               | 584                                  | NR                             | 675               | 307                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 22                                   | NR                             | 550               | 612                                  | NR                             | 680               | 267                                  | NR                             | 810               | 5                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 40                                   | NR                             | 555               | 648                                  | NR                             | 685               | 230                                  | NR                             | 815               | 4                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 69                                   | NR                             | 560               | 688                                  | NR                             | 690               | 199                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 120                                  | NR                             | 565               | 730                                  | NR                             | 695               | 170                                  | NR                             | 825               | 3                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 212                                  | NR                             | 570               | 777                                  | NR                             | 700               | 145                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 400                                  | NR                             | 575               | 824                                  | NR                             | 705               | 124                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 578                                  | NR                             | 580               | 873                                  | NR                             | 710               | 106                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 478                                  | NR                             | 585               | 918                                  | NR                             | 715               | 90                                   | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 332                                  | NR                             | 590               | 958                                  | NR                             | 720               | 76                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 295                                  | NR                             | 595               | 983                                  | NR                             | 725               | 65                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 231                                  | NR                             | 600               | 997                                  | NR                             | 730               | 55                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 183                                  | NR                             | 605               | 998                                  | NR                             | 735               | 47                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 184                                  | NR                             | 610               | 982                                  | NR                             | 740               | 40                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 201                                  | NR                             | 615               | 958                                  | NR                             | 745               | 34                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



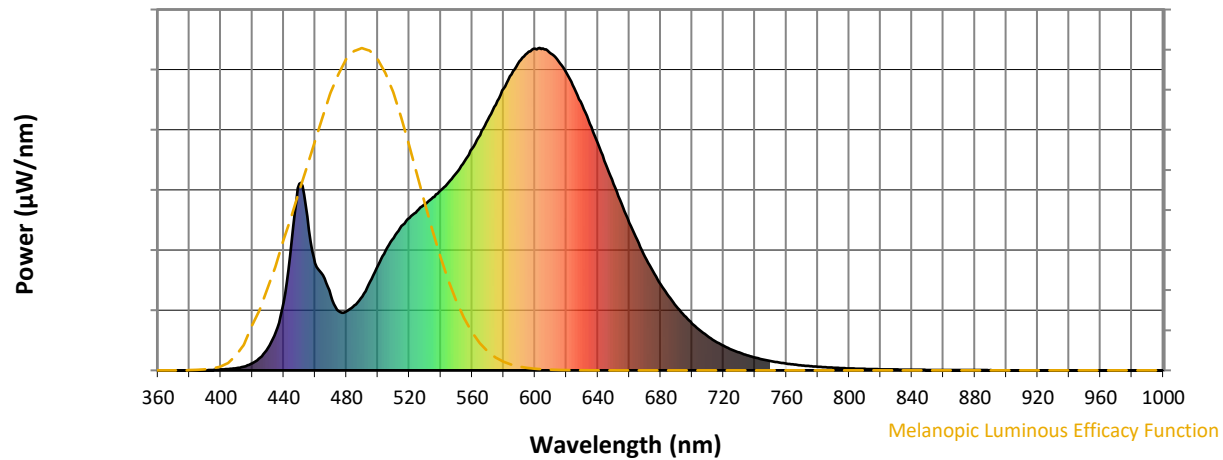
Scotopic Lumens: NR

S/P: 1.35

| 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       | 229                         | NR               | 620       | 922                         | NR               | 750       | 29                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 275                         | NR               | 625       | 875                         | NR               | 755       | 25                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 326                         | NR               | 630       | 822                         | NR               | 760       | 21                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 372                         | NR               | 635       | 764                         | NR               | 765       | 18                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 411                         | NR               | 640       | 704                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 447                         | NR               | 645       | 638                         | NR               | 775       | 13                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 473                         | NR               | 650       | 577                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 495                         | NR               | 655       | 517                         | NR               | 785       | 10                          | NR               | 915       | 0                           | NR               |
| 400       | 3                           | NR               | 530       | 515                         | NR               | 660       | 457                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 4                           | NR               | 535       | 537                         | NR               | 665       | 404                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 7                           | NR               | 540       | 559                         | NR               | 670       | 353                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 12                          | NR               | 545       | 584                         | NR               | 675       | 307                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 22                          | NR               | 550       | 612                         | NR               | 680       | 267                         | NR               | 810       | 5                           | NR               | 940       | 0                           | NR               |
| 425       | 40                          | NR               | 555       | 648                         | NR               | 685       | 230                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 69                          | NR               | 560       | 688                         | NR               | 690       | 199                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 120                         | NR               | 565       | 730                         | NR               | 695       | 170                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 212                         | NR               | 570       | 777                         | NR               | 700       | 145                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 400                         | NR               | 575       | 824                         | NR               | 705       | 124                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 578                         | NR               | 580       | 873                         | NR               | 710       | 106                         | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 478                         | NR               | 585       | 918                         | NR               | 715       | 90                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 332                         | NR               | 590       | 958                         | NR               | 720       | 76                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 295                         | NR               | 595       | 983                         | NR               | 725       | 65                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 231                         | NR               | 600       | 997                         | NR               | 730       | 55                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 183                         | NR               | 605       | 998                         | NR               | 735       | 47                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 184                         | NR               | 610       | 982                         | NR               | 740       | 40                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 201                         | NR               | 615       | 958                         | NR               | 745       | 34                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.59**

