

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: IRiS

Report Number: P1257080

Luminaire Tested: P3A09R509040DE010 E3D1WMH

Issue Date: 1/29/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1257080  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2501-338-13)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/29/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A09R509040DE010 E3D1WMH  
Description: 3in Adjustable LED luminaire with, R50 optic, 4000K CCT AND, 90CRI , E3D1WMH TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

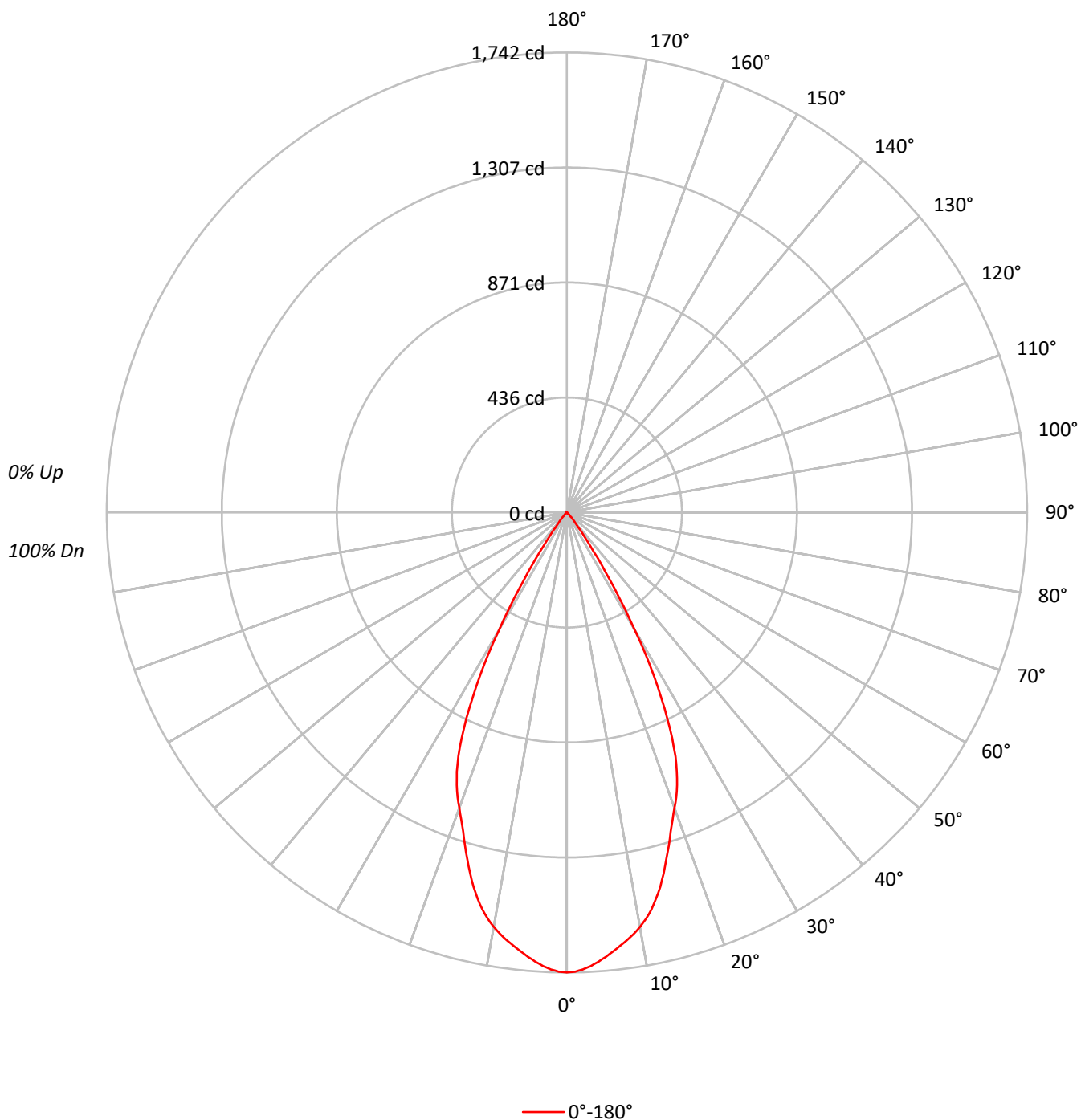
Lumens per Lamp: N/A  
Luminaire Lumens: 1093.0 lumens  
Efficiency: N/A  
Efficacy: 98.5 lumens/watt  
Spacing Criteria (0/90/45): 0.82 / 0.82 / 0.77  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 11.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P1257080

CATALOG NUMBER: P3A09R509040DE010 E3D1WMH

### Luminous Intensity Polar Plot



TEST NUMBER: P1257080

CATALOG NUMBER: P3A09R509040DE010 E3D1WMH

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

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 114 | 112 | 109 | 107 | 112 | 110 | 108 | 106 | 105 | 104 | 102 |  | 102 | 101 | 99  |  | 98  |
| 2   | 109 | 105 | 101 | 98  | 107 | 103 | 100 | 97  | 100 | 97  | 95  |  | 97  | 95  | 93  |  | 94  |
| 3   | 105 | 99  | 95  | 91  | 103 | 98  | 94  | 90  | 95  | 92  | 89  |  | 93  | 90  | 88  |  | 91  |
| 4   | 100 | 94  | 89  | 85  | 99  | 92  | 88  | 85  | 90  | 87  | 84  |  | 88  | 85  | 83  |  | 87  |
| 5   | 96  | 89  | 84  | 80  | 94  | 88  | 83  | 79  | 86  | 82  | 79  |  | 84  | 81  | 78  |  | 83  |
| 6   | 92  | 84  | 79  | 75  | 91  | 83  | 78  | 75  | 82  | 78  | 74  |  | 81  | 77  | 74  |  | 79  |
| 7   | 88  | 80  | 75  | 71  | 87  | 79  | 74  | 71  | 78  | 74  | 70  |  | 77  | 73  | 70  |  | 76  |
| 8   | 84  | 76  | 71  | 67  | 83  | 76  | 71  | 67  | 75  | 70  | 67  |  | 74  | 69  | 66  |  | 73  |
| 9   | 81  | 73  | 67  | 64  | 80  | 72  | 67  | 64  | 71  | 67  | 63  |  | 70  | 66  | 63  |  | 70  |
| 10  | 78  | 69  | 64  | 61  | 77  | 69  | 64  | 61  | 68  | 64  | 60  |  | 67  | 63  | 60  |  | 67  |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 381965 |
| 5°  | 371780 |
| 10° | 354792 |
| 15° | 321205 |
| 20° | 277877 |
| 25° | 227941 |
| 30° | 130932 |
| 35° | 40662  |
| 40° | 10935  |
| 45° | 3814   |
| 50° | 921    |
| 55° | 306    |
| 60° | 175    |
| 65° | 208    |
| 70° | 0      |
| 75° | 0      |
| 80° | 0      |
| 85° | 0      |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 3814 cd/sqm

