

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: P1249165

Luminaire Tested: P3A13R159027DE010 E3DL1LI

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1249165  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2601-647-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/30/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A13R159027DE010 E3DL1LI  
Description: 3in Adjustable LED luminaire with, R15 optic, 2700K CCT AND, 90CRI , E3DL1LI TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

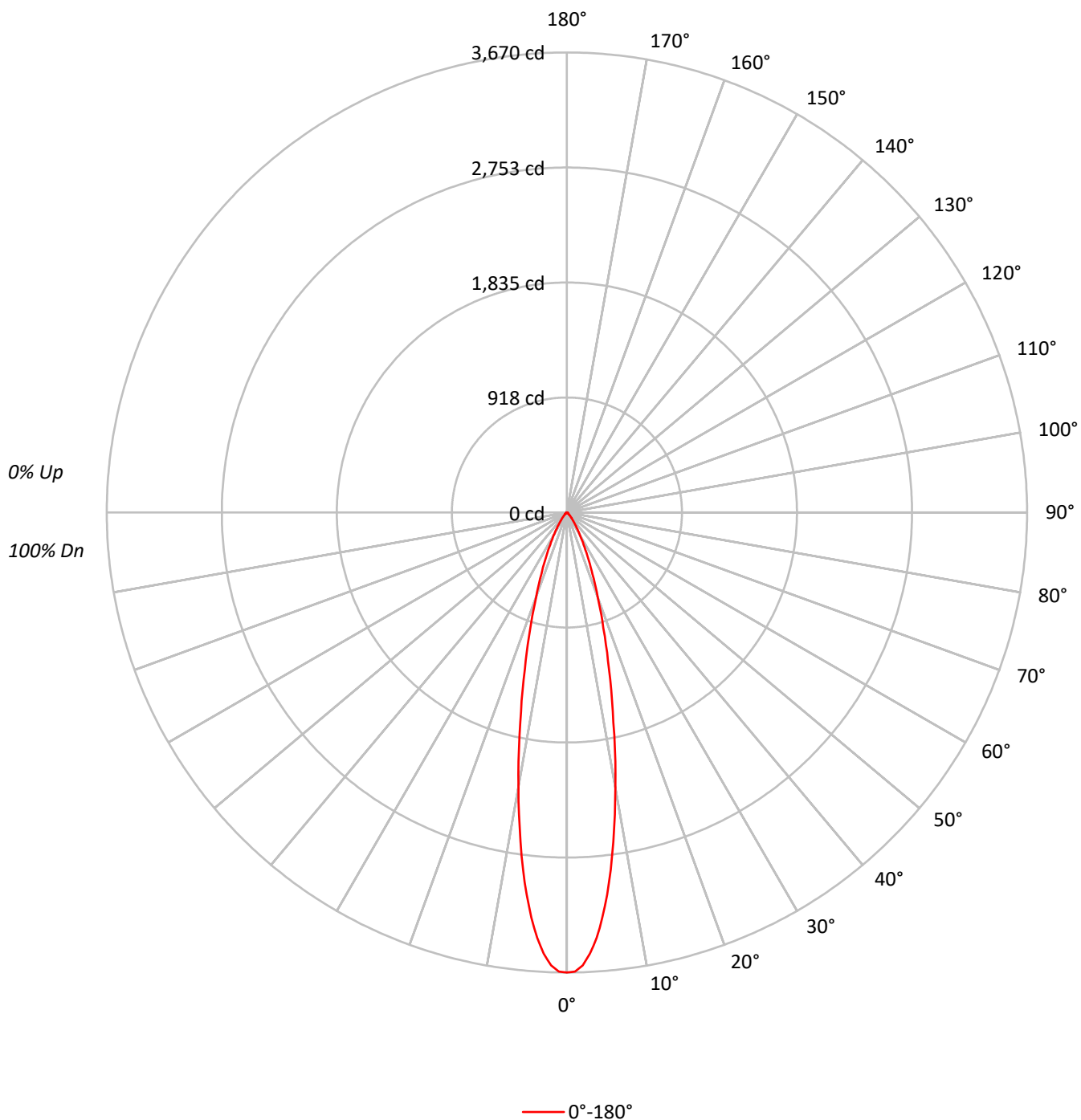
Lumens per Lamp: N/A  
Luminaire Lumens: 942.0 lumens  
Efficiency: N/A  
Efficacy: 64.5 lumens/watt  
Spacing Criteria (0/90/45): 0.4 / 0.4 / 0.43  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 14.6  
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: P1249165

CATALOG NUMBER: P3A13R159027DE010 E3DL1LI

### Luminous Intensity Polar Plot



TEST NUMBER: P1249165

CATALOG NUMBER: P3A13R159027DE010 E3DL1LI

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

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

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 804716 |
| 5°  | 714306 |
| 10° | 496050 |
| 15° | 293350 |
| 20° | 167081 |
| 25° | 95497  |
| 30° | 52844  |
| 35° | 28188  |
| 40° | 15572  |
| 45° | 8435   |
| 50° | 5254   |
| 55° | 4167   |
| 60° | 3596   |
| 65° | 3321   |
| 70° | 2885   |
| 75° | 3050   |
| 80° | 2273   |
| 85° | 2264   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 8435 cd/sqm

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CATALOG NUMBER: P3A13R159027DE010 E3DL1LI

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 275.9  | 29.3      |
| 10°-20°   | 364.2  | 38.7      |
| 20°-30°   | 187.5  | 19.9      |
| 30°-40°   | 70.4   | 7.5       |
| 40°-50°   | 23.0   | 2.4       |
| 50°-60°   | 9.9    | 1.1       |
| 60°-70°   | 6.3    | 0.7       |
| 70°-80°   | 3.7    | 0.4       |
| 80°-90°   | 1.0    | 0.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| <hr/>     |        |           |
| 0°-30°    | 827.7  | 87.9      |
| 0°-40°    | 898.1  | 95.3      |
| 0°-60°    | 931.0  | 98.8      |
| 0°-90°    | 942.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 942.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 3670 |      |
| 5°  | 3245 | 276  |
| 15° | 1292 | 364  |
| 25° | 395  | 188  |
| 35° | 105  | 70   |
| 45° | 27   | 23   |
| 55° | 11   | 10   |
| 65° | 6    | 6    |
| 75° | 4    | 4    |
| 85° | 1    | 1    |
| 90° | 0    |      |

