

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: P1261436

Luminaire Tested: P3A02R209727DE010 E3PHLD1MW

Issue Date: 1/29/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1261436  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2509-551-10)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/29/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A02R209727DE010 E3PHLD1MW  
Description: 3in Adjustable LED luminaire with, R20 optic, 2700K CCT AND, 97CRI , E3PHLD1MW TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

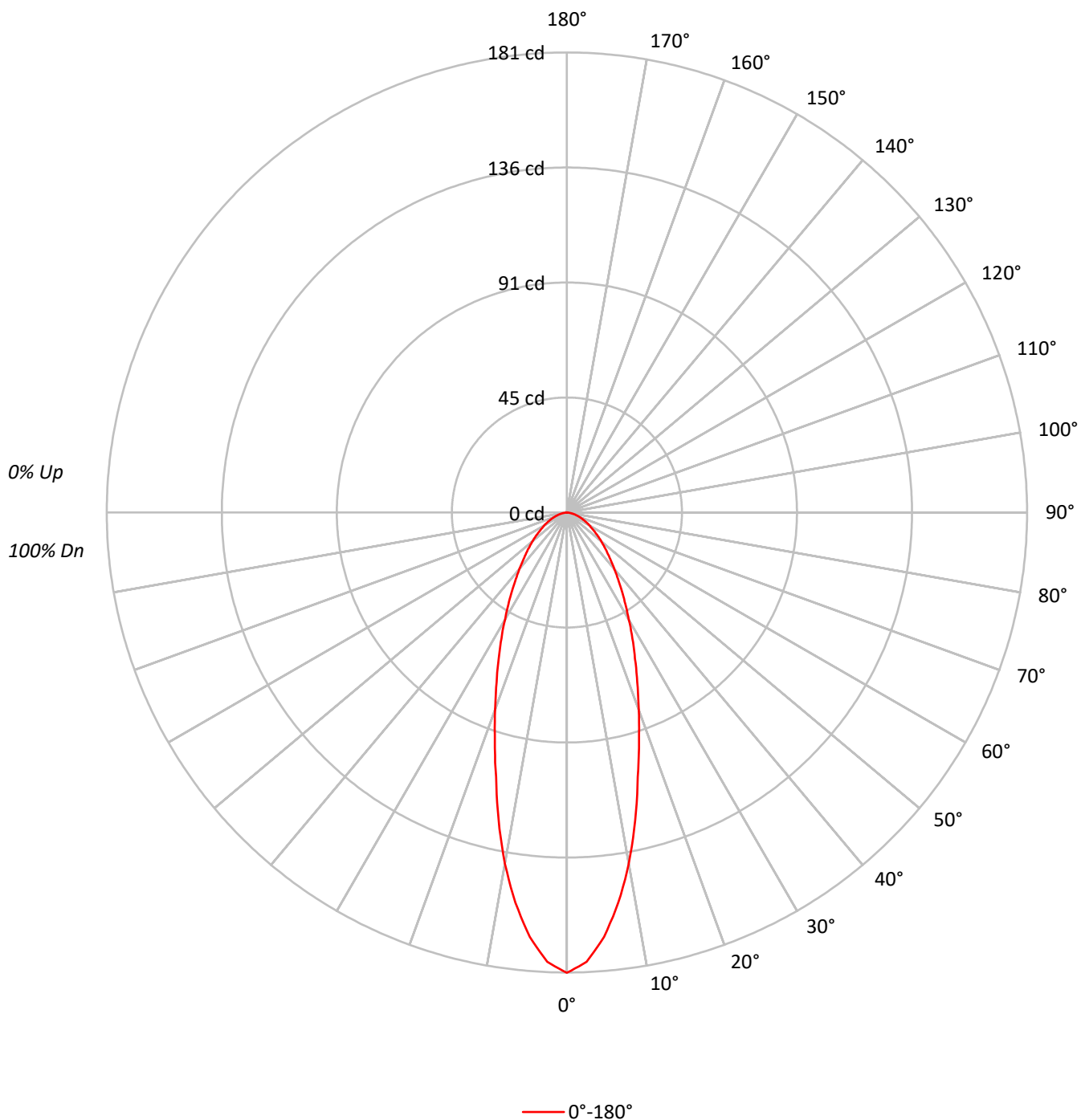
Lumens per Lamp: N/A  
Luminaire Lumens: 140.0 lumens  
Efficiency: N/A  
Efficacy: 38.9 lumens/watt  
Spacing Criteria (0/90/45): 0.58 / 0.58 / 0.68  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 3.6  
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: P1261436

CATALOG NUMBER: P3A02R209727DE010 E3PHLD1MW

### Luminous Intensity Polar Plot



TEST NUMBER: P1261436

CATALOG NUMBER: P3A02R209727DE010 E3PHLD1MW

**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   | 112 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 102 | 100 | 97  |  | 98  | 96  | 95  |  | 95  |
| 2   | 104 | 98  | 93  | 89  | 102 | 96  | 92  | 88  | 93  | 89  | 86  |  | 90  | 87  | 84  |  | 87  |
| 3   | 98  | 90  | 83  | 78  | 95  | 88  | 82  | 78  | 85  | 81  | 77  |  | 83  | 79  | 75  |  | 80  |
| 4   | 92  | 82  | 75  | 70  | 90  | 81  | 75  | 70  | 79  | 73  | 69  |  | 77  | 72  | 68  |  | 75  |
| 5   | 86  | 76  | 69  | 64  | 84  | 75  | 68  | 63  | 73  | 67  | 63  |  | 71  | 66  | 62  |  | 70  |
| 6   | 81  | 70  | 63  | 58  | 79  | 70  | 63  | 58  | 68  | 62  | 58  |  | 66  | 61  | 57  |  | 65  |
| 7   | 76  | 66  | 59  | 54  | 75  | 65  | 58  | 53  | 63  | 57  | 53  |  | 62  | 57  | 53  |  | 61  |
| 8   | 72  | 61  | 54  | 50  | 71  | 61  | 54  | 50  | 60  | 54  | 49  |  | 58  | 53  | 49  |  | 57  |
| 9   | 69  | 58  | 51  | 46  | 67  | 57  | 51  | 46  | 56  | 50  | 46  |  | 55  | 50  | 46  |  | 54  |
| 10  | 65  | 54  | 48  | 43  | 64  | 54  | 48  | 43  | 53  | 47  | 43  |  | 52  | 47  | 43  |  | 51  |