TEST NUMBER: P1257080

CATALOG NUMBER: P3A09R509040DE010 E3D1WMH

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 158.2  | 14.5      |
| 10°-20°   | 392.0  | 35.9      |
| 20°-30°   | 412.0  | 37.7      |
| 30°-40°   | 117.9  | 10.8      |
| 40°-50°   | 11.5   | 1.1       |
| 50°-60°   | 1.0    | 0.1       |
| 60°-70°   | 0.3    | 0.0       |
| 70°-80°   | 0.0    | 0.0       |
| 80°-90°   | 0.0    | 0.0       |
| 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       |
| <hr/>     |        |           |
| 0°-30°    | 962.3  | 88.0      |
| 0°-40°    | 1080.2 | 98.8      |
| 0°-60°    | 1092.7 | 100.0     |
| 0°-90°    | 1093.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1093.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 1742 |      |
| 5°  | 1689 | 158  |
| 15° | 1415 | 392  |
| 25° | 942  | 412  |
| 35° | 152  | 118  |
| 45° | 12   | 12   |
| 55° | 1    | 1    |
| 65° | 0    | 0    |
| 75° | 0    | 0    |
| 85° | 0    | 0    |
| 90° | 0    |      |

TEST NUMBER: P1257080

CATALOG NUMBER: P3A09R509040DE010 E3D1WMH

**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 1741.9 |
| 1°    | 1739.2 |
| 2°    | 1731.5 |
| 3°    | 1720.3 |
| 4°    | 1705.2 |
| 5°    | 1689.0 |
| 6°    | 1671.7 |
| 7°    | 1653.2 |
| 8°    | 1635.8 |
| 9°    | 1615.8 |
| 10°   | 1593.4 |
| 11°   | 1567.6 |
| 12°   | 1537.9 |
| 13°   | 1500.9 |
| 14°   | 1460.8 |
| 15°   | 1414.9 |
| 16°   | 1366.3 |
| 17°   | 1319.2 |
| 18°   | 1271.0 |
| 19°   | 1228.6 |
| 20°   | 1190.8 |
| 21°   | 1154.6 |
| 22°   | 1113.3 |
| 23°   | 1065.9 |
| 24°   | 1010.3 |
| 25°   | 942.1  |
| 26°   | 868.0  |
| 27°   | 785.5  |
| 28°   | 703.4  |
| 29°   | 614.7  |
| 30°   | 517.1  |
| 31°   | 425.7  |
| 32°   | 341.7  |
| 32.5° | 305.0  |
| 33°   | 268.0  |
| 34°   | 205.5  |
| 35°   | 151.9  |
| 36°   | 111.4  |
| 37°   | 82.9   |
| 37.5° | 71.7   |
| 38°   | 62.1   |
| 39°   | 48.2   |
| 40°   | 38.2   |
| 42.5° | 21.6   |
| 45°   | 12.3   |



TEST NUMBER: P1257080

CATALOG NUMBER: P3A09R509040DE010 E3D1WMH

**CANDELA DISTRIBUTION (continued):**

|       | 0°  |
|-------|-----|
| 47.5° | 6.9 |
| 50°   | 2.7 |
| 52.5° | 1.2 |
| 55°   | 0.8 |
| 57.5° | 0.8 |
| 60°   | 0.4 |
| 62.5° | 0.4 |
| 65°   | 0.4 |
| 67.5° | 0.4 |
| 70°   | 0.0 |
| 72.5° | 0.0 |
| 75°   | 0.0 |
| 77.5° | 0.0 |
| 80°   | 0.0 |
| 82.5° | 0.0 |
| 85°   | 0.0 |
| 87.5° | 0.0 |
| 90°   | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

IRiS

Report Number: SP1-2504-409-14

Test Date: 05/14/2025

Luminaire Tested: LD3A05R129040D010 E3D1H

Data in this report applies to families of products including LD3A



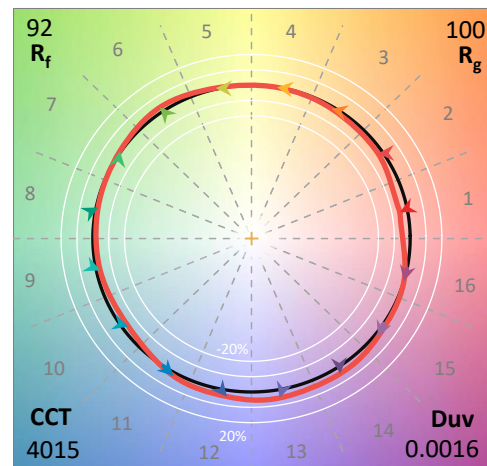
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2504-409-14  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 05/18/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: IRiS  
 Catalog Number: **LD3A05R129040D010 E3D1H**  
 Description: 3in Adjustable LED luminaire with, R12 optic, 4000K CCT AND, 90CRI LEDS, E3D1H TRIM

### Spectral Parameters

CCT (K): 4015  
 CIE  $u'$ : 0.2239  
 CIE  $v'$ : 0.5033  
 Duv: 0.0016  
 CIE x: 0.3809  
 CIE y: 0.3805  
 CIE z: 0.2386  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 578  
 Purity: 28.51686  
 R<sub>f</sub>: 91.5  
 R<sub>g</sub>: 100.3

CRI (Ra): 92.3  
 R1: 93.1  
 R2: 93.8  
 R3: 94.2  
 R4: 94.2  
 R5: 92.7  
 R6: 91.9  
 R7: 94.0  
 R8: 84.8  
 R9: 58.4  
 R10: 85.3  
 R11: 94.4  
 R12: 74.9  
 R13: 93.3  
 R14: 96.5  
 R15: 89.0