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CATALOG NUMBER: P3A13R159027DE010 E3DL1LI

**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 3669.8 |
| 1°    | 3662.5 |
| 2°    | 3614.4 |
| 3°    | 3522.8 |
| 4°    | 3402.1 |
| 5°    | 3245.1 |
| 6°    | 3067.2 |
| 7°    | 2872.1 |
| 8°    | 2655.2 |
| 9°    | 2441.1 |
| 10°   | 2227.8 |
| 12.5° | 1714.2 |
| 15°   | 1292.2 |
| 17.5° | 967.4  |
| 20°   | 716.0  |
| 22.5° | 534.5  |
| 25°   | 394.7  |
| 27.5° | 287.7  |
| 30°   | 208.7  |
| 32.5° | 147.9  |
| 35°   | 105.3  |
| 37.5° | 75.3   |
| 40°   | 54.4   |
| 42.5° | 39.0   |
| 45°   | 27.2   |
| 47.5° | 20.0   |
| 50°   | 15.4   |
| 52.5° | 12.7   |
| 55°   | 10.9   |
| 57.5° | 9.1    |
| 60°   | 8.2    |
| 62.5° | 7.3    |
| 65°   | 6.4    |
| 67.5° | 5.4    |
| 70°   | 4.5    |
| 72.5° | 4.5    |
| 75°   | 3.6    |
| 77.5° | 2.7    |
| 80°   | 1.8    |
| 82.5° | 1.8    |
| 85°   | 0.9    |
| 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: SP1-2504-409-27

Test Date: 05/16/2025

Luminaire Tested: LD3A13R159027D010 E3D1H

Data in this report applies to families of products including LD3A

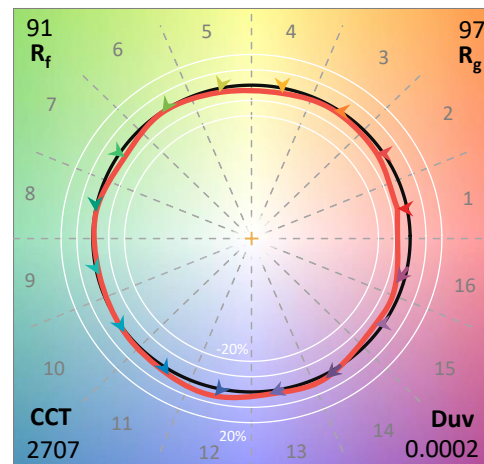
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2504-409-27  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 01/06/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: IRiS  
 Catalog Number: **LD3A13R159027D010 E3D1H**  
 Description: 3in Adjustable LED luminaire with, R15 optic, 2700K CCT AND, 90CRI LEDS, E3D1H TRIM

### Spectral Parameters

CCT (K): 2707  
 CIE  $u'$ : 0.2622  
 CIE  $v'$ : 0.5275  
 Duv: 0.0002  
 CIE x: 0.4597  
 CIE y: 0.4111  
 CIE z: 0.1292  
 Peak Wavelength (nm): 618  
 Dominant Wavelength (nm): 584  
 Purity: 61.37764  
 R<sub>f</sub>: 91.2  
 R<sub>g</sub>: 97.1

CRI (Ra): 92.2  
 R1: 93.3  
 R2: 98.1  
 R3: 97.1  
 R4: 93.2  
 R5: 93.7  
 R6: 97.0  
 R7: 88.8  
 R8: 76.6  
 R9: 50.2  
 R10: 95.3  
 R11: 96.2  
 R12: 85.7  
 R13: 94.9  
 R14: 99.3  
 R15: 87.0



### Test Conditions

Stabilization Time: 48M  
 Operation Time: 1H 48M  
 Sphere Temperature (°C): 25.0