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

|     |       |
|-----|-------|
|     | 0°    |
| 0°  | 39712 |
| 5°  | 36892 |
| 10° | 31240 |
| 15° | 24450 |
| 20° | 19252 |
| 25° | 15340 |
| 30° | 12331 |
| 35° | 10065 |
| 40° | 8330  |
| 45° | 7008  |
| 50° | 6004  |
| 55° | 5161  |
| 60° | 4517  |
| 65° | 3943  |
| 70° | 3398  |
| 75° | 2965  |
| 80° | 2273  |
| 85° | 1510  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 7008 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 15.1   | 10.8      |
| 10°-20°   | 30.2   | 21.5      |
| 20°-30°   | 29.3   | 20.9      |
| 30°-40°   | 23.7   | 16.9      |
| 40°-50°   | 17.6   | 12.6      |
| 50°-60°   | 12.2   | 8.7       |
| 60°-70°   | 7.7    | 5.5       |
| 70°-80°   | 3.7    | 2.6       |
| 80°-90°   | 0.7    | 0.5       |
| 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°    | 74.6   | 53.2      |
| 0°-40°    | 98.2   | 70.1      |
| 0°-60°    | 128.0  | 91.4      |
| 0°-90°    | 140.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 140.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | Flux |
|-----|-----|------|
| 0°  | 181 |      |
| 5°  | 168 | 15   |
| 15° | 108 | 30   |
| 25° | 63  | 29   |
| 35° | 38  | 24   |
| 45° | 23  | 18   |
| 55° | 14  | 12   |
| 65° | 8   | 8    |
| 75° | 4   | 4    |
| 85° | 1   | 1    |
| 90° | 0   |      |

TEST NUMBER: P1261436

CATALOG NUMBER: P3A02R209727DE010 E3PHLD1MW

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    |
|-------|-------|
| 0°    | 181.1 |
| 2.5°  | 177.0 |
| 5°    | 167.6 |
| 7.5°  | 154.9 |
| 10°   | 140.3 |
| 12.5° | 124.1 |
| 15°   | 107.7 |
| 17.5° | 94.2  |
| 20°   | 82.5  |
| 22.5° | 72.2  |
| 25°   | 63.4  |
| 27.5° | 55.8  |
| 30°   | 48.7  |
| 32.5° | 42.8  |
| 35°   | 37.6  |
| 37.5° | 32.9  |
| 40°   | 29.1  |
| 42.5° | 25.5  |
| 45°   | 22.6  |
| 47.5° | 20.0  |
| 50°   | 17.6  |
| 52.5° | 15.6  |
| 55°   | 13.5  |
| 57.5° | 11.7  |
| 60°   | 10.3  |
| 62.5° | 9.1   |
| 65°   | 7.6   |
| 67.5° | 6.5   |
| 70°   | 5.3   |
| 72.5° | 4.4   |
| 75°   | 3.5   |
| 77.5° | 2.6   |
| 80°   | 1.8   |
| 82.5° | 0.9   |
| 85°   | 0.6   |
| 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: SP1-2504-409-16

Test Date: 05/14/2025

Luminaire Tested: LD3A10R129727D010 E3D1H

Data in this report applies to families of products including LD3A

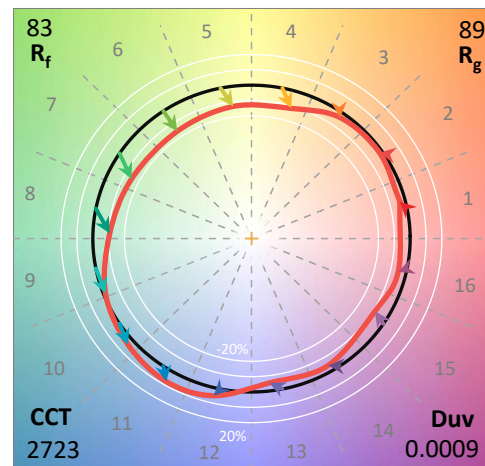
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2504-409-16  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 09/15/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: IRiS  
 Catalog Number: **LD3A10R129727D010 E3D1H**  
 Description: 3in Adjustable LED luminaire with, R12 optic, 2700K CCT AND, 97CRI LEDS, E3D1H TRIM

### Spectral Parameters

CCT (K): 2723  
 CIE  $u'$ : 0.2613  
 CIE  $v'$ : 0.5282  
 Duv: 0.0009  
 CIE x: 0.4595  
 CIE y: 0.4129  
 CIE z: 0.1277  
 Peak Wavelength (nm): 717  
 Dominant Wavelength (nm): 583  
 Purity: 61.85051  
 R<sub>f</sub>: 83  
 R<sub>g</sub>: 88.7

CRI (Ra): 96.9  
 R1: 98.6  
 R2: 97.5  
 R3: 94.4  
 R4: 97.7  
 R5: 97.8  
 R6: 97.1  
 R7: 97.7  
 R8: 94.3  
 R9: 84.8  
 R10: 92.7  
 R11: 96.3  
 R12: 86.1  
 R13: 98.3  
 R14: 95.8  
 R15: 96.2



### Test Conditions

Stabilization Time: 41M  
 Operation Time: 1H 41M  
 Sphere Temperature (°C): 25.3