### Test Conditions

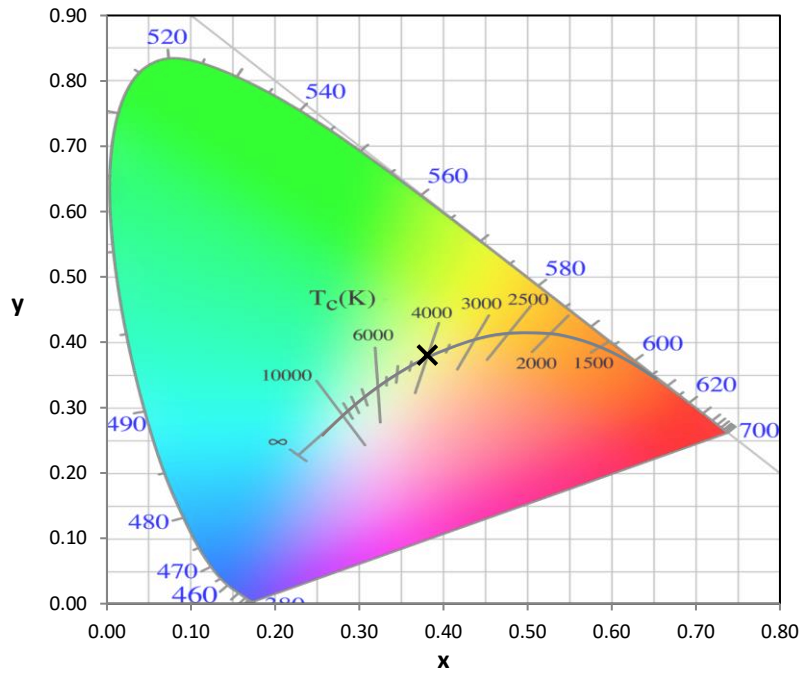
Stabilization Time: 26M  
 Operation Time: 1H 26M  
 Sphere Temperature (°C): 24.9

REPORT NUMBER: SP1-2504-409-14

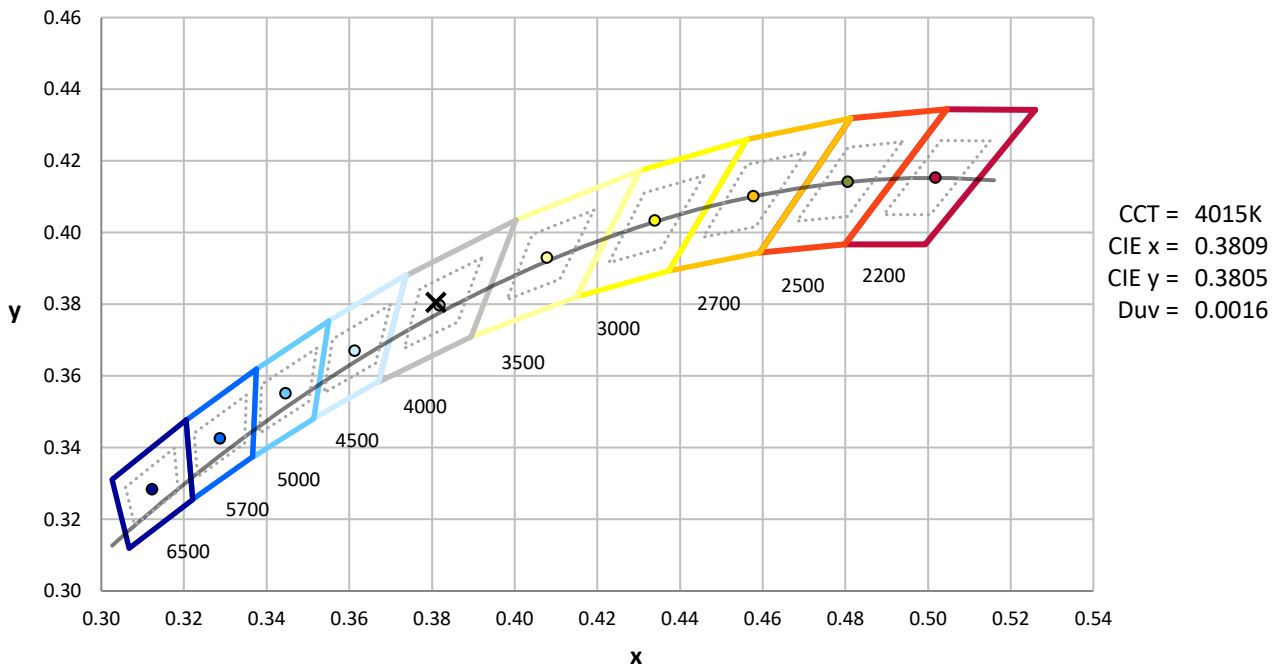
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