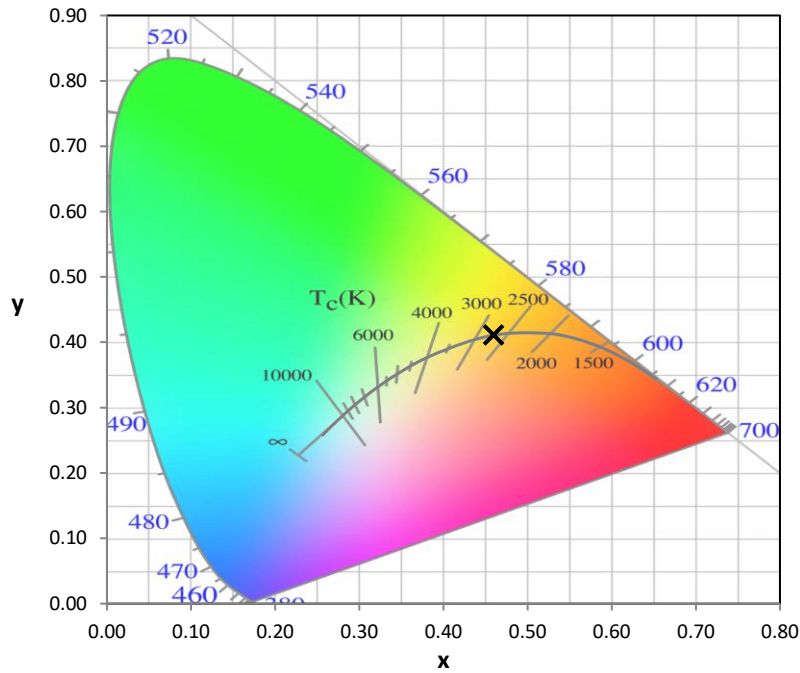


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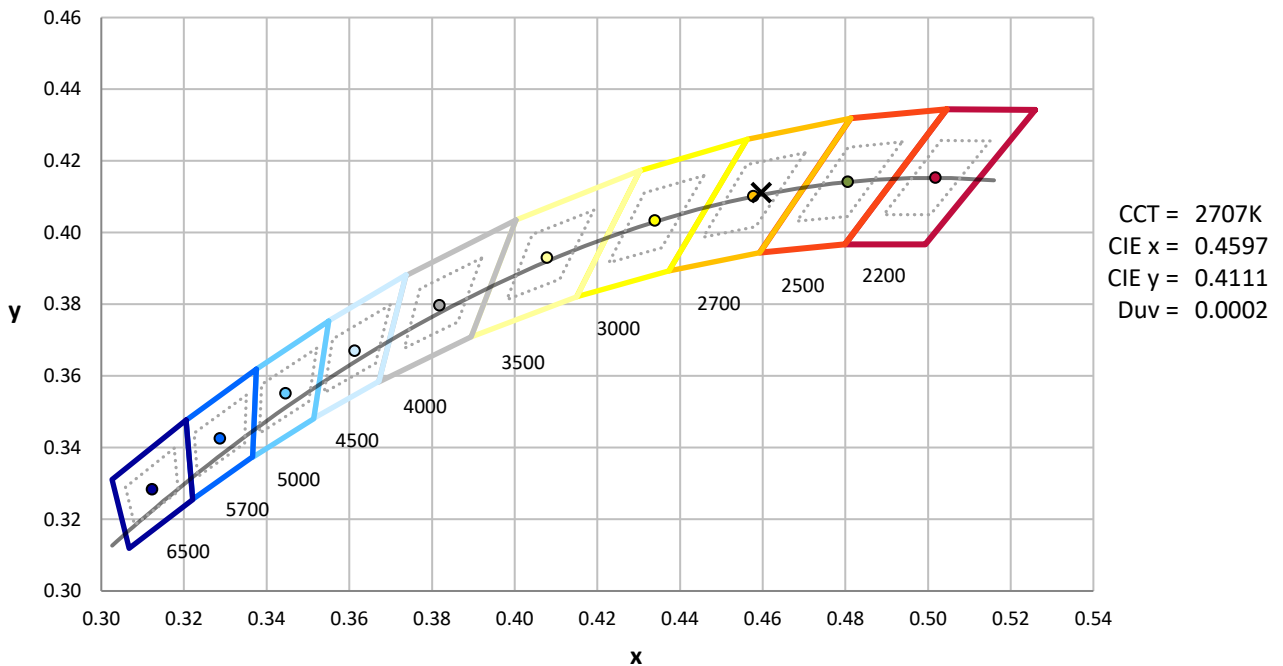
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 12/16/2024       | 6/16/2025            |
| 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**



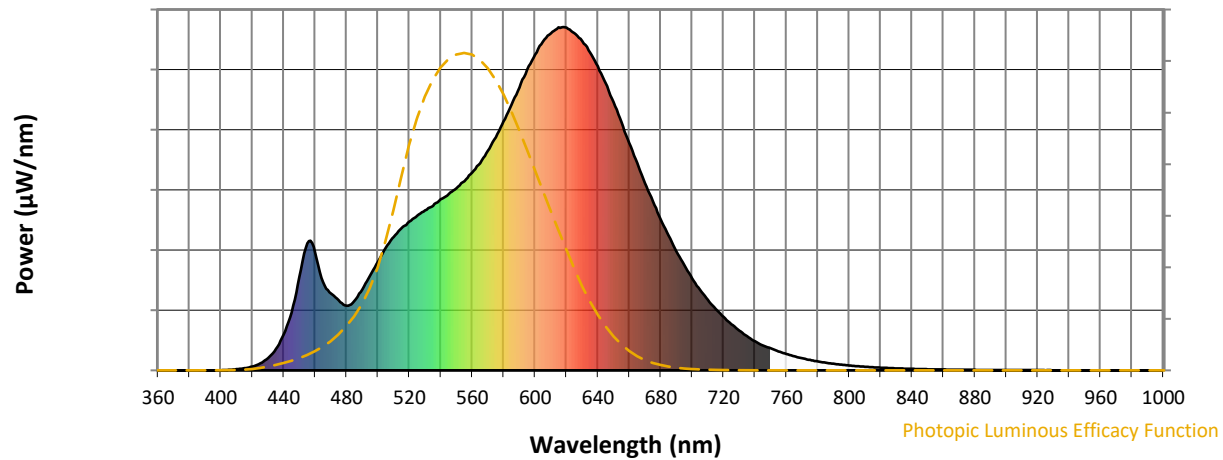
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength

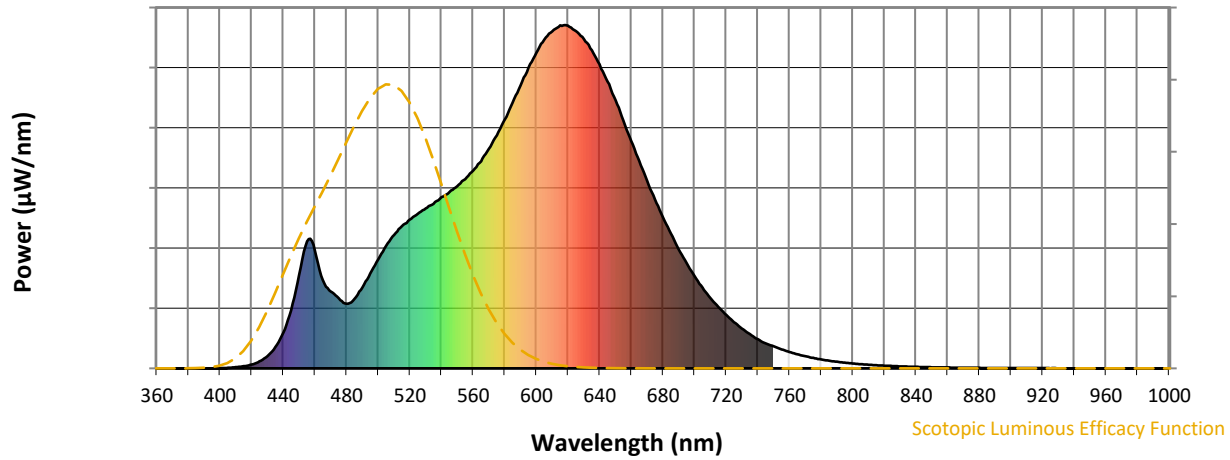


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 0                             | NR                             | 490               | 236                           | NR                             | 620               | 998                           | NR                             | 750               | 64                            | NR                             | 880               | 1                             | NR                             |
| 365               | 0                             | NR                             | 495               | 276                           | NR                             | 625               | 983                           | NR                             | 755               | 55                            | NR                             | 885               | 1                             | NR                             |
| 370               | 0                             | NR                             | 500               | 317                           | NR                             | 630               | 960                           | NR                             | 760               | 48                            | NR                             | 890               | 1                             | NR                             |
| 375               | 0                             | NR                             | 505               | 357                           | NR                             | 635               | 927                           | NR                             | 765               | 41                            | NR                             | 895               | 1                             | NR                             |
| 380               | 0                             | NR                             | 510               | 389                           | NR                             | 640               | 885                           | NR                             | 770               | 35                            | NR                             | 900               | 1                             | NR                             |
| 385               | 0                             | NR                             | 515               | 414                           | NR                             | 645               | 836                           | NR                             | 775               | 30                            | NR                             | 905               | 1                             | NR                             |
| 390               | 0                             | NR                             | 520               | 434                           | NR                             | 650               | 781                           | NR                             | 780               | 26                            | NR                             | 910               | 1                             | NR                             |
| 395               | 0                             | NR                             | 525               | 450                           | NR                             | 655               | 723                           | NR                             | 785               | 22                            | NR                             | 915               | 1                             | NR                             |
| 400               | 1                             | NR                             | 530               | 466                           | NR                             | 660               | 662                           | NR                             | 790               | 19                            | NR                             | 920               | 1                             | NR                             |
| 405               | 2                             | NR                             | 535               | 480                           | NR                             | 665               | 604                           | NR                             | 795               | 16                            | NR                             | 925               | 0                             | NR                             |
| 410               | 3                             | NR                             | 540               | 498                           | NR                             | 670               | 546                           | NR                             | 800               | 14                            | NR                             | 930               | 0                             | NR                             |
| 415               | 6                             | NR                             | 545               | 514                           | NR                             | 675               | 492                           | NR                             | 805               | 12                            | NR                             | 935               | 0                             | NR                             |
| 420               | 11                            | NR                             | 550               | 530                           | NR                             | 680               | 440                           | NR                             | 810               | 10                            | NR                             | 940               | 0                             | NR                             |
| 425               | 20                            | NR                             | 555               | 551                           | NR                             | 685               | 393                           | NR                             | 815               | 9                             | NR                             | 945               | 0                             | NR                             |
| 430               | 35                            | NR                             | 560               | 577                           | NR                             | 690               | 347                           | NR                             | 820               | 8                             | NR                             | 950               | 0                             | NR                             |
| 435               | 62                            | NR                             | 565               | 604                           | NR                             | 695               | 306                           | NR                             | 825               | 7                             | NR                             | 955               | 0                             | NR                             |
| 440               | 104                           | NR                             | 570               | 640                           | NR                             | 700               | 268                           | NR                             | 830               | 6                             | NR                             | 960               | 0                             | NR                             |
| 445               | 168                           | NR                             | 575               | 679                           | NR                             | 705               | 235                           | NR                             | 835               | 5                             | NR                             | 965               | 0                             | NR                             |
| 450               | 272                           | NR                             | 580               | 726                           | NR                             | 710               | 205                           | NR                             | 840               | 4                             | NR                             | 970               | 0                             | NR                             |
| 455               | 370                           | NR                             | 585               | 774                           | NR                             | 715               | 179                           | NR                             | 845               | 4                             | NR                             | 975               | 0                             | NR                             |
| 460               | 344                           | NR                             | 590               | 824                           | NR                             | 720               | 156                           | NR                             | 850               | 3                             | NR                             | 980               | 0                             | NR                             |
| 465               | 257                           | NR                             | 595               | 877                           | NR                             | 725               | 134                           | NR                             | 855               | 3                             | NR                             | 985               | 0                             | NR                             |
| 470               | 224                           | NR                             | 600               | 920                           | NR                             | 730               | 116                           | NR                             | 860               | 2                             | NR                             | 990               | 0                             | NR                             |
| 475               | 204                           | NR                             | 605               | 957                           | NR                             | 735               | 100                           | NR                             | 865               | 2                             | NR                             | 995               | 0                             | NR                             |
| 480               | 188                           | NR                             | 610               | 982                           | NR                             | 740               | 85                            | NR                             | 870               | 2                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 202                           | NR                             | 615               | 999                           | NR                             | 745               | 73                            | NR                             | 875               | 2                             | NR                             |                   |                               |                                |

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### Scotopic Flux vs. Wavelength