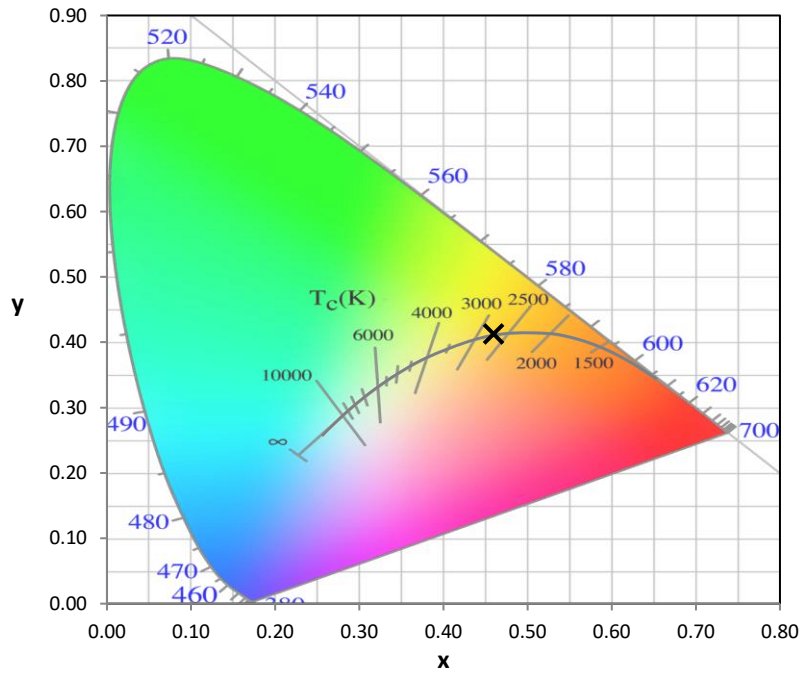


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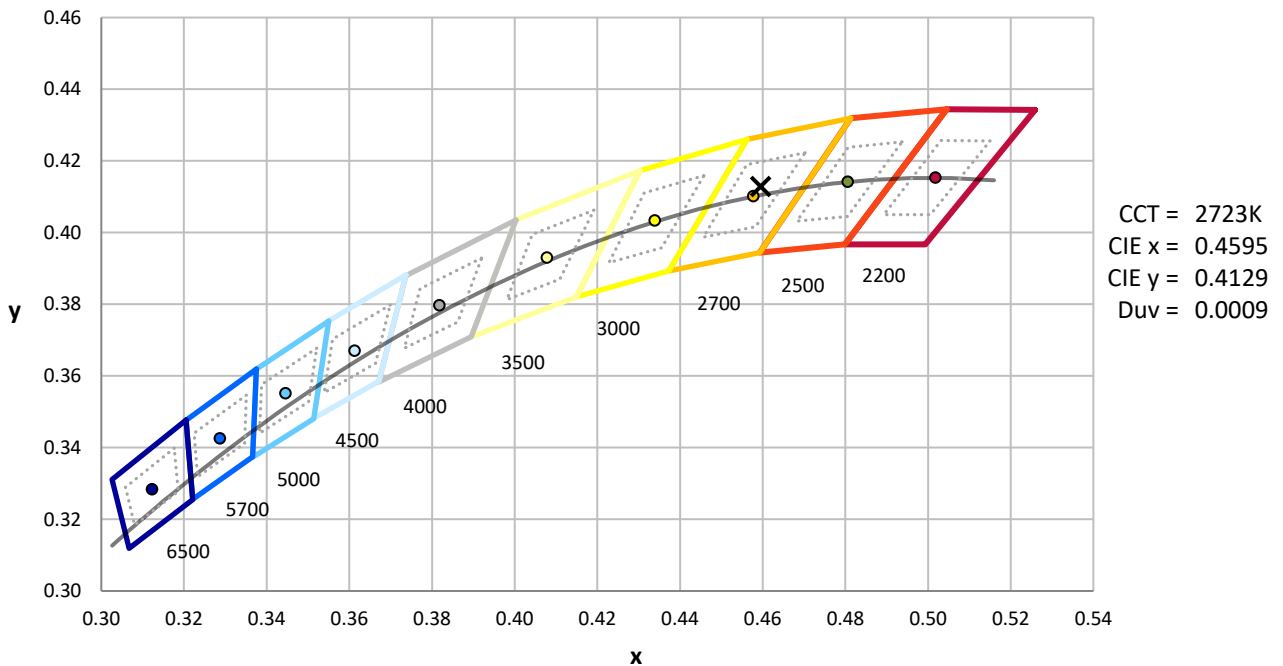
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



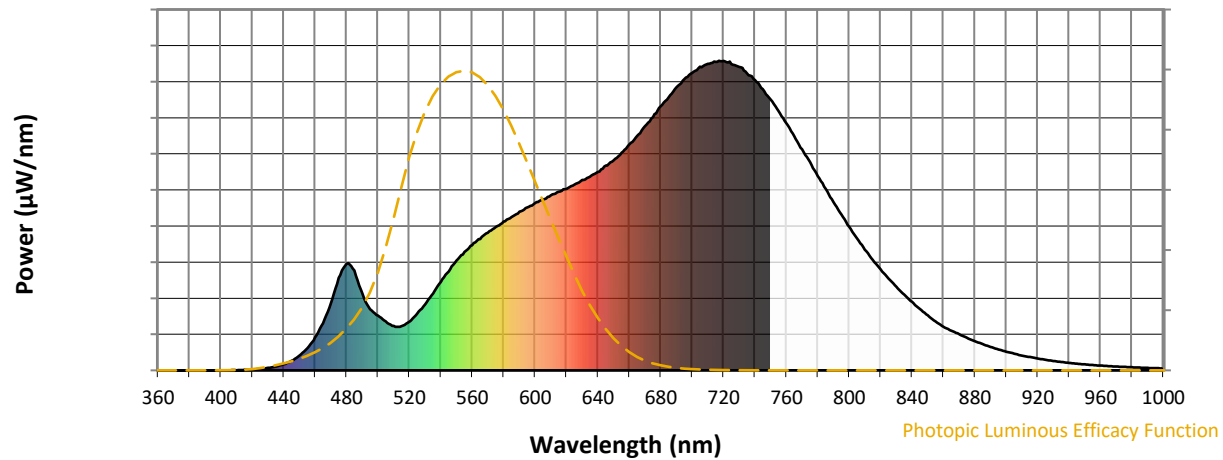
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