REPORT NUMBER: SP1-2504-409-14

**CIE 1931 Chromaticity Diagram**

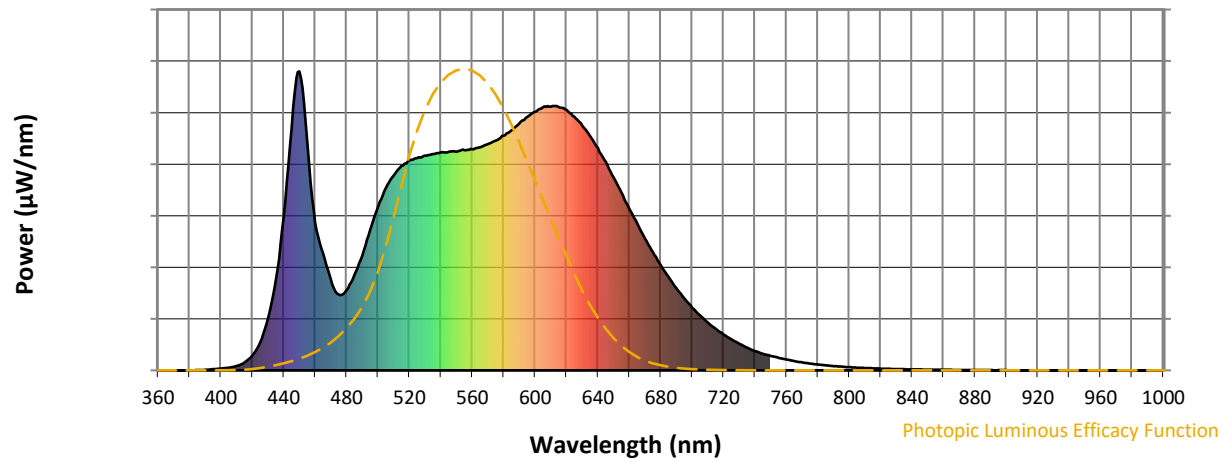


**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



REPORT NUMBER: SP1-2504-409-14

### Photopic Flux vs. Wavelength

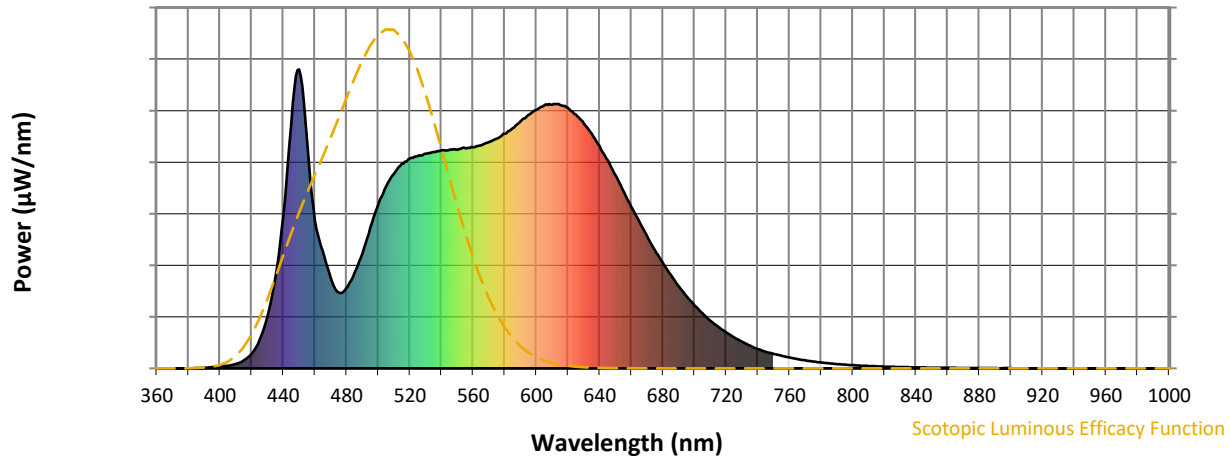


### Photopic Lumens: NR

| 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    | 385                      | NR            | 620    | 871                      | NR            | 750    | 49                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 468                      | NR            | 625    | 849                      | NR            | 755    | 42                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 547                      | NR            | 630    | 819                      | NR            | 760    | 36                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 609                      | NR            | 635    | 784                      | NR            | 765    | 31                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 652                      | NR            | 640    | 744                      | NR            | 770    | 27                       | NR            | 900    | 1                        | NR            |
| 385    | 1                        | NR            | 515    | 684                      | NR            | 645    | 697                      | NR            | 775    | 23                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 702                      | NR            | 650    | 645                      | NR            | 780    | 20                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 710                      | NR            | 655    | 594                      | NR            | 785    | 17                       | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 718                      | NR            | 660    | 541                      | NR            | 790    | 14                       | NR            | 920    | 0                        | NR            |
| 405    | 9                        | NR            | 535    | 723                      | NR            | 665    | 491                      | NR            | 795    | 12                       | NR            | 925    | 0                        | NR            |
| 410    | 15                       | NR            | 540    | 729                      | NR            | 670    | 441                      | NR            | 800    | 11                       | NR            | 930    | 0                        | NR            |
| 415    | 26                       | NR            | 545    | 731                      | NR            | 675    | 395                      | NR            | 805    | 9                        | NR            | 935    | 0                        | NR            |
| 420    | 49                       | NR            | 550    | 731                      | NR            | 680    | 352                      | NR            | 810    | 8                        | NR            | 940    | 0                        | NR            |
| 425    | 95                       | NR            | 555    | 736                      | NR            | 685    | 312                      | NR            | 815    | 7                        | NR            | 945    | 0                        | NR            |
| 430    | 173                      | NR            | 560    | 740                      | NR            | 690    | 275                      | NR            | 820    | 6                        | NR            | 950    | 0                        | NR            |
| 435    | 305                      | NR            | 565    | 746                      | NR            | 695    | 241                      | NR            | 825    | 5                        | NR            | 955    | 0                        | NR            |
| 440    | 511                      | NR            | 570    | 757                      | NR            | 700    | 210                      | NR            | 830    | 4                        | NR            | 960    | 0                        | NR            |
| 445    | 811                      | NR            | 575    | 768                      | NR            | 705    | 184                      | NR            | 835    | 4                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 785                      | NR            | 710    | 159                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 760                      | NR            | 585    | 803                      | NR            | 715    | 139                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 496                      | NR            | 590    | 826                      | NR            | 720    | 120                      | NR            | 850    | 3                        | NR            | 980    | 0                        | NR            |
| 465    | 392                      | NR            | 595    | 848                      | NR            | 725    | 104                      | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 302                      | NR            | 600    | 865                      | NR            | 730    | 89                       | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 253                      | NR            | 605    | 879                      | NR            | 735    | 76                       | NR            | 865    | 2                        | NR            | 995    | 0                        | NR            |
| 480    | 269                      | NR            | 610    | 882                      | NR            | 740    | 65                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 319                      | NR            | 615    | 881                      | NR            | 745    | 55                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2504-409-14

