

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: P1261828

Luminaire Tested: P3A05R209727DE010 E3CD1MW

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1261828  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2601-647-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/30/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A05R209727DE010 E3CD1MW  
Description: 3in Adjustable LED luminaire with, R20 optic, 2700K CCT AND, 97CRI , E3CD1MW TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

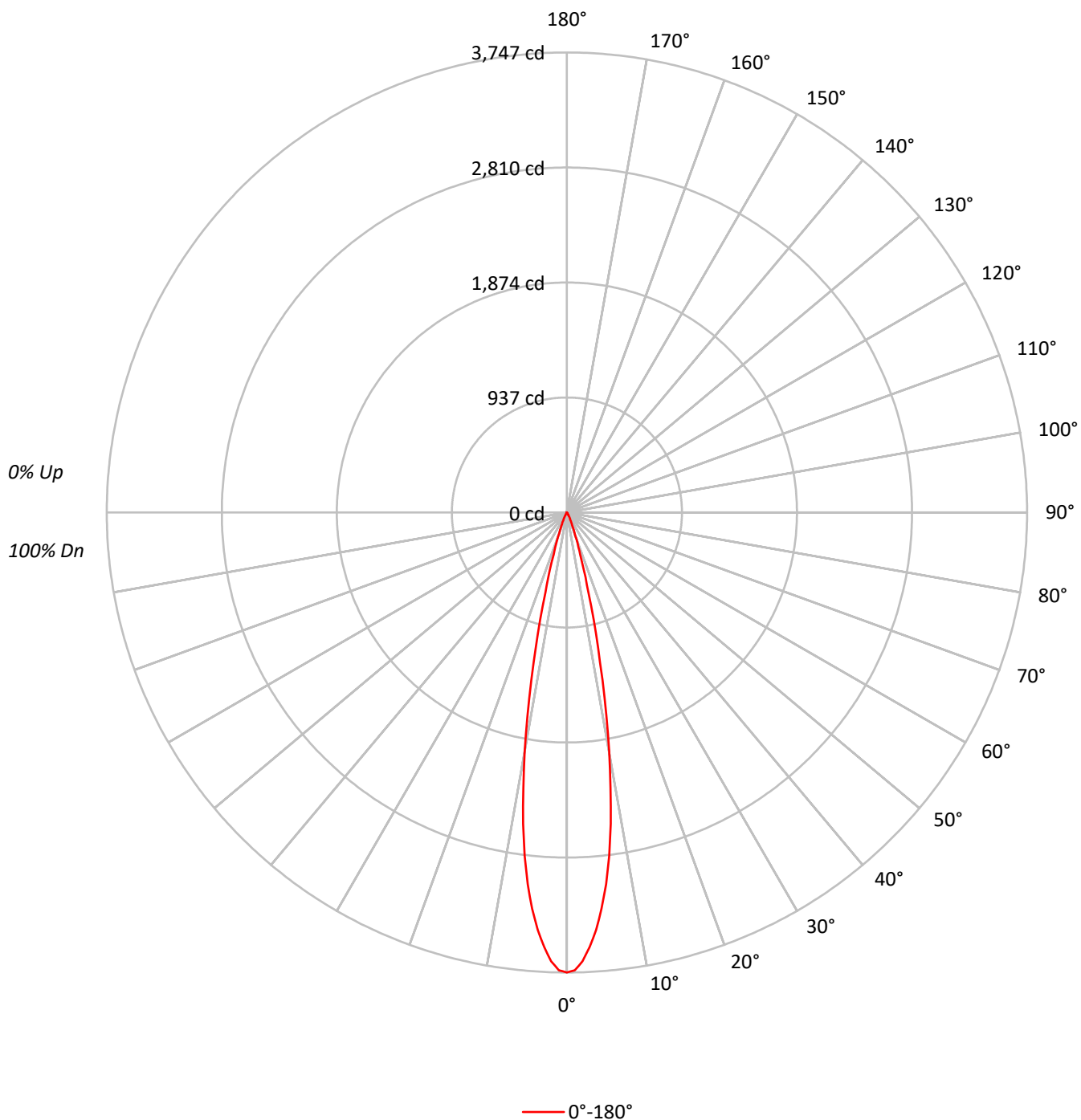
Lumens per Lamp: N/A  
Luminaire Lumens: 528.9 lumens  
Efficiency: N/A  
Efficacy: 73.5 lumens/watt  
Spacing Criteria (0/90/45): 0.35 / 0.35 / 0.34  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 7.2  
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: P1261828