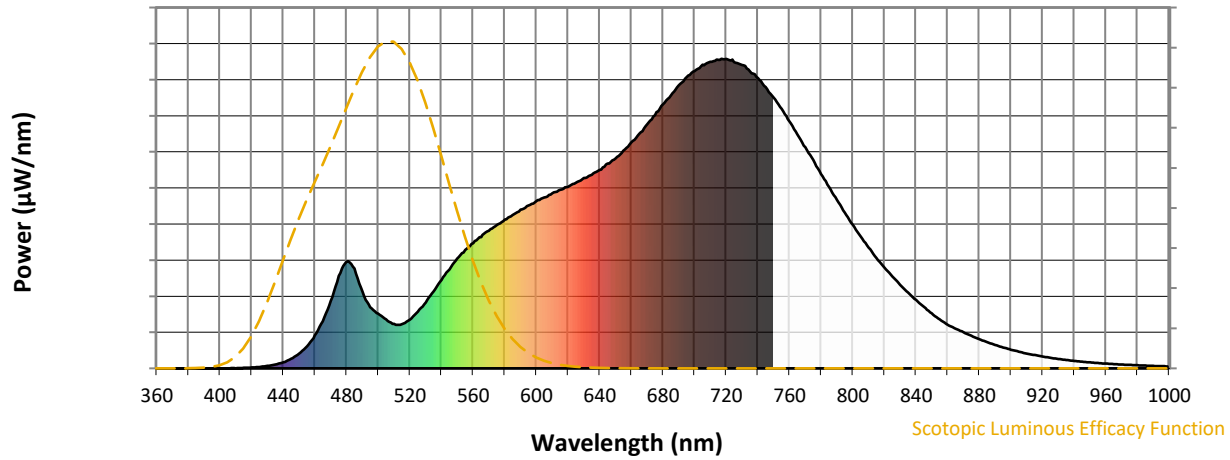


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 248                                  | NR                             | 620               | 586                                  | NR                             | 750               | 874                                  | NR                             | 880               | 95                                   | NR                             |
| 365               | 0                                    | NR                             | 495               | 198                                  | NR                             | 625               | 600                                  | NR                             | 755               | 838                                  | NR                             | 885               | 84                                   | NR                             |
| 370               | 0                                    | NR                             | 500               | 176                                  | NR                             | 630               | 614                                  | NR                             | 760               | 798                                  | NR                             | 890               | 76                                   | NR                             |
| 375               | 0                                    | NR                             | 505               | 158                                  | NR                             | 635               | 625                                  | NR                             | 765               | 756                                  | NR                             | 895               | 67                                   | NR                             |
| 380               | 0                                    | NR                             | 510               | 144                                  | NR                             | 640               | 641                                  | NR                             | 770               | 714                                  | NR                             | 900               | 60                                   | NR                             |
| 385               | 0                                    | NR                             | 515               | 142                                  | NR                             | 645               | 661                                  | NR                             | 775               | 673                                  | NR                             | 905               | 54                                   | NR                             |
| 390               | 0                                    | NR                             | 520               | 157                                  | NR                             | 650               | 678                                  | NR                             | 780               | 627                                  | NR                             | 910               | 48                                   | NR                             |
| 395               | 0                                    | NR                             | 525               | 183                                  | NR                             | 655               | 703                                  | NR                             | 785               | 586                                  | NR                             | 915               | 43                                   | NR                             |
| 400               | 0                                    | NR                             | 530               | 213                                  | NR                             | 660               | 729                                  | NR                             | 790               | 544                                  | NR                             | 920               | 38                                   | NR                             |
| 405               | 0                                    | NR                             | 535               | 248                                  | NR                             | 665               | 758                                  | NR                             | 795               | 504                                  | NR                             | 925               | 34                                   | NR                             |
| 410               | 1                                    | NR                             | 540               | 286                                  | NR                             | 670               | 789                                  | NR                             | 800               | 464                                  | NR                             | 930               | 30                                   | NR                             |
| 415               | 2                                    | NR                             | 545               | 320                                  | NR                             | 675               | 818                                  | NR                             | 805               | 426                                  | NR                             | 935               | 27                                   | NR                             |
| 420               | 3                                    | NR                             | 550               | 354                                  | NR                             | 680               | 853                                  | NR                             | 810               | 390                                  | NR                             | 940               | 24                                   | NR                             |
| 425               | 5                                    | NR                             | 555               | 382                                  | NR                             | 685               | 881                                  | NR                             | 815               | 357                                  | NR                             | 945               | 22                                   | NR                             |
| 430               | 8                                    | NR                             | 560               | 405                                  | NR                             | 690               | 914                                  | NR                             | 820               | 326                                  | NR                             | 950               | 19                                   | NR                             |
| 435               | 12                                   | NR                             | 565               | 424                                  | NR                             | 695               | 941                                  | NR                             | 825               | 297                                  | NR                             | 955               | 17                                   | NR                             |
| 440               | 20                                   | NR                             | 570               | 445                                  | NR                             | 700               | 960                                  | NR                             | 830               | 270                                  | NR                             | 960               | 16                                   | NR                             |
| 445               | 31                                   | NR                             | 575               | 463                                  | NR                             | 705               | 980                                  | NR                             | 835               | 245                                  | NR                             | 965               | 14                                   | NR                             |
| 450               | 47                                   | NR                             | 580               | 481                                  | NR                             | 710               | 990                                  | NR                             | 840               | 221                                  | NR                             | 970               | 12                                   | NR                             |
| 455               | 72                                   | NR                             | 585               | 495                                  | NR                             | 715               | 996                                  | NR                             | 845               | 199                                  | NR                             | 975               | 11                                   | NR                             |
| 460               | 107                                  | NR                             | 590               | 512                                  | NR                             | 720               | 1000                                 | NR                             | 850               | 178                                  | NR                             | 980               | 10                                   | NR                             |
| 465               | 152                                  | NR                             | 595               | 526                                  | NR                             | 725               | 989                                  | NR                             | 855               | 158                                  | NR                             | 985               | 9                                    | NR                             |
| 470               | 218                                  | NR                             | 600               | 540                                  | NR                             | 730               | 980                                  | NR                             | 860               | 141                                  | NR                             | 990               | 8                                    | NR                             |
| 475               | 298                                  | NR                             | 605               | 552                                  | NR                             | 735               | 959                                  | NR                             | 865               | 128                                  | NR                             | 995               | 7                                    | NR                             |
| 480               | 344                                  | NR                             | 610               | 565                                  | NR                             | 740               | 937                                  | NR                             | 870               | 117                                  | NR                             | 1000              | 0                                    | NR                             |
| 485               | 323                                  | NR                             | 615               | 577                                  | NR                             | 745               | 909                                  | NR                             | 875               | 105                                  | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