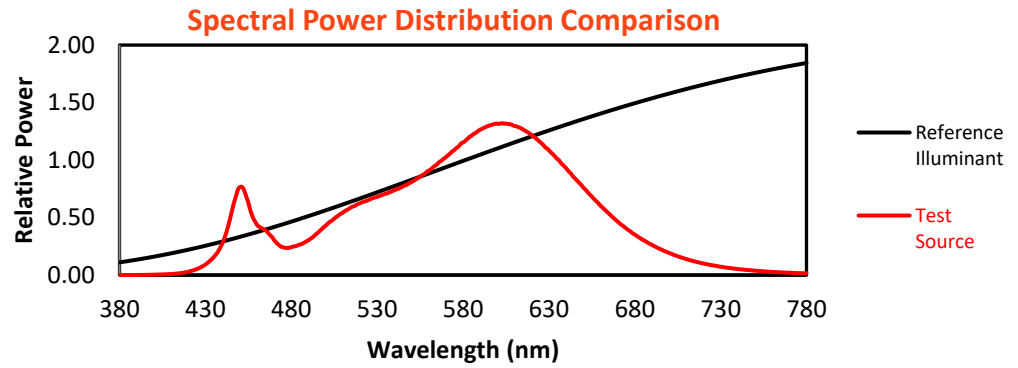
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 229                                  | NR                             | 620               | 922                                  | NR                             | 750               | 29                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 275                                  | NR                             | 625               | 875                                  | NR                             | 755               | 25                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 326                                  | NR                             | 630               | 822                                  | NR                             | 760               | 21                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 372                                  | NR                             | 635               | 764                                  | NR                             | 765               | 18                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 411                                  | NR                             | 640               | 704                                  | NR                             | 770               | 15                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 447                                  | NR                             | 645               | 638                                  | NR                             | 775               | 13                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 473                                  | NR                             | 650               | 577                                  | NR                             | 780               | 11                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 495                                  | NR                             | 655               | 517                                  | NR                             | 785               | 10                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 3                                    | NR                             | 530               | 515                                  | NR                             | 660               | 457                                  | NR                             | 790               | 8                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 4                                    | NR                             | 535               | 537                                  | NR                             | 665               | 404                                  | NR                             | 795               | 7                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 559                                  | NR                             | 670               | 353                                  | NR                             | 800               | 6                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 12                                   | NR                             | 545               | 584                                  | NR                             | 675               | 307                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 22                                   | NR                             | 550               | 612                                  | NR                             | 680               | 267                                  | NR                             | 810               | 5                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 40                                   | NR                             | 555               | 648                                  | NR                             | 685               | 230                                  | NR                             | 815               | 4                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 69                                   | NR                             | 560               | 688                                  | NR                             | 690               | 199                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 120                                  | NR                             | 565               | 730                                  | NR                             | 695               | 170                                  | NR                             | 825               | 3                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 212                                  | NR                             | 570               | 777                                  | NR                             | 700               | 145                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 400                                  | NR                             | 575               | 824                                  | NR                             | 705               | 124                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 578                                  | NR                             | 580               | 873                                  | NR                             | 710               | 106                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 478                                  | NR                             | 585               | 918                                  | NR                             | 715               | 90                                   | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 332                                  | NR                             | 590               | 958                                  | NR                             | 720               | 76                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 295                                  | NR                             | 595               | 983                                  | NR                             | 725               | 65                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 231                                  | NR                             | 600               | 997                                  | NR                             | 730               | 55                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 183                                  | NR                             | 605               | 998                                  | NR                             | 735               | 47                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 184                                  | NR                             | 610               | 982                                  | NR                             | 740               | 40                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 201                                  | NR                             | 615               | 958                                  | NR                             | 745               | 34                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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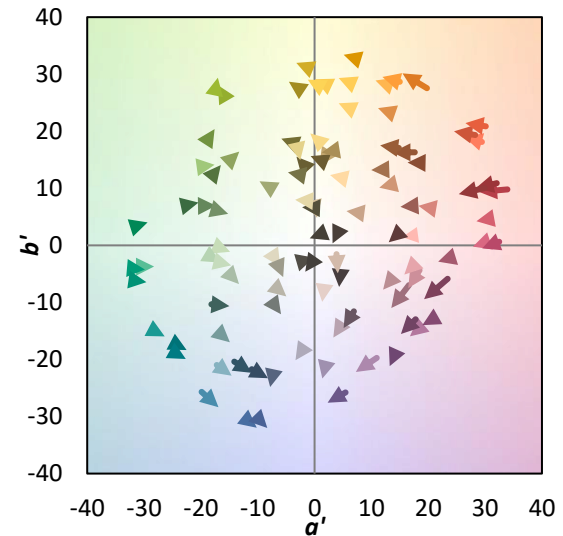
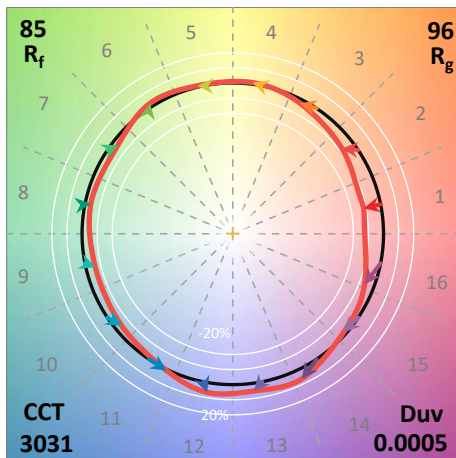
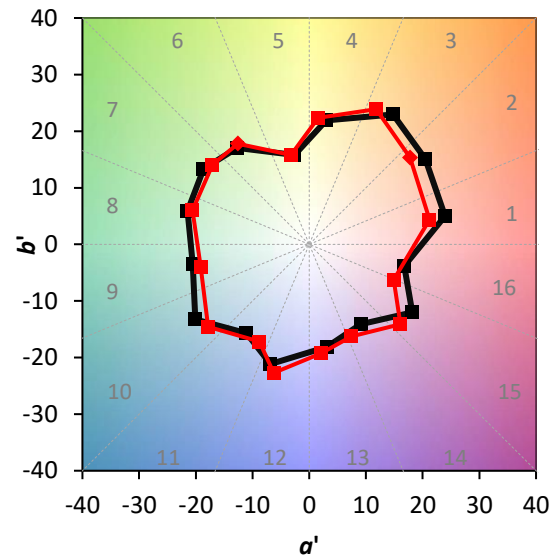
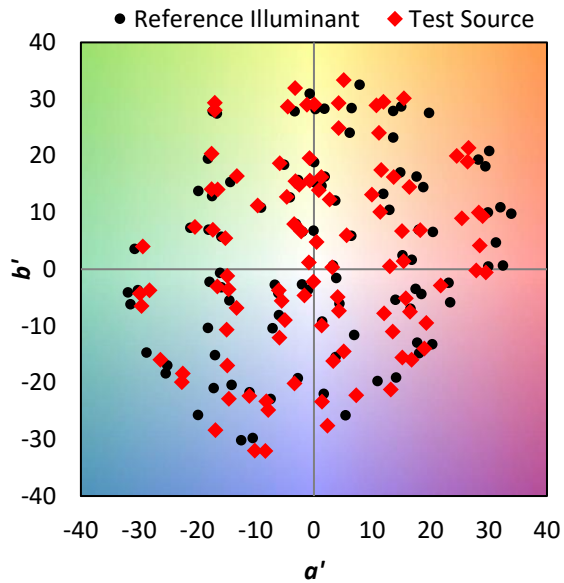
TM-30-18