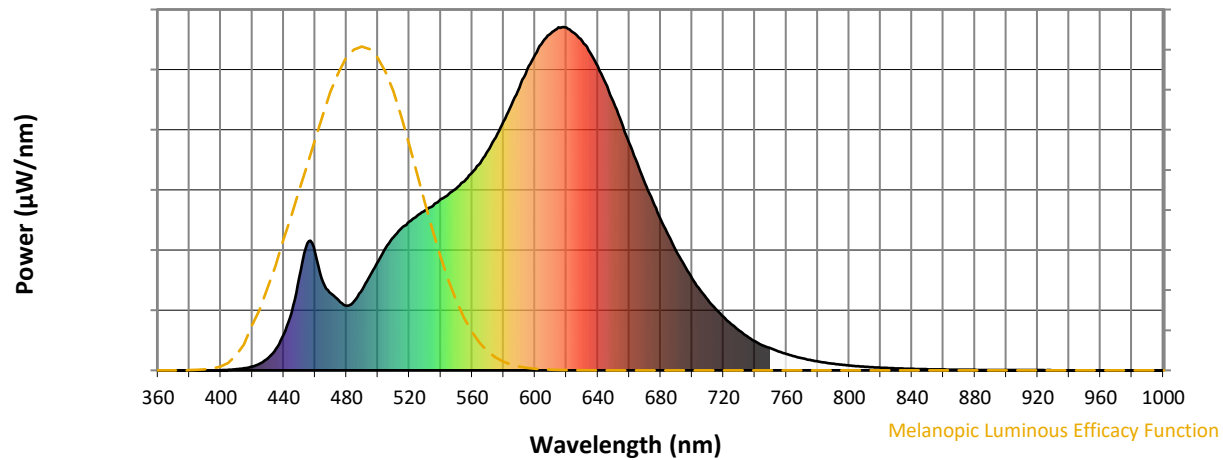
Scotopic Lumens: NR

S/P: 1.31

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 236                         | NR               | 620       | 998                         | NR               | 750       | 64                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 276                         | NR               | 625       | 983                         | NR               | 755       | 55                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 317                         | NR               | 630       | 960                         | NR               | 760       | 48                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 357                         | NR               | 635       | 927                         | NR               | 765       | 41                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 389                         | NR               | 640       | 885                         | NR               | 770       | 35                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 414                         | NR               | 645       | 836                         | NR               | 775       | 30                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 434                         | NR               | 650       | 781                         | NR               | 780       | 26                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 450                         | NR               | 655       | 723                         | NR               | 785       | 22                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 466                         | NR               | 660       | 662                         | NR               | 790       | 19                          | NR               | 920       | 1                           | NR               |
| 405       | 2                           | NR               | 535       | 480                         | NR               | 665       | 604                         | NR               | 795       | 16                          | NR               | 925       | 0                           | NR               |
| 410       | 3                           | NR               | 540       | 498                         | NR               | 670       | 546                         | NR               | 800       | 14                          | NR               | 930       | 0                           | NR               |
| 415       | 6                           | NR               | 545       | 514                         | NR               | 675       | 492                         | NR               | 805       | 12                          | NR               | 935       | 0                           | NR               |
| 420       | 11                          | NR               | 550       | 530                         | NR               | 680       | 440                         | NR               | 810       | 10                          | NR               | 940       | 0                           | NR               |
| 425       | 20                          | NR               | 555       | 551                         | NR               | 685       | 393                         | NR               | 815       | 9                           | NR               | 945       | 0                           | NR               |
| 430       | 35                          | NR               | 560       | 577                         | NR               | 690       | 347                         | NR               | 820       | 8                           | NR               | 950       | 0                           | NR               |
| 435       | 62                          | NR               | 565       | 604                         | NR               | 695       | 306                         | NR               | 825       | 7                           | NR               | 955       | 0                           | NR               |
| 440       | 104                         | NR               | 570       | 640                         | NR               | 700       | 268                         | NR               | 830       | 6                           | NR               | 960       | 0                           | NR               |
| 445       | 168                         | NR               | 575       | 679                         | NR               | 705       | 235                         | NR               | 835       | 5                           | NR               | 965       | 0                           | NR               |
| 450       | 272                         | NR               | 580       | 726                         | NR               | 710       | 205                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 370                         | NR               | 585       | 774                         | NR               | 715       | 179                         | NR               | 845       | 4                           | NR               | 975       | 0                           | NR               |
| 460       | 344                         | NR               | 590       | 824                         | NR               | 720       | 156                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 257                         | NR               | 595       | 877                         | NR               | 725       | 134                         | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 224                         | NR               | 600       | 920                         | NR               | 730       | 116                         | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 204                         | NR               | 605       | 957                         | NR               | 735       | 100                         | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 188                         | NR               | 610       | 982                         | NR               | 740       | 85                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 202                         | NR               | 615       | 999                         | NR               | 745       | 73                          | NR               | 875       | 2                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.5

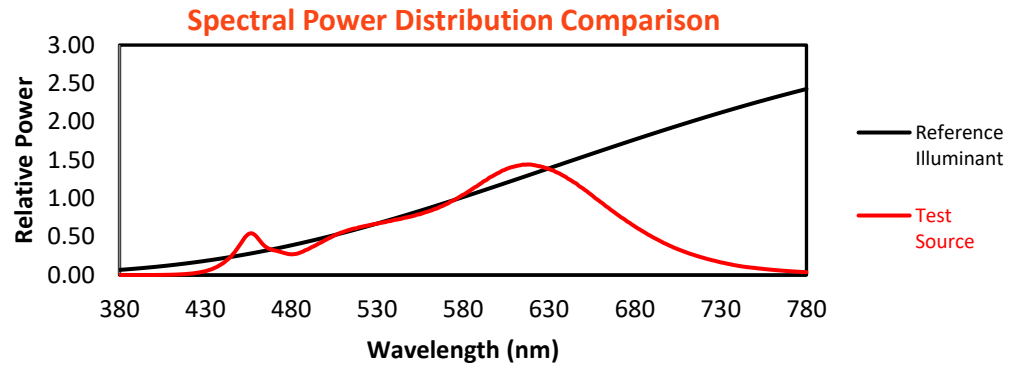
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 236                         | NR               | 620       | 998                         | NR               | 750       | 64                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 276                         | NR               | 625       | 983                         | NR               | 755       | 55                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 317                         | NR               | 630       | 960                         | NR               | 760       | 48                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 357                         | NR               | 635       | 927                         | NR               | 765       | 41                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 389                         | NR               | 640       | 885                         | NR               | 770       | 35                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 414                         | NR               | 645       | 836                         | NR               | 775       | 30                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 434                         | NR               | 650       | 781                         | NR               | 780       | 26                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 450                         | NR               | 655       | 723                         | NR               | 785       | 22                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 466                         | NR               | 660       | 662                         | NR               | 790       | 19                          | NR               | 920       | 1                           | NR               |
| 405       | 2                           | NR               | 535       | 480                         | NR               | 665       | 604                         | NR               | 795       | 16                          | NR               | 925       | 0                           | NR               |
| 410       | 3                           | NR               | 540       | 498                         | NR               | 670       | 546                         | NR               | 800       | 14                          | NR               | 930       | 0                           | NR               |
| 415       | 6                           | NR               | 545       | 514                         | NR               | 675       | 492                         | NR               | 805       | 12                          | NR               | 935       | 0                           | NR               |
| 420       | 11                          | NR               | 550       | 530                         | NR               | 680       | 440                         | NR               | 810       | 10                          | NR               | 940       | 0                           | NR               |
| 425       | 20                          | NR               | 555       | 551                         | NR               | 685       | 393                         | NR               | 815       | 9                           | NR               | 945       | 0                           | NR               |
| 430       | 35                          | NR               | 560       | 577                         | NR               | 690       | 347                         | NR               | 820       | 8                           | NR               | 950       | 0                           | NR               |
| 435       | 62                          | NR               | 565       | 604                         | NR               | 695       | 306                         | NR               | 825       | 7                           | NR               | 955       | 0                           | NR               |
| 440       | 104                         | NR               | 570       | 640                         | NR               | 700       | 268                         | NR               | 830       | 6                           | NR               | 960       | 0                           | NR               |
| 445       | 168                         | NR               | 575       | 679                         | NR               | 705       | 235                         | NR               | 835       | 5                           | NR               | 965       | 0                           | NR               |
| 450       | 272                         | NR               | 580       | 726                         | NR               | 710       | 205                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 370                         | NR               | 585       | 774                         | NR               | 715       | 179                         | NR               | 845       | 4                           | NR               | 975       | 0                           | NR               |
| 460       | 344                         | NR               | 590       | 824                         | NR               | 720       | 156                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 257                         | NR               | 595       | 877                         | NR               | 725       | 134                         | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 224                         | NR               | 600       | 920                         | NR               | 730       | 116                         | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 204                         | NR               | 605       | 957                         | NR               | 735       | 100                         | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 188                         | NR               | 610       | 982                         | NR               | 740       | 85                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 202                         | NR               | 615       | 999                         | NR               | 745       | 73                          | NR               | 875       | 2                           | NR               |           |                             |                  |