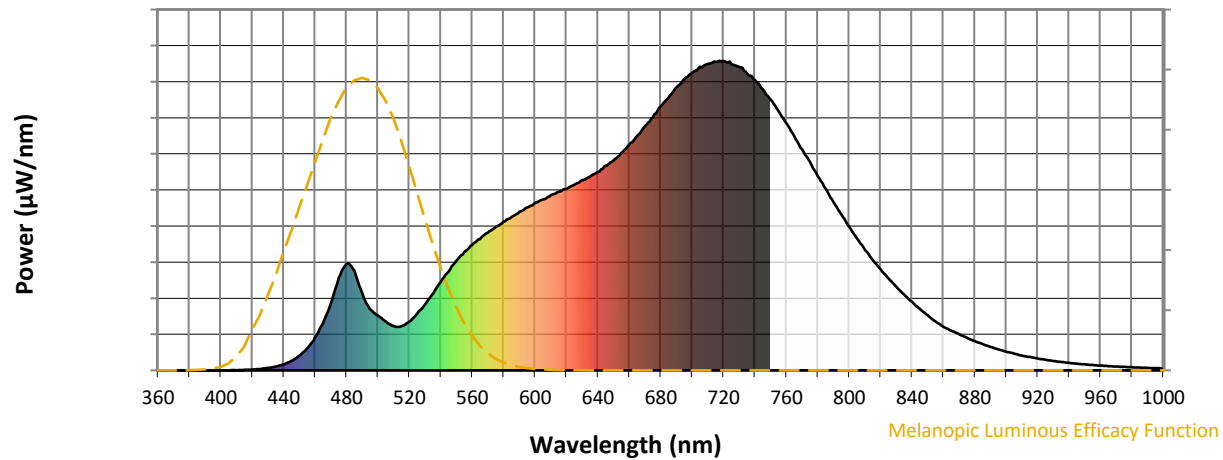
Scotopic Lumens: NR

S/P: 1.26

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 248                      | NR            | 620    | 586                      | NR            | 750    | 874                      | NR            | 880    | 95                       | NR            |
| 365    | 0                        | NR            | 495    | 198                      | NR            | 625    | 600                      | NR            | 755    | 838                      | NR            | 885    | 84                       | NR            |
| 370    | 0                        | NR            | 500    | 176                      | NR            | 630    | 614                      | NR            | 760    | 798                      | NR            | 890    | 76                       | NR            |
| 375    | 0                        | NR            | 505    | 158                      | NR            | 635    | 625                      | NR            | 765    | 756                      | NR            | 895    | 67                       | NR            |
| 380    | 0                        | NR            | 510    | 144                      | NR            | 640    | 641                      | NR            | 770    | 714                      | NR            | 900    | 60                       | NR            |
| 385    | 0                        | NR            | 515    | 142                      | NR            | 645    | 661                      | NR            | 775    | 673                      | NR            | 905    | 54                       | NR            |
| 390    | 0                        | NR            | 520    | 157                      | NR            | 650    | 678                      | NR            | 780    | 627                      | NR            | 910    | 48                       | NR            |
| 395    | 0                        | NR            | 525    | 183                      | NR            | 655    | 703                      | NR            | 785    | 586                      | NR            | 915    | 43                       | NR            |
| 400    | 0                        | NR            | 530    | 213                      | NR            | 660    | 729                      | NR            | 790    | 544                      | NR            | 920    | 38                       | NR            |
| 405    | 0                        | NR            | 535    | 248                      | NR            | 665    | 758                      | NR            | 795    | 504                      | NR            | 925    | 34                       | NR            |
| 410    | 1                        | NR            | 540    | 286                      | NR            | 670    | 789                      | NR            | 800    | 464                      | NR            | 930    | 30                       | NR            |
| 415    | 2                        | NR            | 545    | 320                      | NR            | 675    | 818                      | NR            | 805    | 426                      | NR            | 935    | 27                       | NR            |
| 420    | 3                        | NR            | 550    | 354                      | NR            | 680    | 853                      | NR            | 810    | 390                      | NR            | 940    | 24                       | NR            |
| 425    | 5                        | NR            | 555    | 382                      | NR            | 685    | 881                      | NR            | 815    | 357                      | NR            | 945    | 22                       | NR            |
| 430    | 8                        | NR            | 560    | 405                      | NR            | 690    | 914                      | NR            | 820    | 326                      | NR            | 950    | 19                       | NR            |
| 435    | 12                       | NR            | 565    | 424                      | NR            | 695    | 941                      | NR            | 825    | 297                      | NR            | 955    | 17                       | NR            |
| 440    | 20                       | NR            | 570    | 445                      | NR            | 700    | 960                      | NR            | 830    | 270                      | NR            | 960    | 16                       | NR            |
| 445    | 31                       | NR            | 575    | 463                      | NR            | 705    | 980                      | NR            | 835    | 245                      | NR            | 965    | 14                       | NR            |
| 450    | 47                       | NR            | 580    | 481                      | NR            | 710    | 990                      | NR            | 840    | 221                      | NR            | 970    | 12                       | NR            |
| 455    | 72                       | NR            | 585    | 495                      | NR            | 715    | 996                      | NR            | 845    | 199                      | NR            | 975    | 11                       | NR            |
| 460    | 107                      | NR            | 590    | 512                      | NR            | 720    | 1000                     | NR            | 850    | 178                      | NR            | 980    | 10                       | NR            |
| 465    | 152                      | NR            | 595    | 526                      | NR            | 725    | 989                      | NR            | 855    | 158                      | NR            | 985    | 9                        | NR            |
| 470    | 218                      | NR            | 600    | 540                      | NR            | 730    | 980                      | NR            | 860    | 141                      | NR            | 990    | 8                        | NR            |
| 475    | 298                      | NR            | 605    | 552                      | NR            | 735    | 959                      | NR            | 865    | 128                      | NR            | 995    | 7                        | NR            |
| 480    | 344                      | NR            | 610    | 565                      | NR            | 740    | 937                      | NR            | 870    | 117                      | NR            | 1000   | 0                        | NR            |
| 485    | 323                      | NR            | 615    | 577                      | NR            | 745    | 909                      | NR            | 875    | 105                      | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.51**

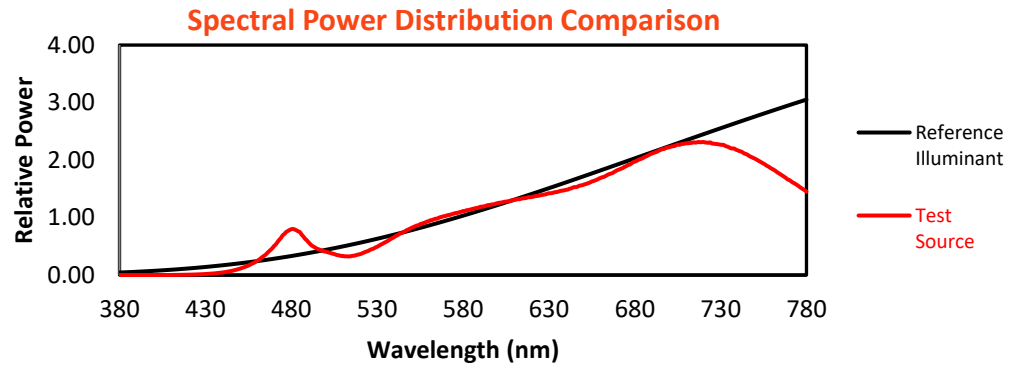
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 248                                  | NR                             | 620               | 586                                  | NR                             | 750               | 874                                  | NR                             | 880               | 95                                   | NR                             |
| 365               | 0                                    | NR                             | 495               | 198                                  | NR                             | 625               | 600                                  | NR                             | 755               | 838                                  | NR                             | 885               | 84                                   | NR                             |
| 370               | 0                                    | NR                             | 500               | 176                                  | NR                             | 630               | 614                                  | NR                             | 760               | 798                                  | NR                             | 890               | 76                                   | NR                             |
| 375               | 0                                    | NR                             | 505               | 158                                  | NR                             | 635               | 625                                  | NR                             | 765               | 756                                  | NR                             | 895               | 67                                   | NR                             |
| 380               | 0                                    | NR                             | 510               | 144                                  | NR                             | 640               | 641                                  | NR                             | 770               | 714                                  | NR                             | 900               | 60                                   | NR                             |
| 385               | 0                                    | NR                             | 515               | 142                                  | NR                             | 645               | 661                                  | NR                             | 775               | 673                                  | NR                             | 905               | 54                                   | NR                             |
| 390               | 0                                    | NR                             | 520               | 157                                  | NR                             | 650               | 678                                  | NR                             | 780               | 627                                  | NR                             | 910               | 48                                   | NR                             |
| 395               | 0                                    | NR                             | 525               | 183                                  | NR                             | 655               | 703                                  | NR                             | 785               | 586                                  | NR                             | 915               | 43                                   | NR                             |
| 400               | 0                                    | NR                             | 530               | 213                                  | NR                             | 660               | 729                                  | NR                             | 790               | 544                                  | NR                             | 920               | 38                                   | NR                             |
| 405               | 0                                    | NR                             | 535               | 248                                  | NR                             | 665               | 758                                  | NR                             | 795               | 504                                  | NR                             | 925               | 34                                   | NR                             |
| 410               | 1                                    | NR                             | 540               | 286                                  | NR                             | 670               | 789                                  | NR                             | 800               | 464                                  | NR                             | 930               | 30                                   | NR                             |
| 415               | 2                                    | NR                             | 545               | 320                                  | NR                             | 675               | 818                                  | NR                             | 805               | 426                                  | NR                             | 935               | 27                                   | NR                             |
| 420               | 3                                    | NR                             | 550               | 354                                  | NR                             | 680               | 853                                  | NR                             | 810               | 390                                  | NR                             | 940               | 24                                   | NR                             |
| 425               | 5                                    | NR                             | 555               | 382                                  | NR                             | 685               | 881                                  | NR                             | 815               | 357                                  | NR                             | 945               | 22                                   | NR                             |
| 430               | 8                                    | NR                             | 560               | 405                                  | NR                             | 690               | 914                                  | NR                             | 820               | 326                                  | NR                             | 950               | 19                                   | NR                             |
| 435               | 12                                   | NR                             | 565               | 424                                  | NR                             | 695               | 941                                  | NR                             | 825               | 297                                  | NR                             | 955               | 17                                   | NR                             |
| 440               | 20                                   | NR                             | 570               | 445                                  | NR                             | 700               | 960                                  | NR                             | 830               | 270                                  | NR                             | 960               | 16                                   | NR                             |
| 445               | 31                                   | NR                             | 575               | 463                                  | NR                             | 705               | 980                                  | NR                             | 835               | 245                                  | NR                             | 965               | 14                                   | NR                             |
| 450               | 47                                   | NR                             | 580               | 481                                  | NR                             | 710               | 990                                  | NR                             | 840               | 221                                  | NR                             | 970               | 12                                   | NR                             |
| 455               | 72                                   | NR                             | 585               | 495                                  | NR                             | 715               | 996                                  | NR                             | 845               | 199                                  | NR                             | 975               | 11                                   | NR                             |
| 460               | 107                                  | NR                             | 590               | 512                                  | NR                             | 720               | 1000                                 | NR                             | 850               | 178                                  | NR                             | 980               | 10                                   | NR                             |
| 465               | 152                                  | NR                             | 595               | 526                                  | NR                             | 725               | 989                                  | NR                             | 855               | 158                                  | NR                             | 985               | 9                                    | NR                             |
| 470               | 218                                  | NR                             | 600               | 540                                  | NR                             | 730               | 980                                  | NR                             | 860               | 141                                  | NR                             | 990               | 8                                    | NR                             |
| 475               | 298                                  | NR                             | 605               | 552                                  | NR                             | 735               | 959                                  | NR                             | 865               | 128                                  | NR                             | 995               | 7                                    | NR                             |
| 480               | 344                                  | NR                             | 610               | 565                                  | NR                             | 740               | 937                                  | NR                             | 870               | 117                                  | NR                             | 1000              | 0                                    | NR                             |
| 485               | 323                                  | NR                             | 615               | 577                                  | NR                             | 745               | 909                                  | NR                             | 875               | 105                                  | NR                             |                   |                                      |                                |