### Scotopic Flux vs. Wavelength



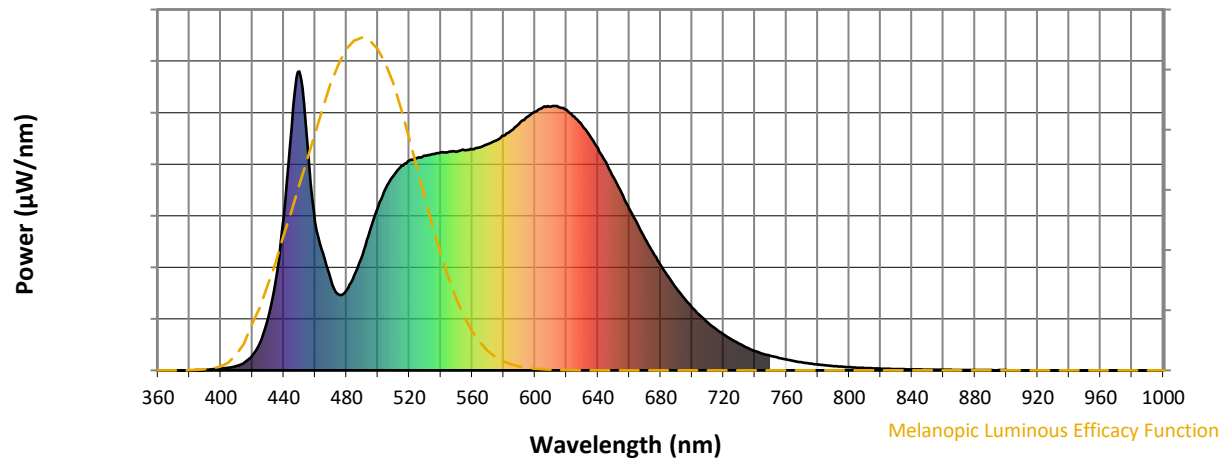
Scotopic Lumens: NR

S/P: 1.77

| $\lambda$<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               | 385                                  | NR                             | 620               | 871                                  | NR                             | 750               | 49                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 468                                  | NR                             | 625               | 849                                  | NR                             | 755               | 42                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 547                                  | NR                             | 630               | 819                                  | NR                             | 760               | 36                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 609                                  | NR                             | 635               | 784                                  | NR                             | 765               | 31                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 652                                  | NR                             | 640               | 744                                  | NR                             | 770               | 27                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 684                                  | NR                             | 645               | 697                                  | NR                             | 775               | 23                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 702                                  | NR                             | 650               | 645                                  | NR                             | 780               | 20                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 710                                  | NR                             | 655               | 594                                  | NR                             | 785               | 17                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 718                                  | NR                             | 660               | 541                                  | NR                             | 790               | 14                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 9                                    | NR                             | 535               | 723                                  | NR                             | 665               | 491                                  | NR                             | 795               | 12                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 15                                   | NR                             | 540               | 729                                  | NR                             | 670               | 441                                  | NR                             | 800               | 11                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 26                                   | NR                             | 545               | 731                                  | NR                             | 675               | 395                                  | NR                             | 805               | 9                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 49                                   | NR                             | 550               | 731                                  | NR                             | 680               | 352                                  | NR                             | 810               | 8                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 95                                   | NR                             | 555               | 736                                  | NR                             | 685               | 312                                  | NR                             | 815               | 7                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 173                                  | NR                             | 560               | 740                                  | NR                             | 690               | 275                                  | NR                             | 820               | 6                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 305                                  | NR                             | 565               | 746                                  | NR                             | 695               | 241                                  | NR                             | 825               | 5                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 511                                  | NR                             | 570               | 757                                  | NR                             | 700               | 210                                  | NR                             | 830               | 4                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 811                                  | NR                             | 575               | 768                                  | NR                             | 705               | 184                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 1000                                 | NR                             | 580               | 785                                  | NR                             | 710               | 159                                  | NR                             | 840               | 3                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 760                                  | NR                             | 585               | 803                                  | NR                             | 715               | 139                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 496                                  | NR                             | 590               | 826                                  | NR                             | 720               | 120                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 392                                  | NR                             | 595               | 848                                  | NR                             | 725               | 104                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 302                                  | NR                             | 600               | 865                                  | NR                             | 730               | 89                                   | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 253                                  | NR                             | 605               | 879                                  | NR                             | 735               | 76                                   | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 269                                  | NR                             | 610               | 882                                  | NR                             | 740               | 65                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 319                                  | NR                             | 615               | 881                                  | NR                             | 745               | 55                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2504-409-14

### Melanopic Flux vs. Wavelength

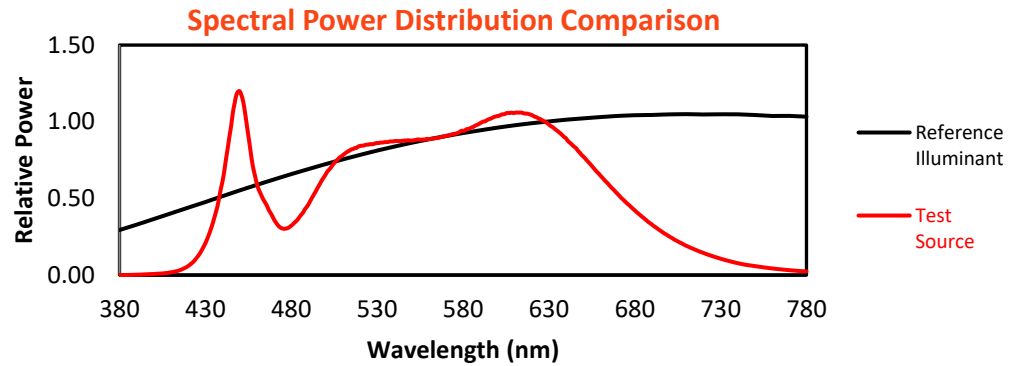
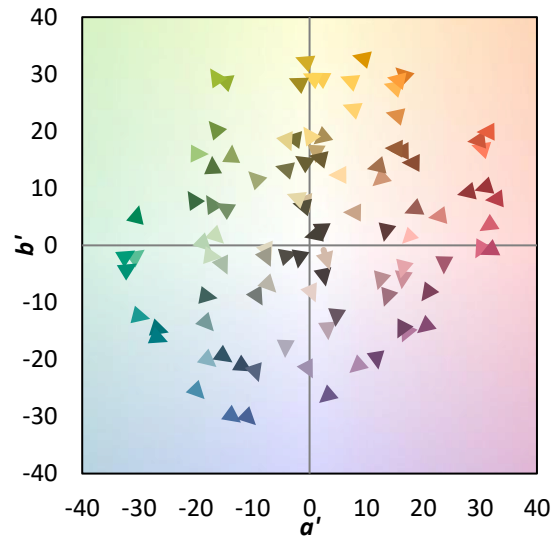
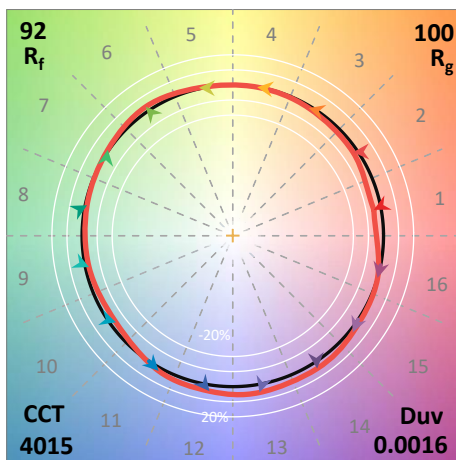
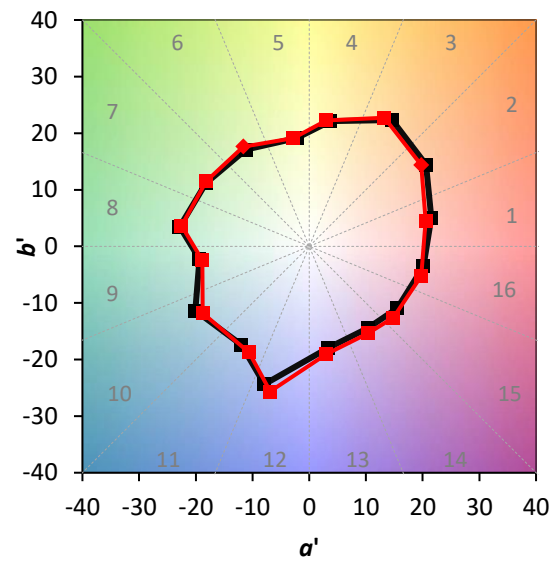
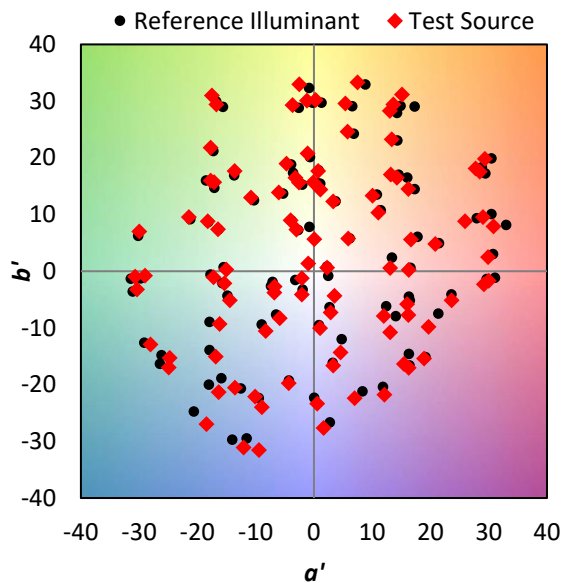