### Summary

$R_f = 84.8$   
 $R_g = 95.8$   
 $CIE R_a = 82.5$   
 $R_9 = 5.8$

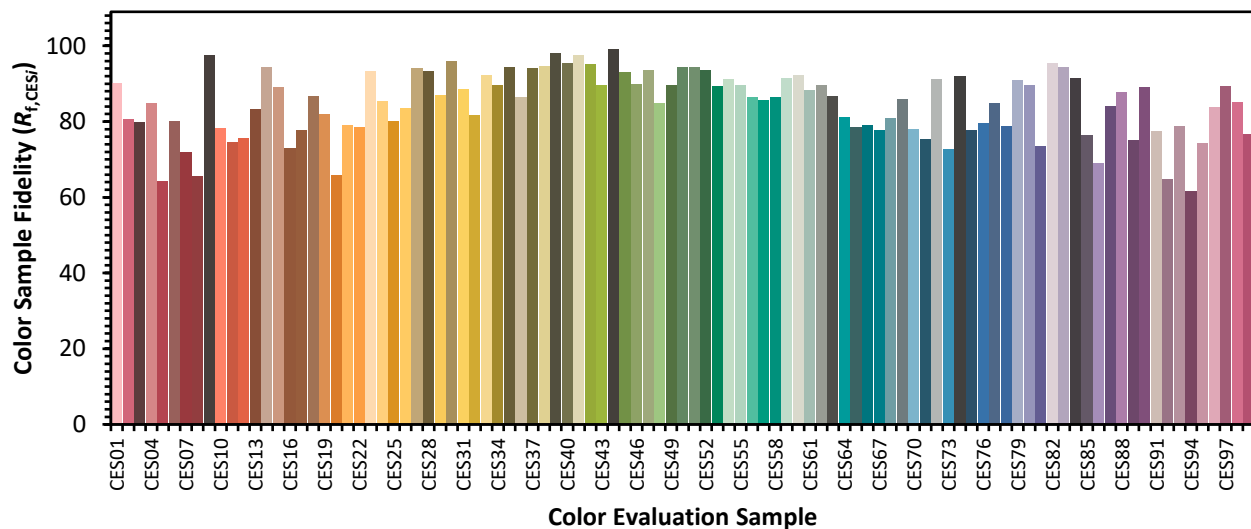


### Color Vector Graphics