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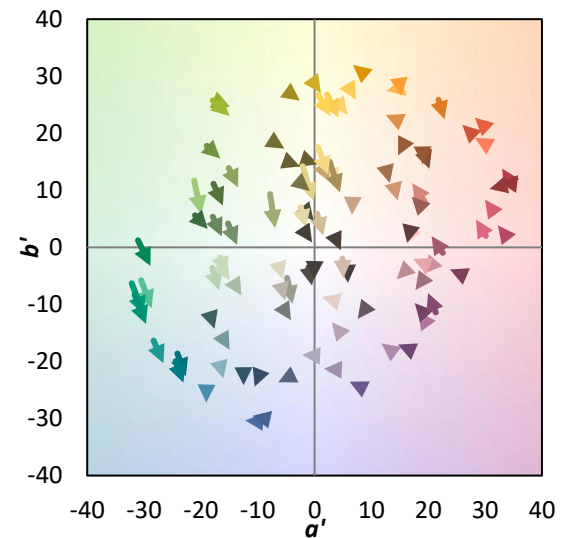
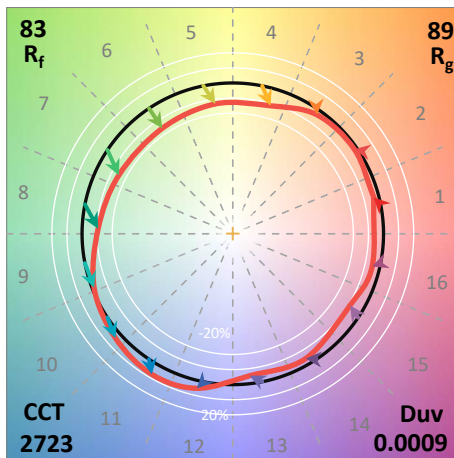
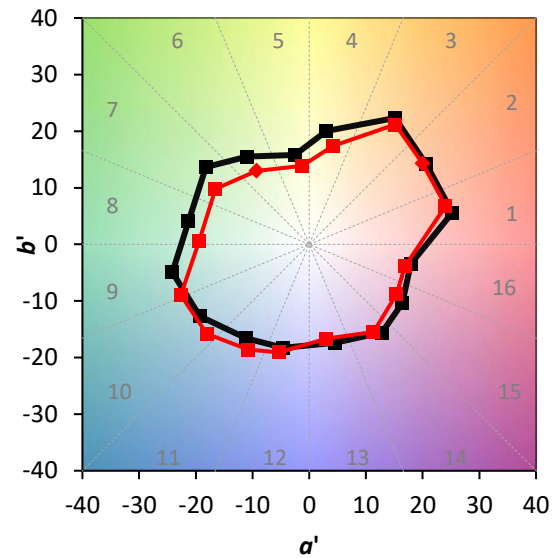
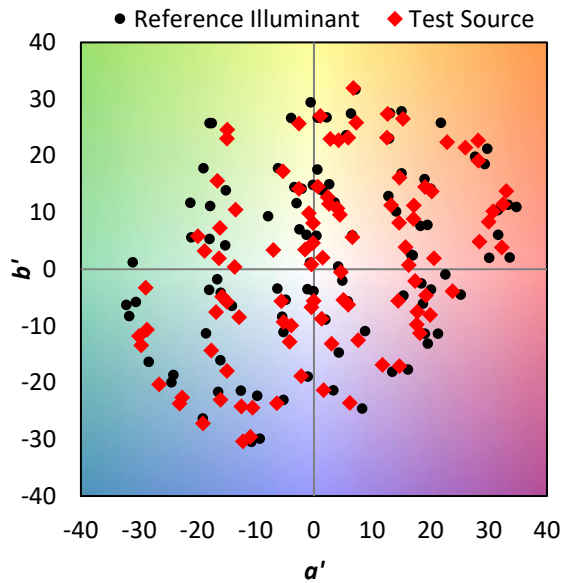
TM-30-18