Melanopic Lumens: NR

M/P: 3.62

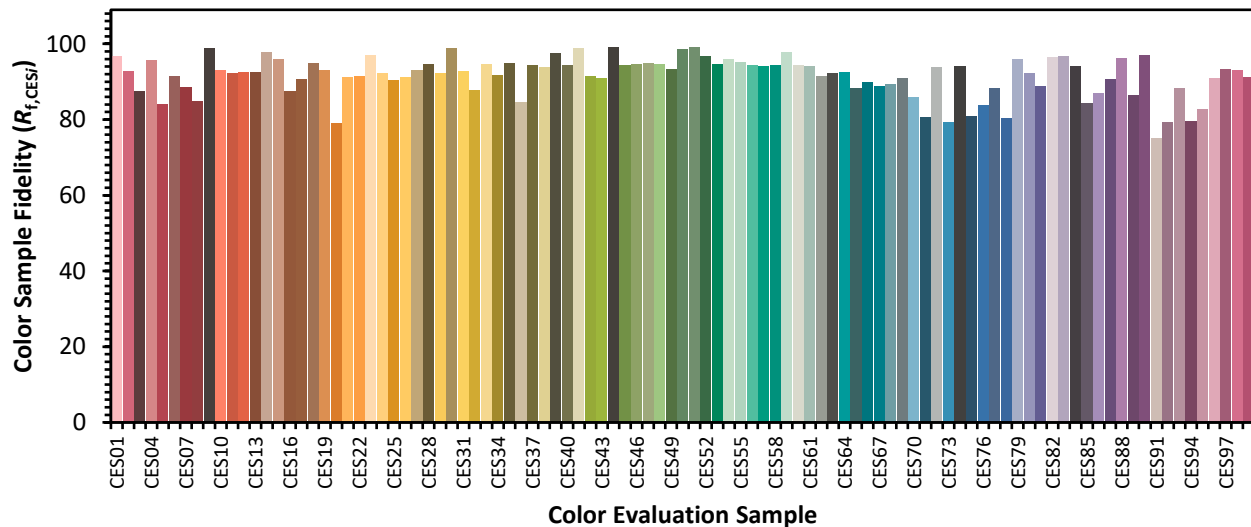
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 385                                    | NR                             | 620               | 871                                    | NR                             | 750               | 49                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 468                                    | NR                             | 625               | 849                                    | NR                             | 755               | 42                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 547                                    | NR                             | 630               | 819                                    | NR                             | 760               | 36                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 609                                    | NR                             | 635               | 784                                    | NR                             | 765               | 31                                     | NR                             | 895               | 1                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 652                                    | NR                             | 640               | 744                                    | NR                             | 770               | 27                                     | NR                             | 900               | 1                                      | NR                             |
| 385               | 1                                      | NR                             | 515               | 684                                    | NR                             | 645               | 697                                    | NR                             | 775               | 23                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 2                                      | NR                             | 520               | 702                                    | NR                             | 650               | 645                                    | NR                             | 780               | 20                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 4                                      | NR                             | 525               | 710                                    | NR                             | 655               | 594                                    | NR                             | 785               | 17                                     | NR                             | 915               | 0                                      | NR                             |
| 400               | 6                                      | NR                             | 530               | 718                                    | NR                             | 660               | 541                                    | NR                             | 790               | 14                                     | NR                             | 920               | 0                                      | NR                             |
| 405               | 9                                      | NR                             | 535               | 723                                    | NR                             | 665               | 491                                    | NR                             | 795               | 12                                     | NR                             | 925               | 0                                      | NR                             |
| 410               | 15                                     | NR                             | 540               | 729                                    | NR                             | 670               | 441                                    | NR                             | 800               | 11                                     | NR                             | 930               | 0                                      | NR                             |
| 415               | 26                                     | NR                             | 545               | 731                                    | NR                             | 675               | 395                                    | NR                             | 805               | 9                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 49                                     | NR                             | 550               | 731                                    | NR                             | 680               | 352                                    | NR                             | 810               | 8                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 95                                     | NR                             | 555               | 736                                    | NR                             | 685               | 312                                    | NR                             | 815               | 7                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 173                                    | NR                             | 560               | 740                                    | NR                             | 690               | 275                                    | NR                             | 820               | 6                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 305                                    | NR                             | 565               | 746                                    | NR                             | 695               | 241                                    | NR                             | 825               | 5                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 511                                    | NR                             | 570               | 757                                    | NR                             | 700               | 210                                    | NR                             | 830               | 4                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 811                                    | NR                             | 575               | 768                                    | NR                             | 705               | 184                                    | NR                             | 835               | 4                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 1000                                   | NR                             | 580               | 785                                    | NR                             | 710               | 159                                    | NR                             | 840               | 3                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 760                                    | NR                             | 585               | 803                                    | NR                             | 715               | 139                                    | NR                             | 845               | 3                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 496                                    | NR                             | 590               | 826                                    | NR                             | 720               | 120                                    | NR                             | 850               | 3                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 392                                    | NR                             | 595               | 848                                    | NR                             | 725               | 104                                    | NR                             | 855               | 2                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 302                                    | NR                             | 600               | 865                                    | NR                             | 730               | 89                                     | NR                             | 860               | 2                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 253                                    | NR                             | 605               | 879                                    | NR                             | 735               | 76                                     | NR                             | 865               | 2                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 269                                    | NR                             | 610               | 882                                    | NR                             | 740               | 65                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 319                                    | NR                             | 615               | 881                                    | NR                             | 745               | 55                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