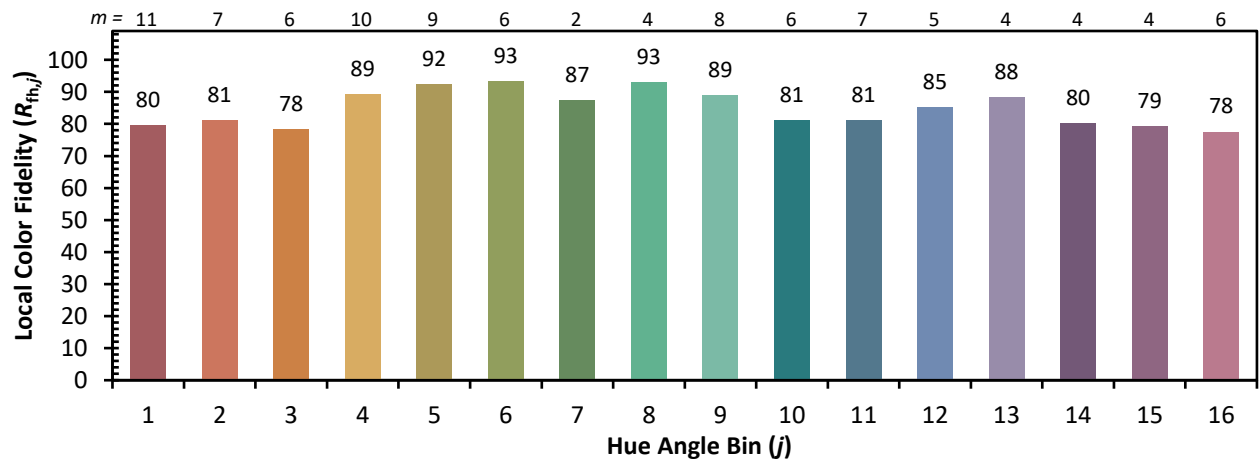
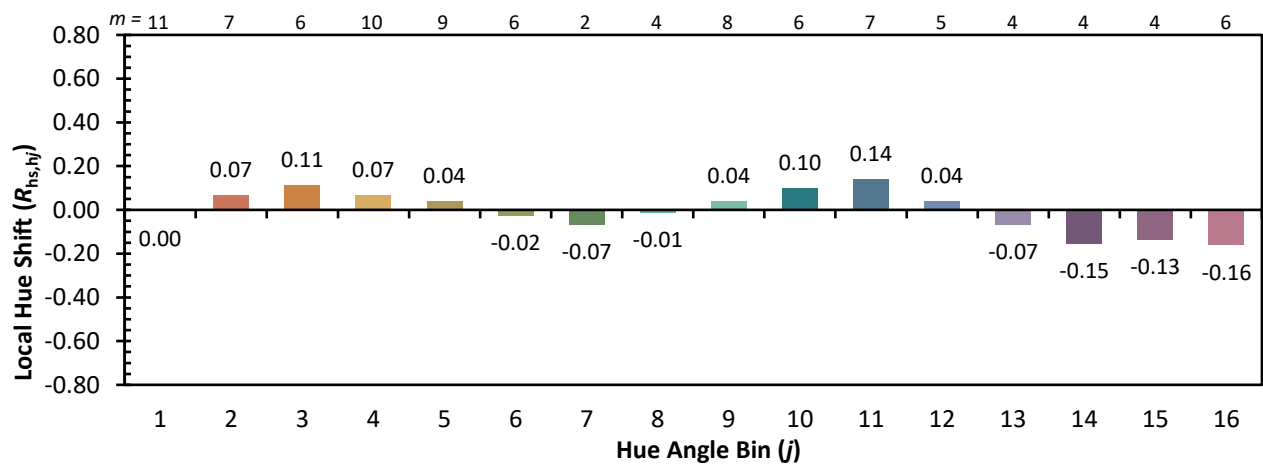
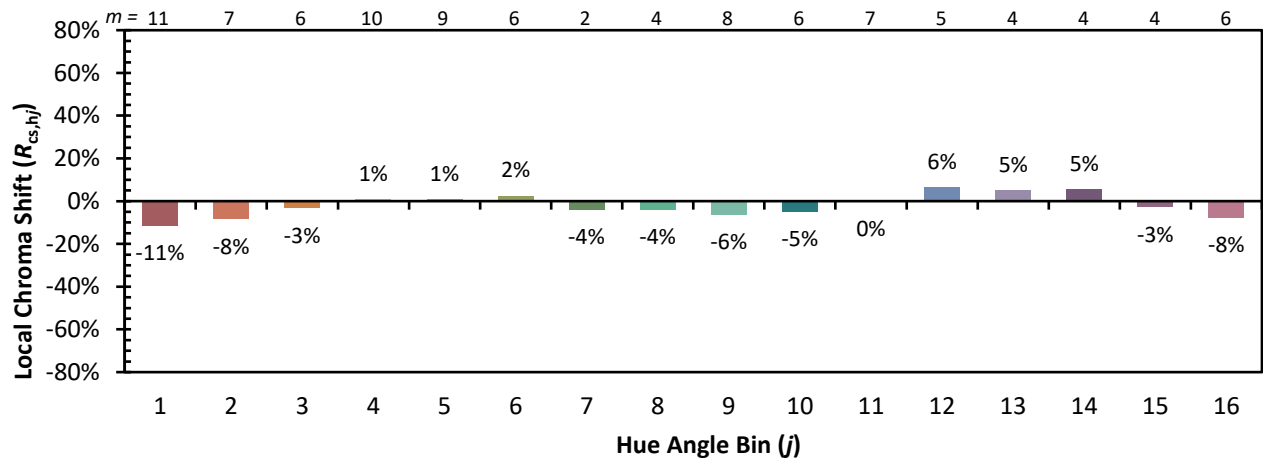
Individual Sample Fidelity Index ( $R_{f,i}$ )