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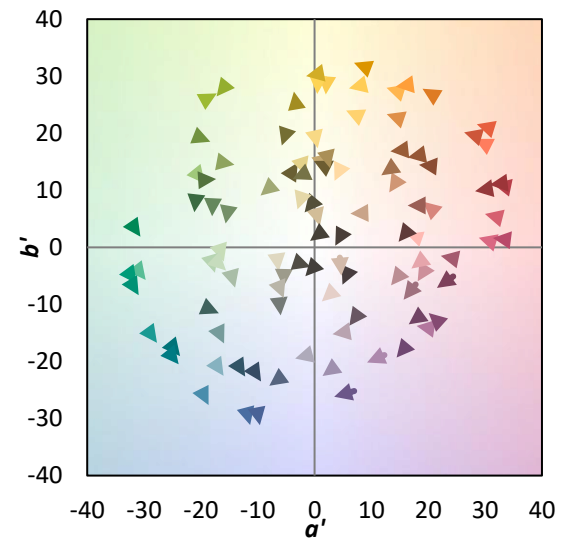
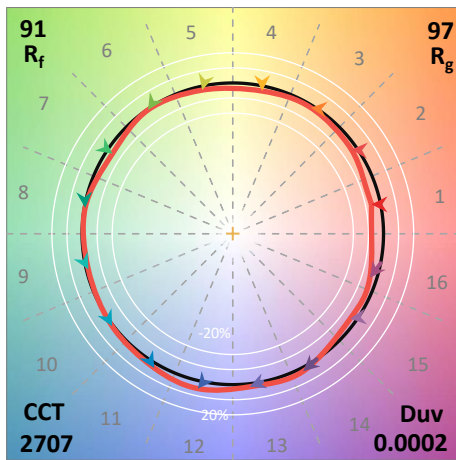
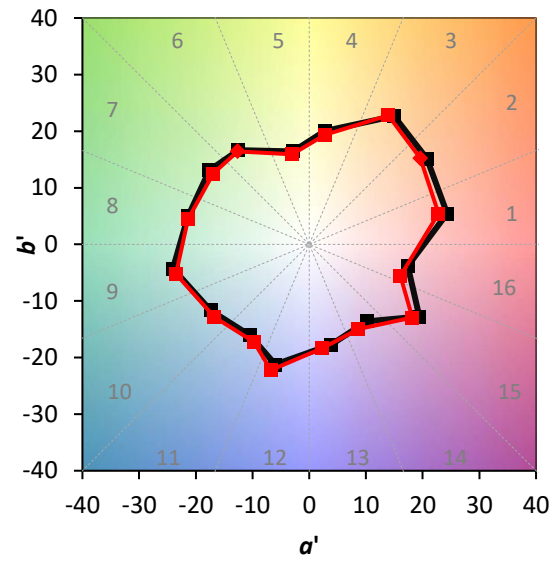
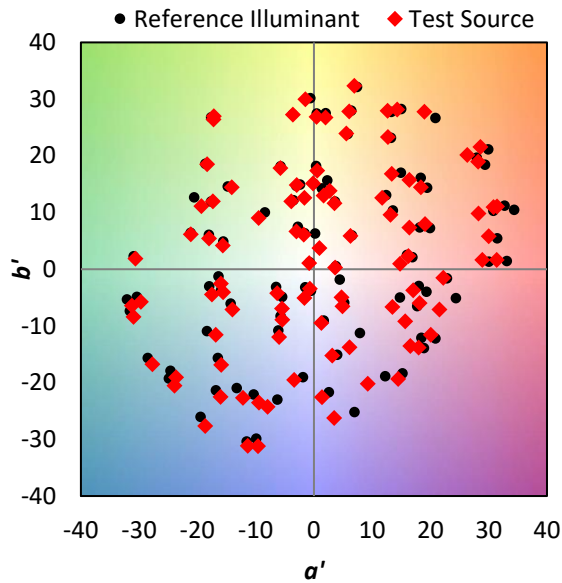
TM-30-18