CATALOG NUMBER: P3A05R209727DE010 E3CD1MW

### Luminous Intensity Polar Plot



TEST NUMBER: P1261828

CATALOG NUMBER: P3A05R209727DE010 E3CD1MW

**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   | 116 | 114 | 112 | 110 | 113 | 112 | 110 | 109 | 108 | 106 | 105 |  | 104 | 103 | 102 |  | 101 |
| 2   | 112 | 109 | 107 | 104 | 110 | 108 | 105 | 103 | 104 | 103 | 101 |  | 102 | 100 | 99  |  | 99  |
| 3   | 109 | 105 | 102 | 100 | 108 | 104 | 101 | 99  | 102 | 99  | 97  |  | 99  | 98  | 96  |  | 97  |
| 4   | 107 | 102 | 99  | 96  | 105 | 101 | 98  | 96  | 99  | 97  | 95  |  | 97  | 95  | 93  |  | 96  |
| 5   | 104 | 99  | 96  | 93  | 103 | 98  | 95  | 93  | 97  | 94  | 92  |  | 95  | 93  | 91  |  | 94  |
| 6   | 102 | 97  | 93  | 91  | 101 | 96  | 93  | 90  | 95  | 92  | 90  |  | 94  | 91  | 89  |  | 93  |
| 7   | 100 | 94  | 91  | 88  | 99  | 94  | 91  | 88  | 93  | 90  | 88  |  | 92  | 89  | 87  |  | 91  |
| 8   | 98  | 92  | 89  | 86  | 97  | 92  | 89  | 86  | 91  | 88  | 86  |  | 90  | 88  | 86  |  | 89  |
| 9   | 96  | 90  | 87  | 85  | 95  | 90  | 87  | 85  | 89  | 86  | 84  |  | 89  | 86  | 84  |  | 88  |
| 10  | 94  | 89  | 85  | 83  | 93  | 88  | 85  | 83  | 88  | 85  | 83  |  | 87  | 84  | 83  |  | 87  |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 821601 |
| 5°  | 713117 |
| 10° | 440629 |
| 15° | 153054 |
| 20° | 46997  |
| 25° | 16622  |
| 30° | 6153   |
| 35° | 2463   |
| 40° | 1317   |
| 45° | 527    |
| 50° | 273    |
| 55° | 306    |
| 60° | 351    |
| 65° | 208    |
| 70° | 256    |
| 75° | 339    |
| 80° | 0      |
| 85° | 0      |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 527 cd/sqm

TEST NUMBER: P1261828

CATALOG NUMBER: P3A05R209727DE010 E3CD1MW

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 268.9  | 50.8      |
| 10°-20°   | 213.3  | 40.3      |
| 20°-30°   | 36.9   | 7.0       |
| 30°-40°   | 6.7    | 1.3       |
| 40°-50°   | 1.5    | 0.3       |
| 50°-60°   | 0.7    | 0.1       |
| 60°-70°   | 0.4    | 0.1       |
| 70°-80°   | 0.4    | 0.1       |
| 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°    | 519.2  | 98.2      |
| 0°-40°    | 525.9  | 99.4      |
| 0°-60°    | 528.1  | 99.8      |
| 0°-90°    | 528.9  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 528.9  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 3747 |      |
| 5°  | 3240 | 269  |
| 15° | 674  | 213  |
| 25° | 69   | 37   |
| 35° | 9    | 7    |
| 45° | 2    | 2    |
| 55° | 1    | 1    |
| 65° | 0    | 0    |
| 75° | 0    | 0    |
| 85° | 0    | 0    |
| 90° | 0    |      |

TEST NUMBER: P1261828

CATALOG NUMBER: P3A05R209727DE010 E3CD1MW

**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 3746.8 |
| 1°    | 3728.8 |
| 2°    | 3657.6 |
| 3°    | 3543.3 |
| 4°    | 3409.3 |
| 5°    | 3239.7 |
| 6°    | 3045.4 |
| 7°    | 2819.3 |
| 8°    | 2561.8 |
| 9°    | 2272.4 |
| 10°   | 1978.9 |
| 12.5° | 1248.2 |
| 15°   | 674.2  |
| 17.5° | 360.1  |
| 20°   | 201.4  |
| 22.5° | 115.2  |
| 25°   | 68.7   |
| 27.5° | 41.9   |
| 30°   | 24.3   |
| 32.5° | 14.2   |
| 35°   | 9.2    |
| 37.5° | 6.3    |
| 40°   | 4.6    |
| 42.5° | 2.9    |
| 45°   | 1.7    |
| 47.5° | 0.8    |
| 50°   | 0.8    |
| 52.5° | 0.8    |
| 55°   | 0.8    |
| 57.5° | 0.8    |
| 60°   | 0.8    |
| 62.5° | 0.4    |
| 65°   | 0.4    |
| 67.5° | 0.4    |
| 70°   | 0.4    |
| 72.5° | 0.4    |
| 75°   | 0.4    |
| 77.5° | 0.4    |
| 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: SP1-2504-409-16