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 84 | CES51 = 94 | CES76 = 80 |
| CES02 = 63 | CES27 = 94 | CES52 = 94 | CES77 = 85 |
| CES03 = 31 | CES28 = 93 | CES53 = 89 | CES78 = 79 |
| CES04 = 70 | CES29 = 87 | CES54 = 91 | CES79 = 91 |
| CES05 = 50 | CES30 = 96 | CES55 = 90 | CES80 = 90 |
| CES06 = 51 | CES31 = 89 | CES56 = 87 | CES81 = 74 |
| CES07 = 42 | CES32 = 82 | CES57 = 86 | CES82 = 95 |
| CES08 = 41 | CES33 = 92 | CES58 = 87 | CES83 = 94 |
| CES09 = 29 | CES34 = 90 | CES59 = 91 | CES84 = 92 |
| CES10 = 76 | CES35 = 94 | CES60 = 92 | CES85 = 77 |
| CES11 = 59 | CES36 = 86 | CES61 = 88 | CES86 = 69 |
| CES12 = 65 | CES37 = 94 | CES62 = 90 | CES87 = 84 |
| CES13 = 43 | CES38 = 95 | CES63 = 87 | CES88 = 88 |
| CES14 = 74 | CES39 = 98 | CES64 = 81 | CES89 = 75 |
| CES15 = 72 | CES40 = 95 | CES65 = 79 | CES90 = 89 |
| CES16 = 47 | CES41 = 97 | CES66 = 79 | CES91 = 77 |
| CES17 = 50 | CES42 = 95 | CES67 = 78 | CES92 = 65 |
| CES18 = 56 | CES43 = 90 | CES68 = 81 | CES93 = 79 |
| CES19 = 72 | CES44 = 99 | CES69 = 86 | CES94 = 62 |
| CES20 = 67 | CES45 = 93 | CES70 = 78 | CES95 = 74 |
| CES21 = 87 | CES46 = 90 | CES71 = 75 | CES96 = 84 |
| CES22 = 79 | CES47 = 94 | CES72 = 91 | CES97 = 89 |
| CES23 = 92 | CES48 = 85 | CES73 = 73 | CES98 = 85 |
| CES24 = 91 | CES49 = 90 | CES74 = 92 | CES99 = 77 |
| CES25 = 72 | CES50 = 94 | CES75 = 78 |            |

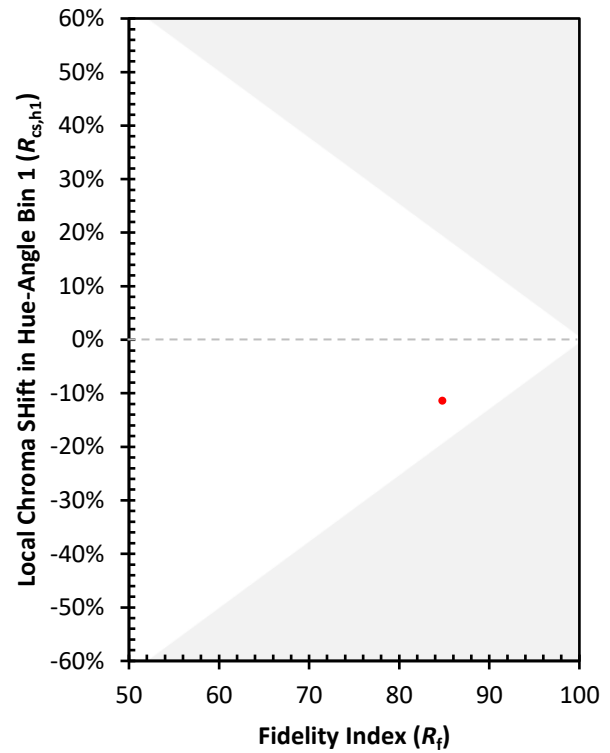
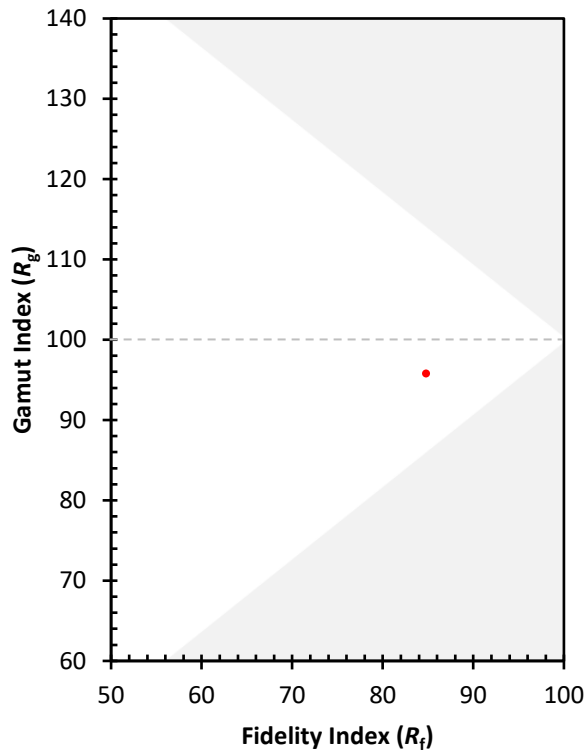




Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)