### Summary

$R_f = 91.2$   
 $R_g = 97.1$   
 $CIE R_a = 92.2$   
 $R_9 = 50.2$

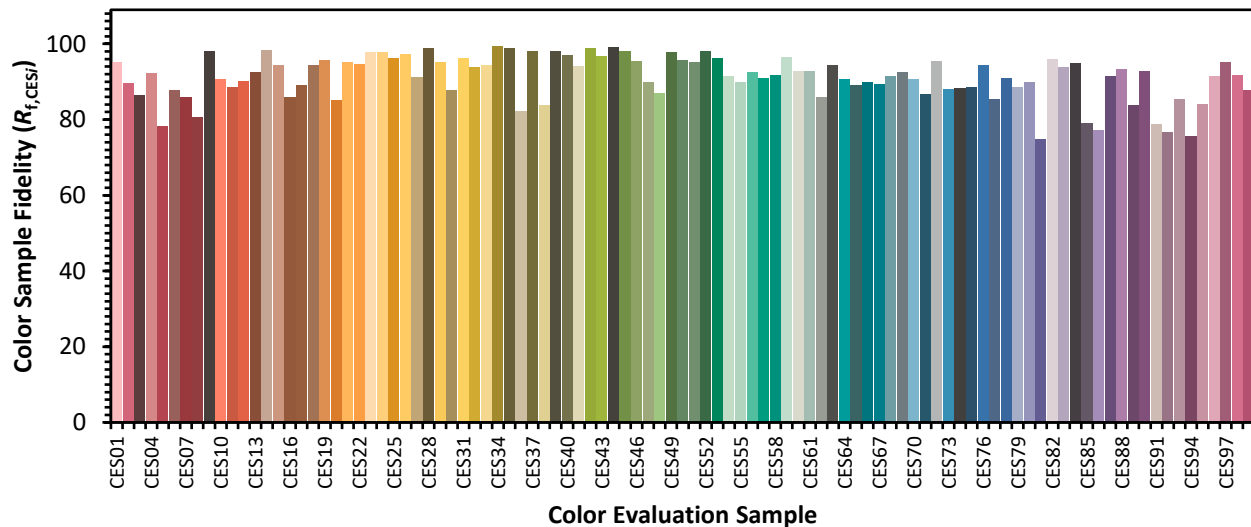


### Color Vector Graphics

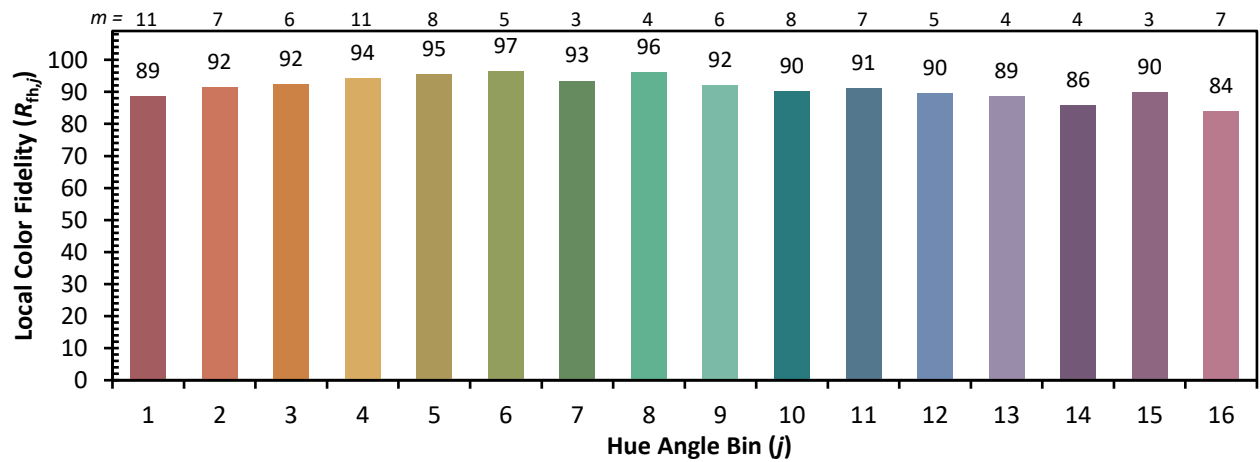
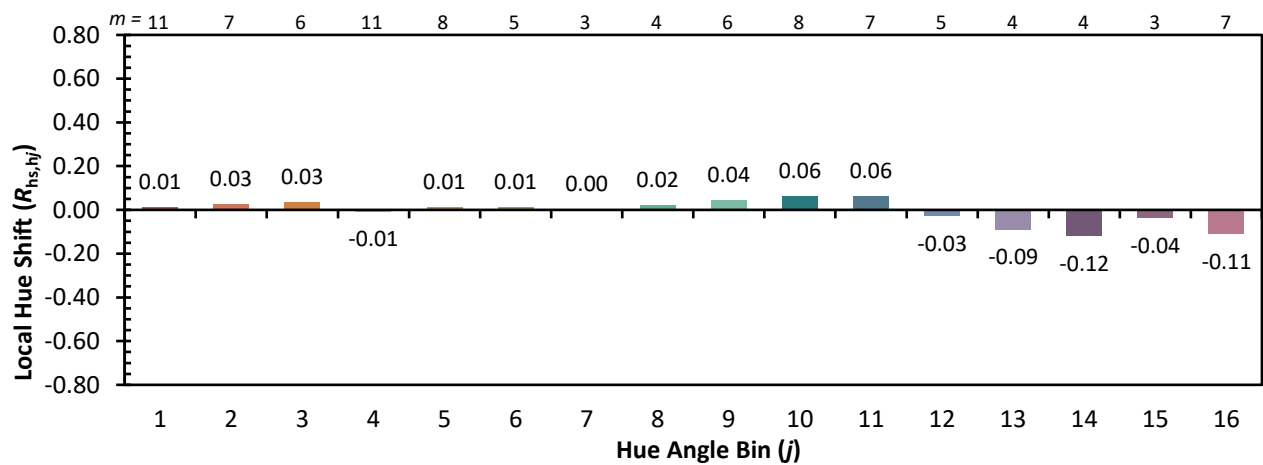
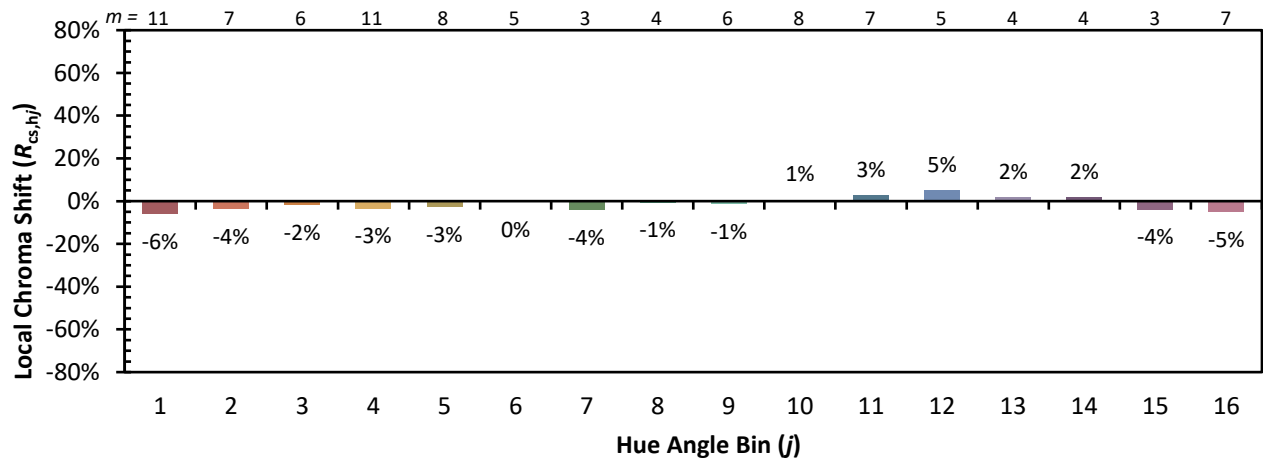