Test Date: 05/14/2025

Luminaire Tested: LD3A10R129727D010 E3D1H

Data in this report applies to families of products including LD3A

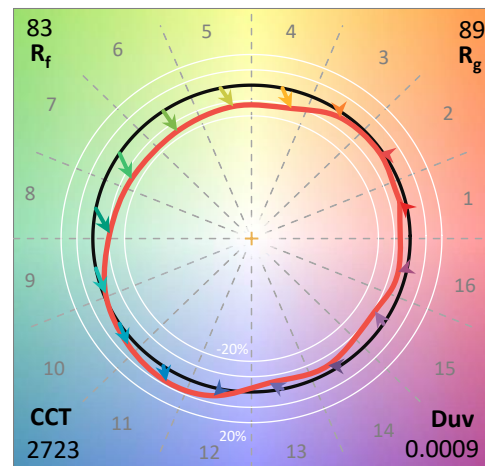
### Test Information

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

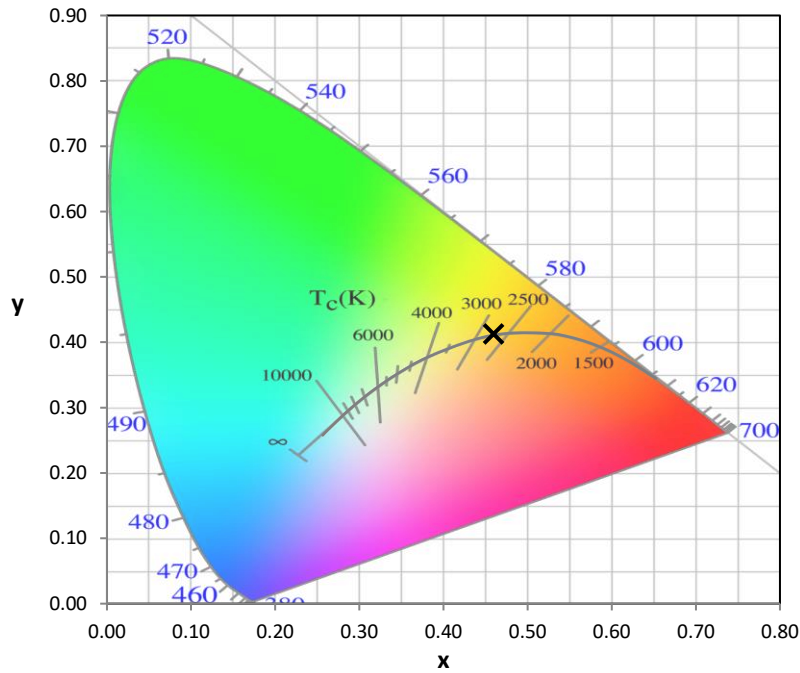


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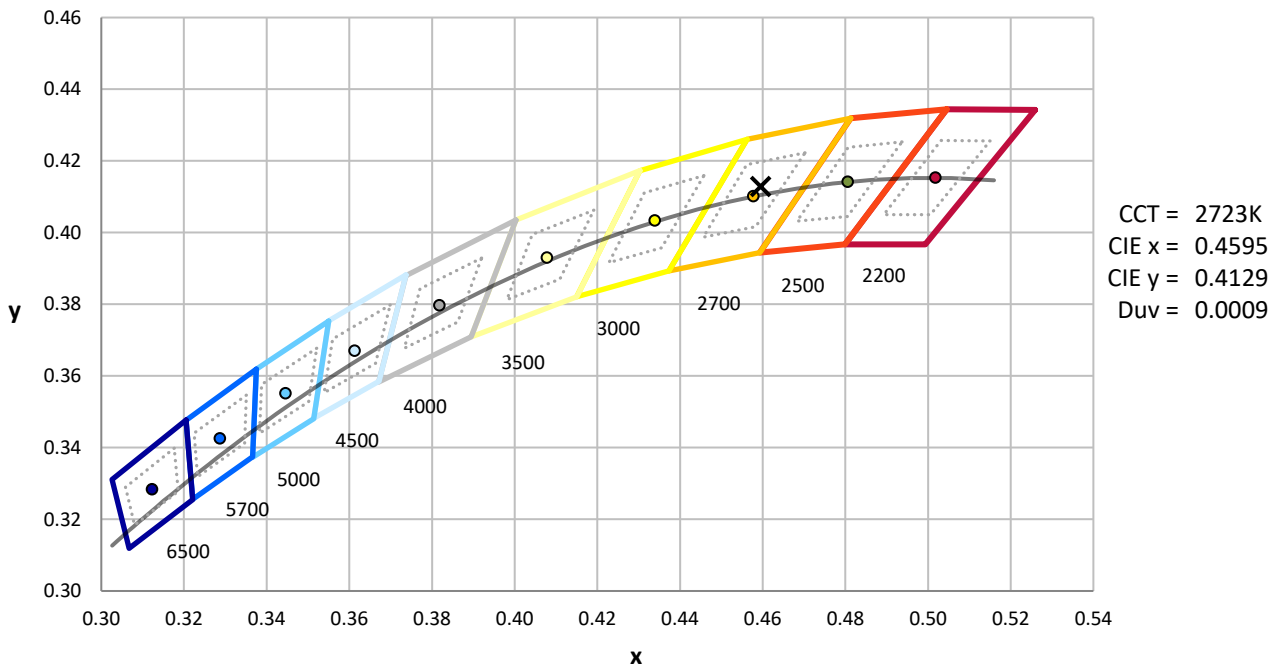
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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**