REPORT NUMBER: SP1-2504-409-14

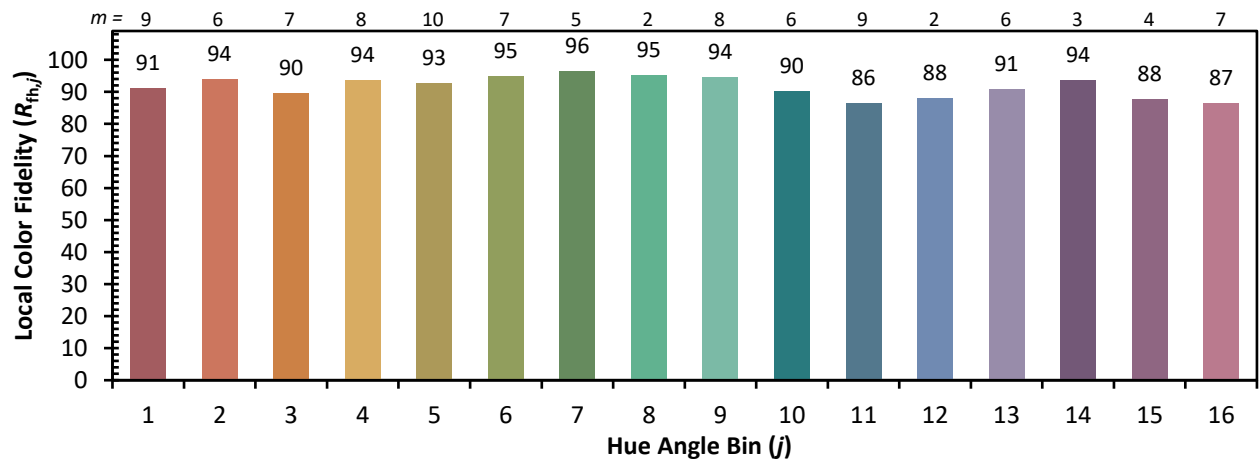
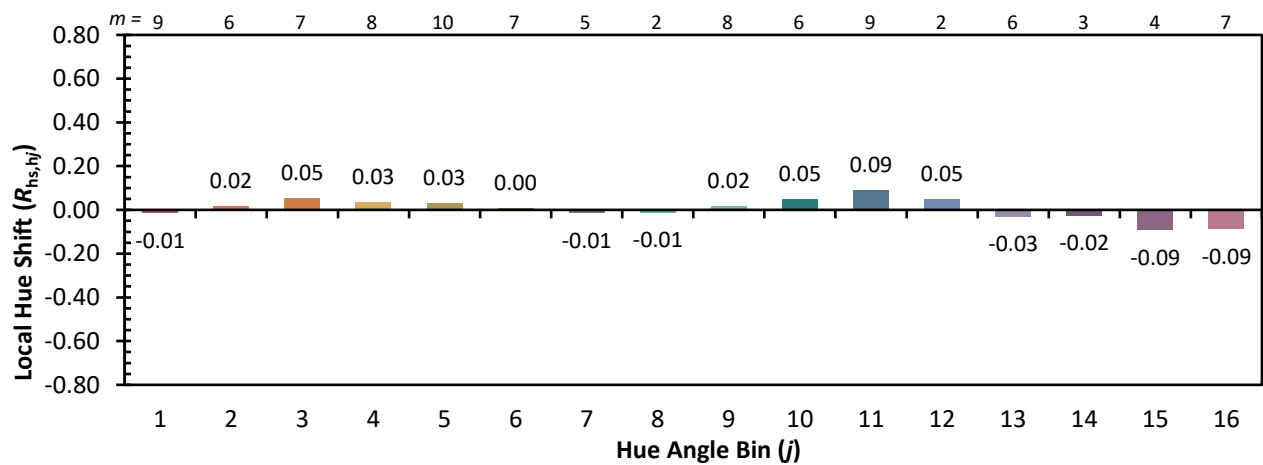
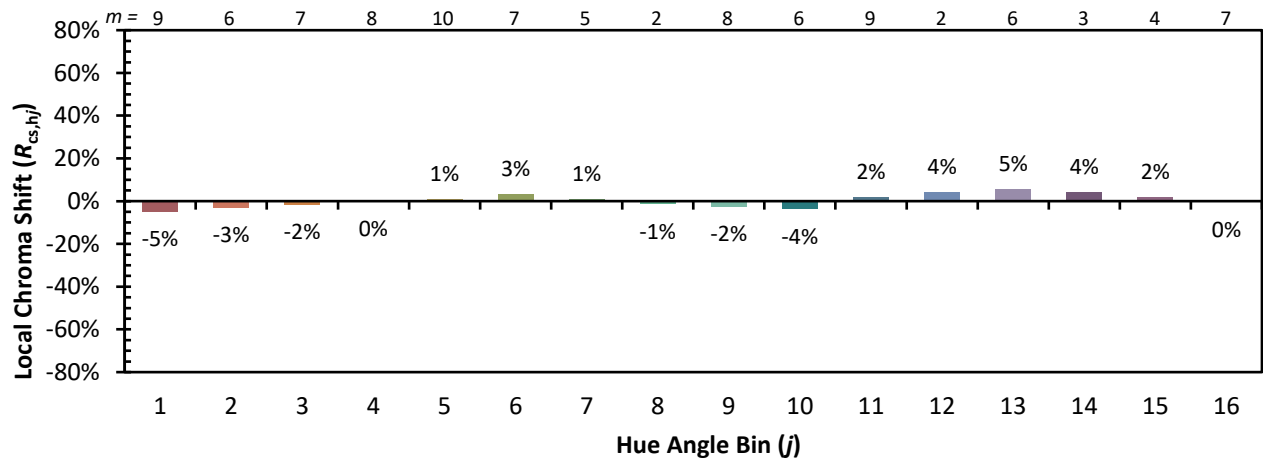
**TM-30-18**
**Summary**
 $R_f = 91.5$   
 $R_g = 100.3$   
 CIE  $R_a = 92.3$   
 $R_9 = 58.4$ 