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 97 | CES51 = 95 | CES76 = 94 |
| CES02 = 64 | CES27 = 91 | CES52 = 98 | CES77 = 85 |
| CES03 = 32 | CES28 = 99 | CES53 = 96 | CES78 = 91 |
| CES04 = 71 | CES29 = 95 | CES54 = 91 | CES79 = 89 |
| CES05 = 51 | CES30 = 88 | CES55 = 90 | CES80 = 90 |
| CES06 = 52 | CES31 = 96 | CES56 = 93 | CES81 = 75 |
| CES07 = 44 | CES32 = 94 | CES57 = 91 | CES82 = 96 |
| CES08 = 43 | CES33 = 94 | CES58 = 92 | CES83 = 94 |
| CES09 = 29 | CES34 = 99 | CES59 = 97 | CES84 = 95 |
| CES10 = 77 | CES35 = 99 | CES60 = 93 | CES85 = 79 |
| CES11 = 59 | CES36 = 82 | CES61 = 93 | CES86 = 77 |
| CES12 = 66 | CES37 = 98 | CES62 = 86 | CES87 = 91 |
| CES13 = 44 | CES38 = 84 | CES63 = 94 | CES88 = 93 |
| CES14 = 74 | CES39 = 98 | CES64 = 91 | CES89 = 84 |
| CES15 = 72 | CES40 = 97 | CES65 = 89 | CES90 = 93 |
| CES16 = 48 | CES41 = 94 | CES66 = 90 | CES91 = 79 |
| CES17 = 50 | CES42 = 99 | CES67 = 89 | CES92 = 77 |
| CES18 = 57 | CES43 = 97 | CES68 = 91 | CES93 = 86 |
| CES19 = 72 | CES44 = 99 | CES69 = 93 | CES94 = 76 |
| CES20 = 68 | CES45 = 98 | CES70 = 91 | CES95 = 84 |
| CES21 = 87 | CES46 = 96 | CES71 = 87 | CES96 = 91 |
| CES22 = 79 | CES47 = 90 | CES72 = 96 | CES97 = 95 |
| CES23 = 92 | CES48 = 87 | CES73 = 88 | CES98 = 92 |
| CES24 = 91 | CES49 = 98 | CES74 = 88 | CES99 = 88 |
| CES25 = 72 | CES50 = 96 | CES75 = 89 |            |

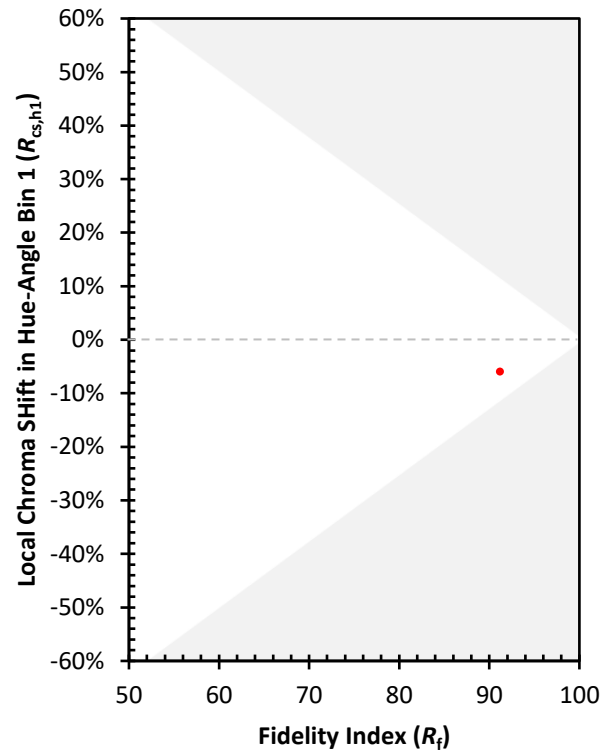
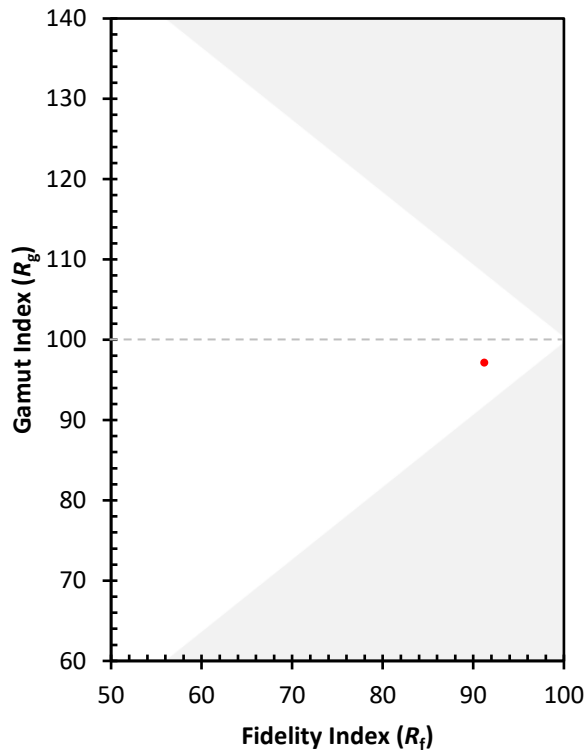


Color Rendition by Hue-Angle Bin





**Measure Comparisons**



(END OF REPORT)