### Summary

$R_f = 83$   
 $R_g = 88.7$   
 $CIE R_a = 96.9$   
 $R_9 = 84.8$

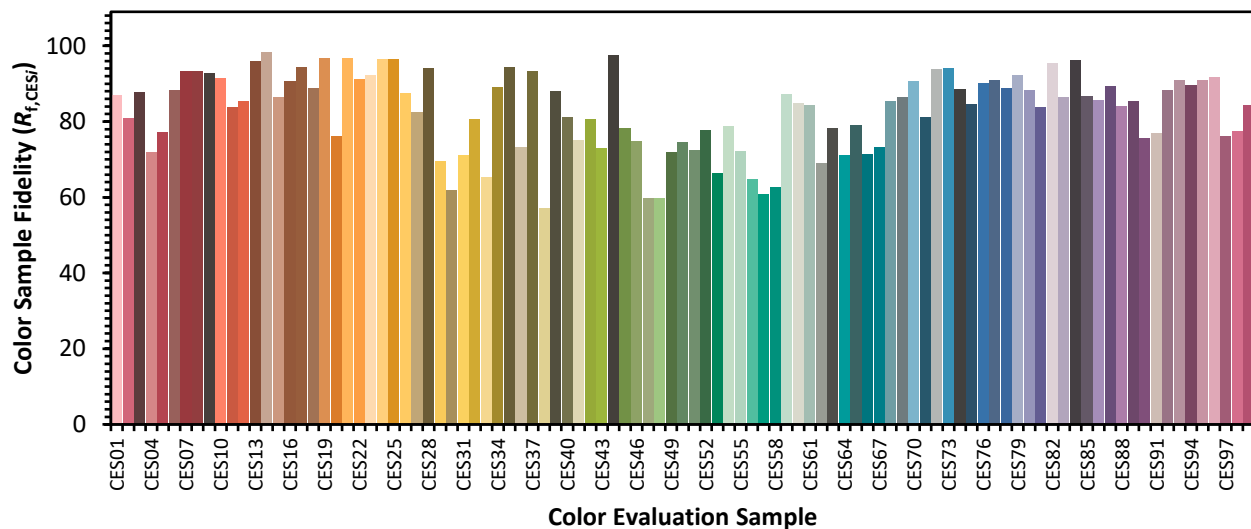


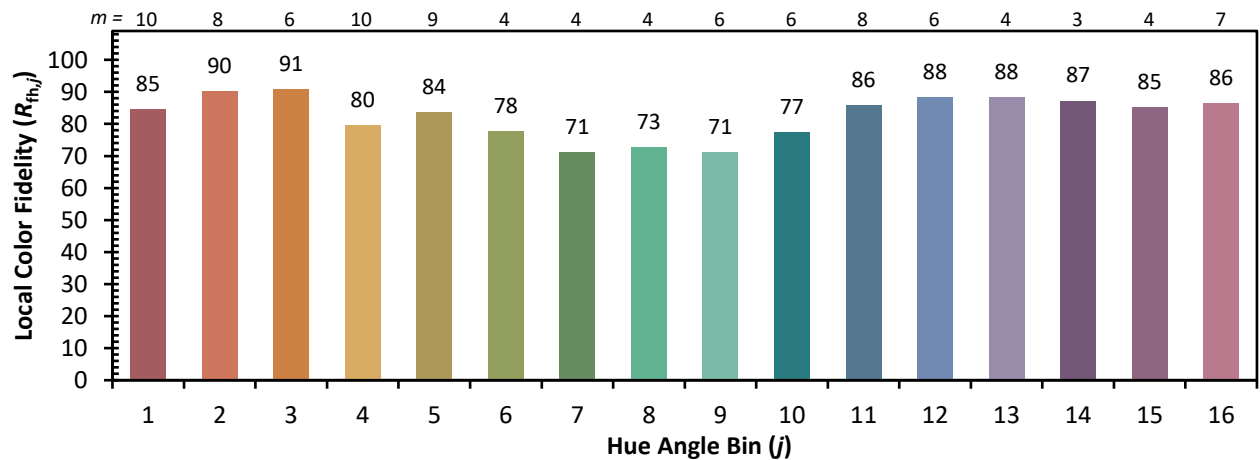
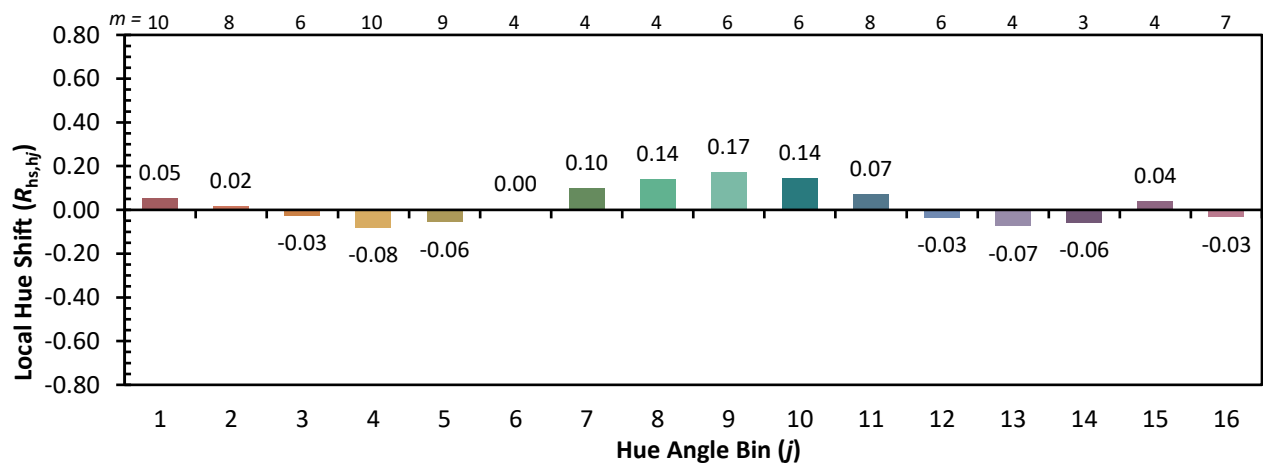
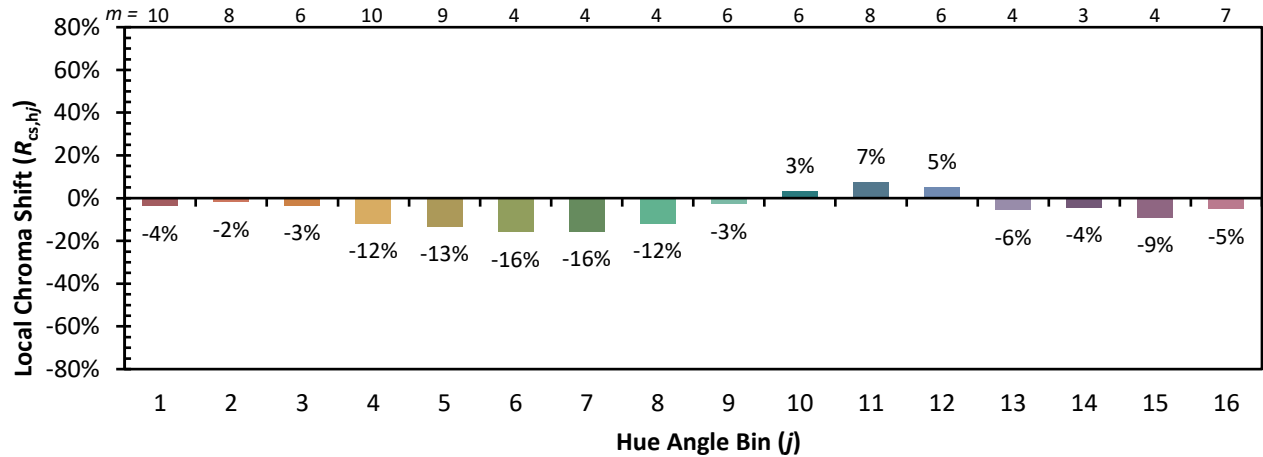
### Color Vector Graphics