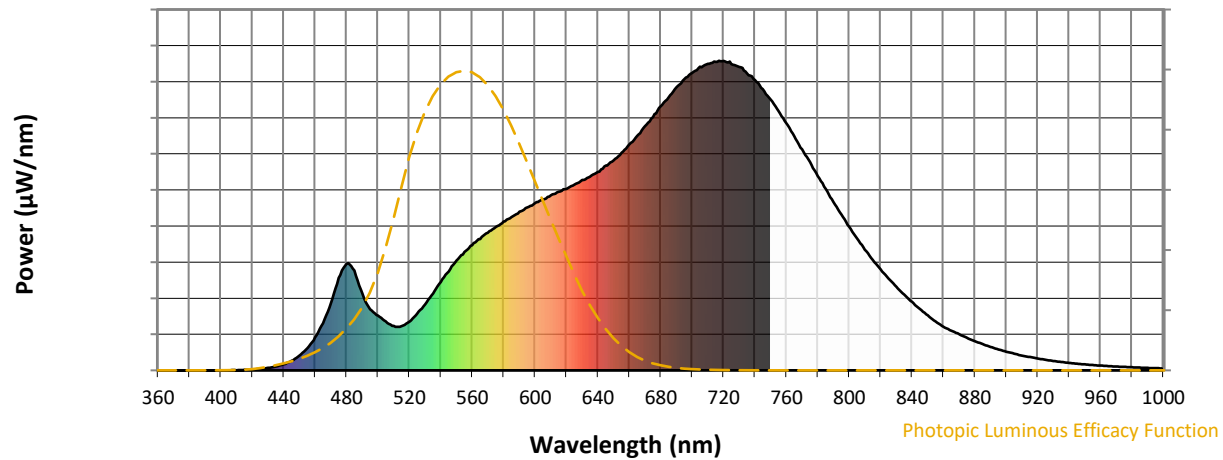
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