**Color Vector Graphics**


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

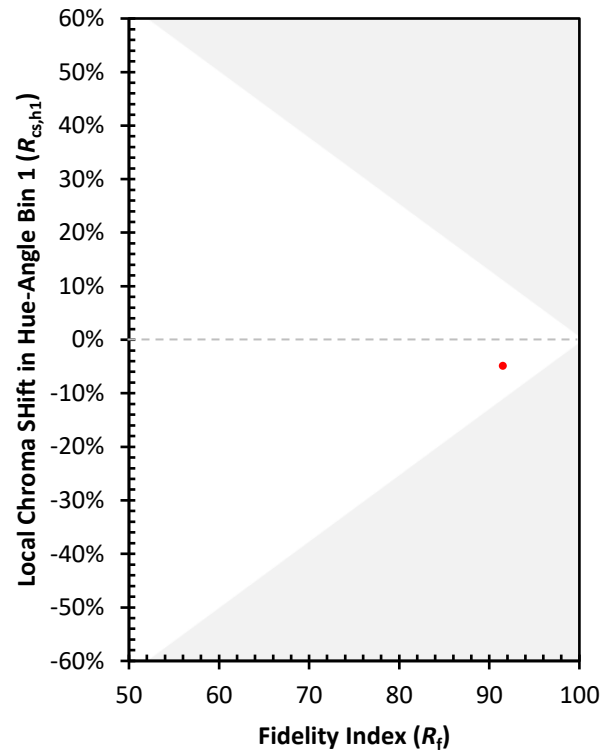
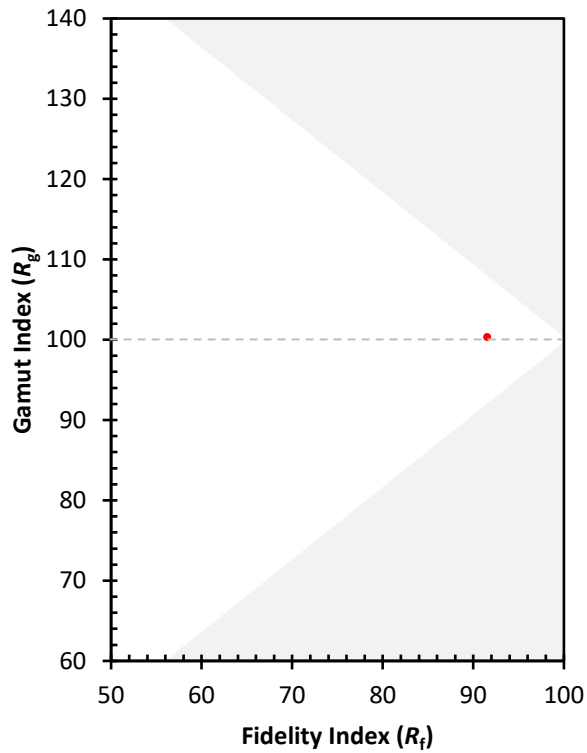
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 91 | CES51 = 99 | CES76 = 84 |
| CES02 = 61 | CES27 = 93 | CES52 = 97 | CES77 = 88 |
| CES03 = 31 | CES28 = 95 | CES53 = 95 | CES78 = 80 |
| CES04 = 69 | CES29 = 92 | CES54 = 96 | CES79 = 96 |
| CES05 = 49 | CES30 = 99 | CES55 = 95 | CES80 = 92 |
| CES06 = 50 | CES31 = 93 | CES56 = 94 | CES81 = 89 |
| CES07 = 42 | CES32 = 88 | CES57 = 94 | CES82 = 96 |
| CES08 = 41 | CES33 = 95 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 92 | CES59 = 98 | CES84 = 94 |
| CES10 = 74 | CES35 = 95 | CES60 = 94 | CES85 = 84 |
| CES11 = 57 | CES36 = 85 | CES61 = 94 | CES86 = 87 |
| CES12 = 63 | CES37 = 94 | CES62 = 92 | CES87 = 91 |
| CES13 = 43 | CES38 = 94 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 98 | CES64 = 93 | CES89 = 87 |
| CES15 = 71 | CES40 = 94 | CES65 = 88 | CES90 = 97 |
| CES16 = 47 | CES41 = 99 | CES66 = 90 | CES91 = 75 |
| CES17 = 49 | CES42 = 91 | CES67 = 89 | CES92 = 79 |
| CES18 = 56 | CES43 = 91 | CES68 = 89 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 80 |
| CES20 = 66 | CES45 = 94 | CES70 = 86 | CES95 = 83 |
| CES21 = 85 | CES46 = 95 | CES71 = 81 | CES96 = 91 |
| CES22 = 78 | CES47 = 95 | CES72 = 94 | CES97 = 93 |
| CES23 = 91 | CES48 = 95 | CES73 = 79 | CES98 = 93 |
| CES24 = 90 | CES49 = 93 | CES74 = 94 | CES99 = 91 |
| CES25 = 71 | CES50 = 99 | CES75 = 81 |            |





**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)