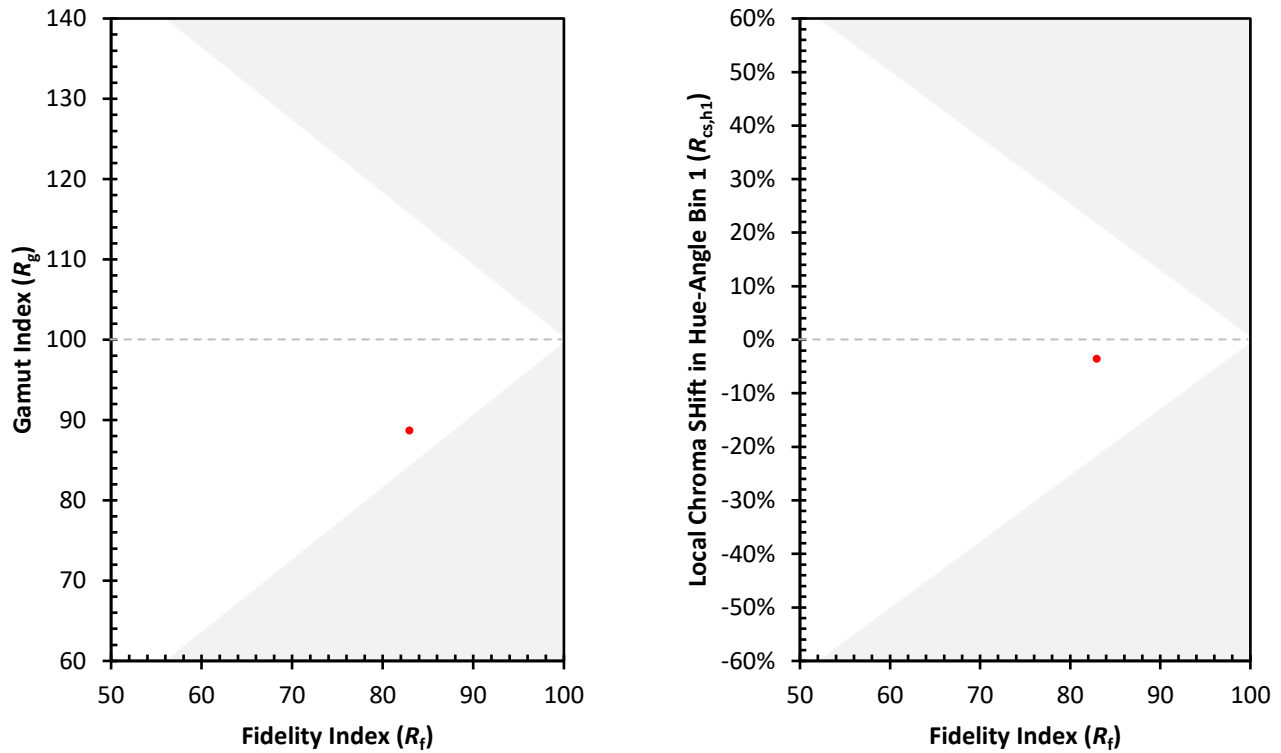
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 88 | CES51 = 73 | CES76 = 90 |
| CES02 = 64 | CES27 = 82 | CES52 = 78 | CES77 = 91 |
| CES03 = 32 | CES28 = 94 | CES53 = 66 | CES78 = 89 |
| CES04 = 71 | CES29 = 70 | CES54 = 79 | CES79 = 92 |
| CES05 = 53 | CES30 = 62 | CES55 = 72 | CES80 = 88 |
| CES06 = 52 | CES31 = 71 | CES56 = 65 | CES81 = 84 |
| CES07 = 45 | CES32 = 81 | CES57 = 61 | CES82 = 95 |
| CES08 = 44 | CES33 = 65 | CES58 = 63 | CES83 = 86 |
| CES09 = 29 | CES34 = 89 | CES59 = 87 | CES84 = 96 |
| CES10 = 77 | CES35 = 94 | CES60 = 85 | CES85 = 87 |
| CES11 = 60 | CES36 = 73 | CES61 = 84 | CES86 = 86 |
| CES12 = 66 | CES37 = 93 | CES62 = 69 | CES87 = 89 |
| CES13 = 44 | CES38 = 57 | CES63 = 78 | CES88 = 84 |
| CES14 = 74 | CES39 = 88 | CES64 = 71 | CES89 = 85 |
| CES15 = 72 | CES40 = 81 | CES65 = 79 | CES90 = 76 |
| CES16 = 49 | CES41 = 75 | CES66 = 71 | CES91 = 77 |
| CES17 = 51 | CES42 = 81 | CES67 = 73 | CES92 = 88 |
| CES18 = 57 | CES43 = 73 | CES68 = 85 | CES93 = 91 |
| CES19 = 73 | CES44 = 98 | CES69 = 87 | CES94 = 90 |
| CES20 = 68 | CES45 = 78 | CES70 = 91 | CES95 = 91 |
| CES21 = 87 | CES46 = 75 | CES71 = 81 | CES96 = 92 |
| CES22 = 80 | CES47 = 60 | CES72 = 94 | CES97 = 76 |
| CES23 = 92 | CES48 = 60 | CES73 = 94 | CES98 = 78 |
| CES24 = 91 | CES49 = 72 | CES74 = 89 | CES99 = 84 |
| CES25 = 72 | CES50 = 75 | CES75 = 85 |            |



**Color Rendition by Hue-Angle Bin**




**Measure Comparisons**


(END OF REPORT)