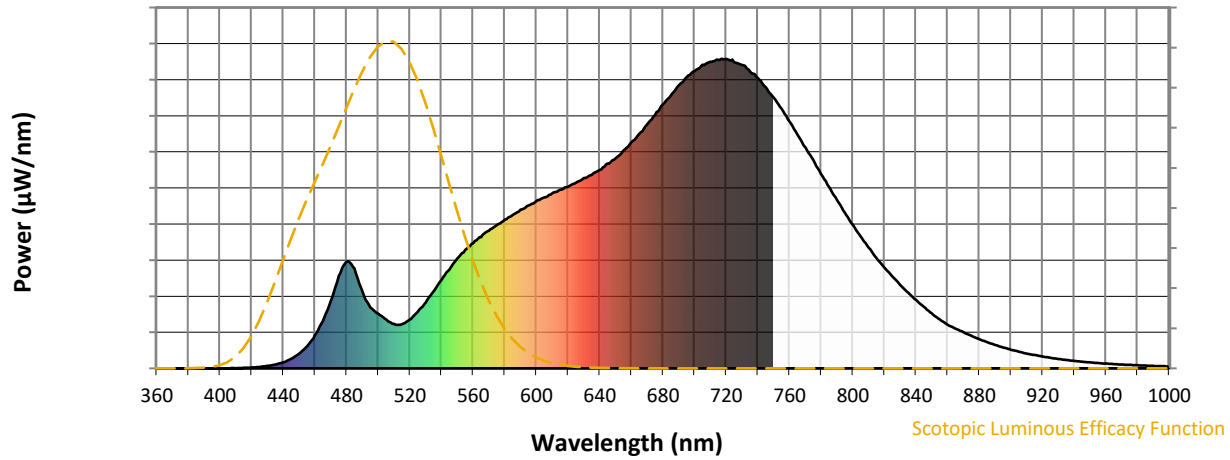


### Photopic Lumens: NR

| $\lambda$<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



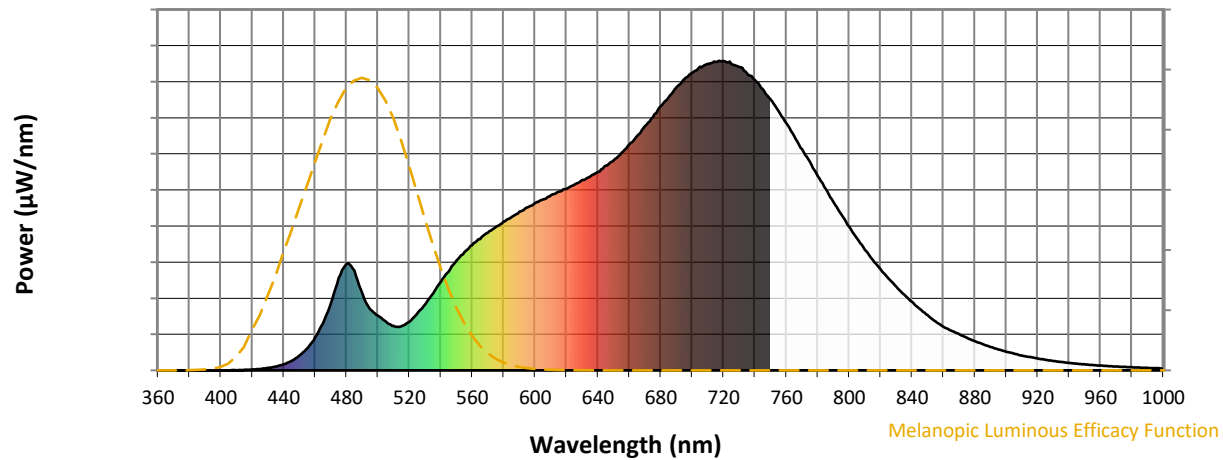
Scotopic Lumens: NR

S/P: 1.26

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 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**

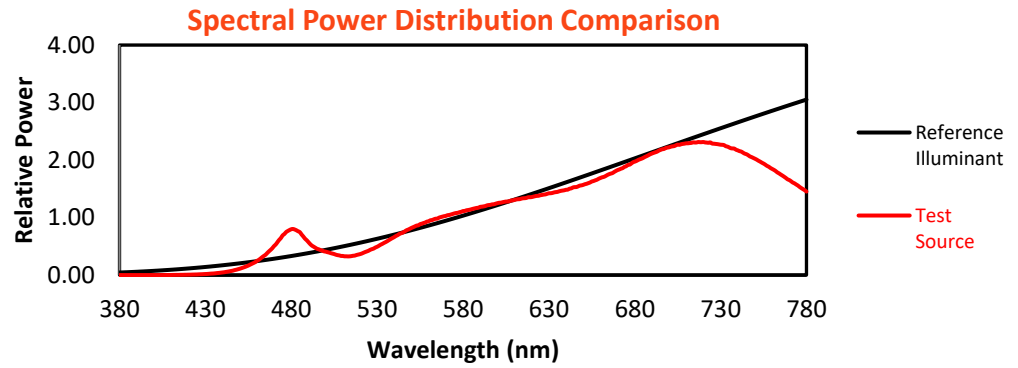
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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                             |                   |                                      |                                |

REPORT NUMBER: SP1-2504-409-16

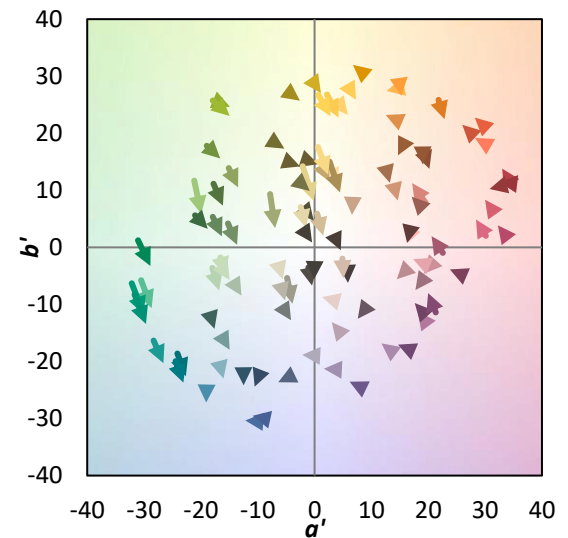
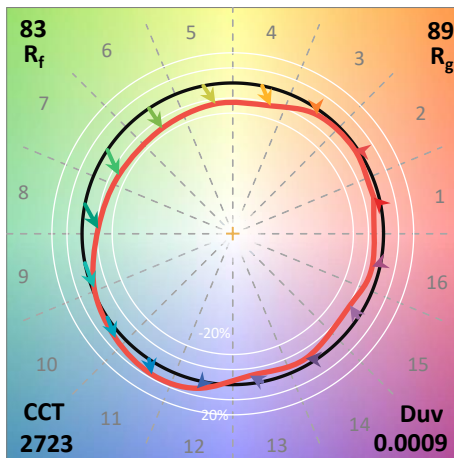
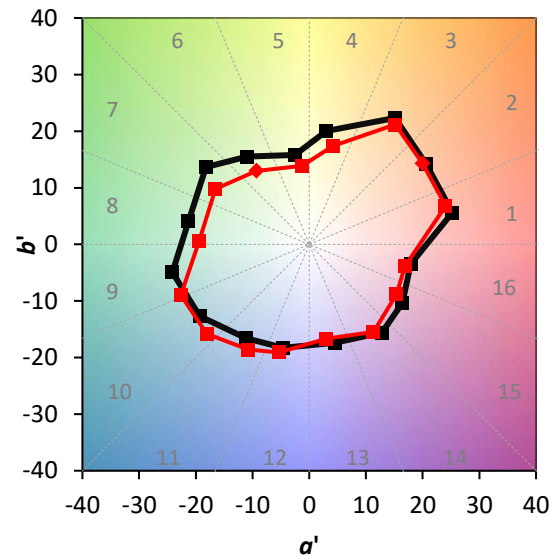
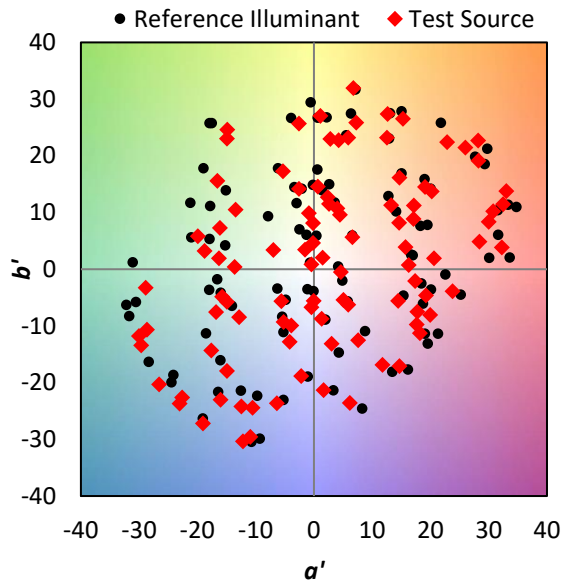
TM-30-18

### Summary

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

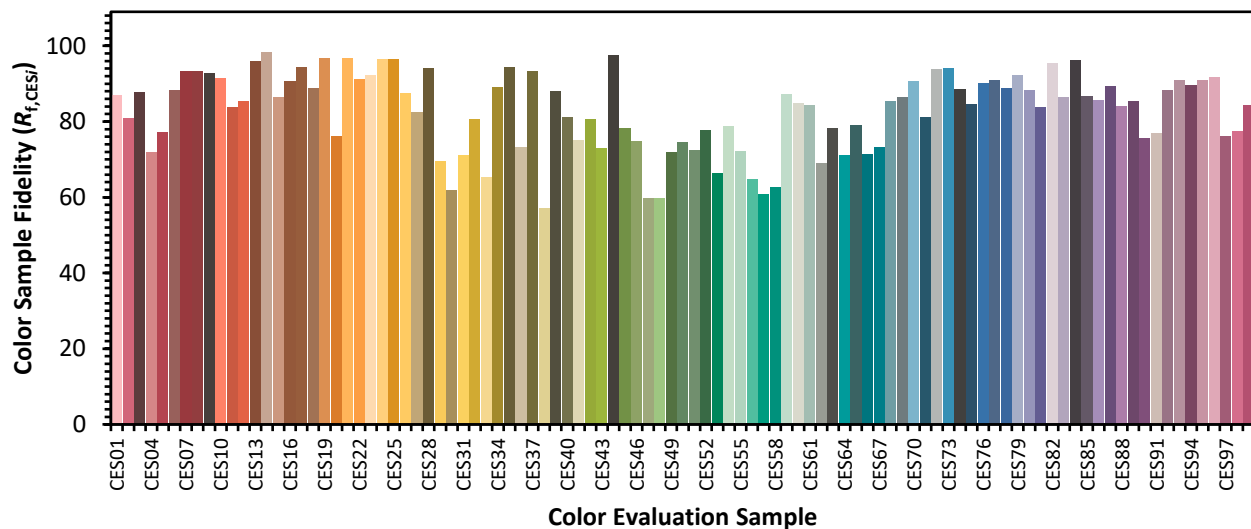


### Color Vector Graphics

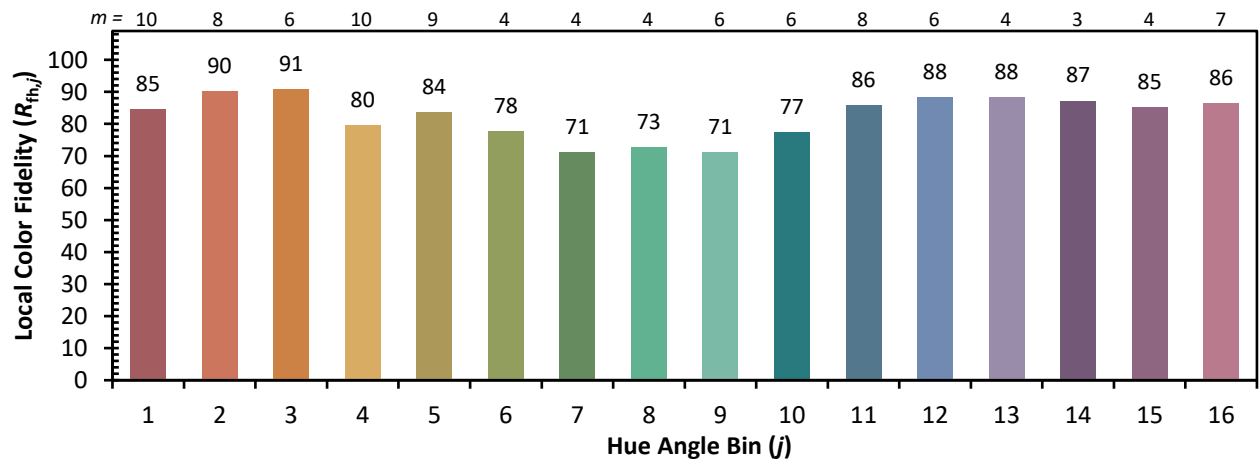
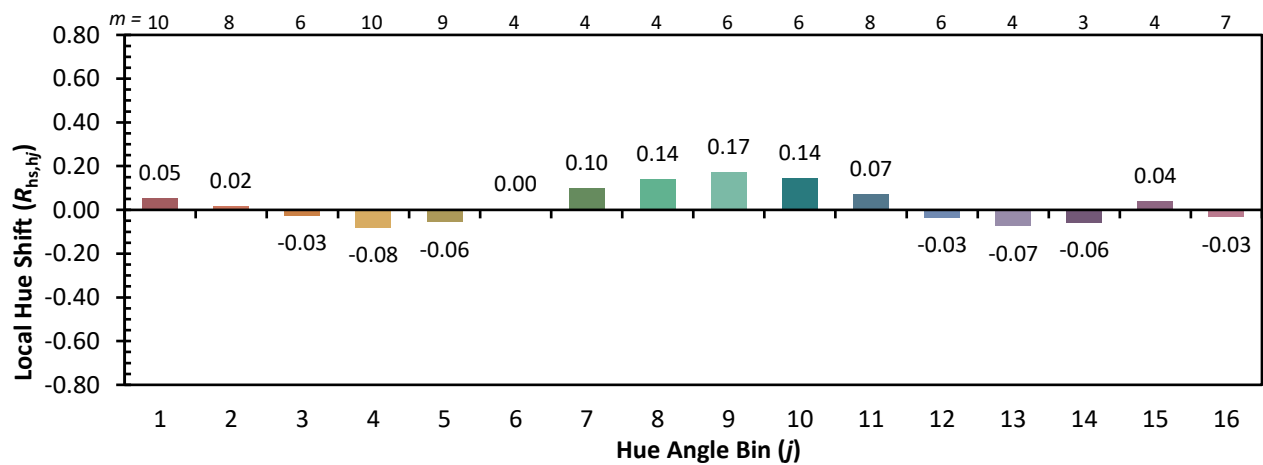
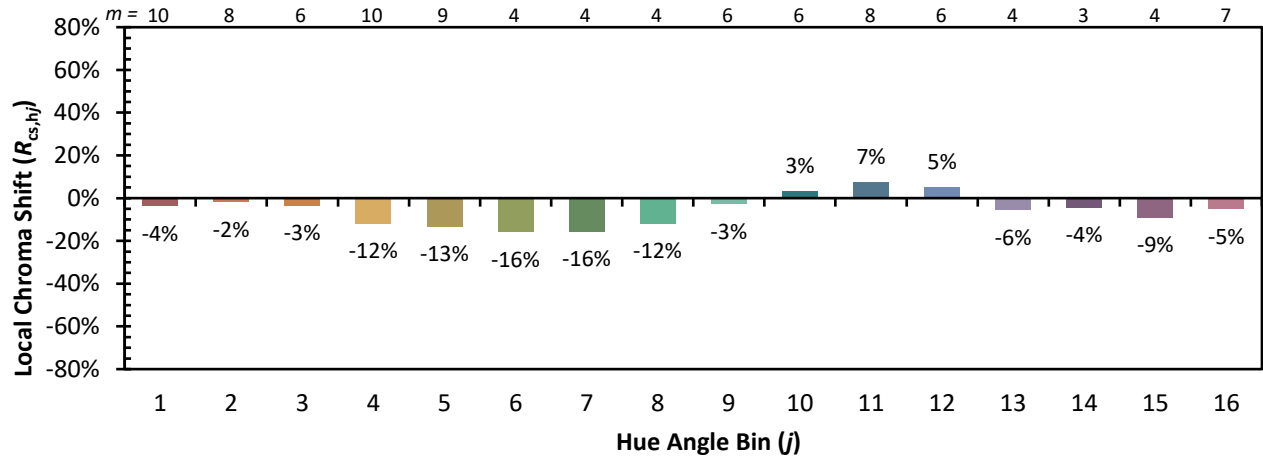


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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 |            |

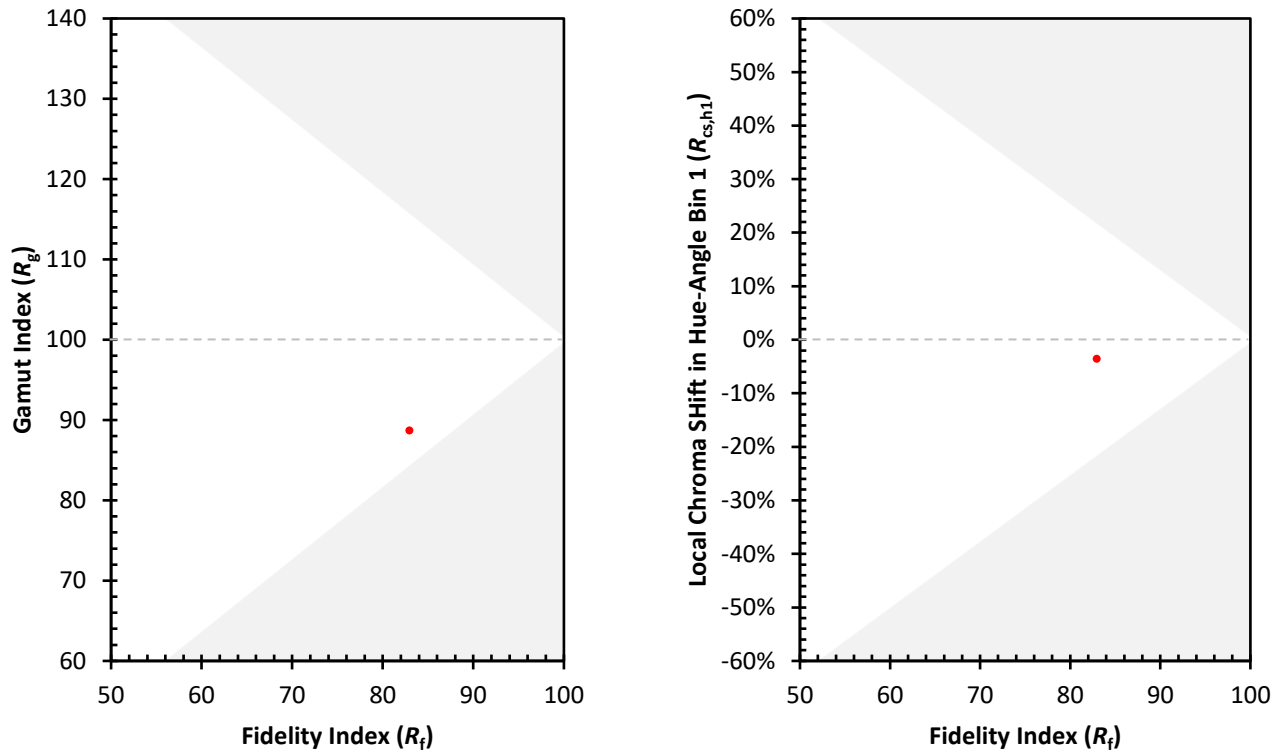


Color Rendition by Hue-Angle Bin





**Measure Comparisons**



(END OF REPORT)