

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: P1260745

Luminaire Tested: P3A20R409050D010 E3CD1MMS

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1260745  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2601-647-24)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/30/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A20R409050D010 E3CD1MMS  
Description: 3in Adjustable LED luminaire with, R40 optic, 5000K CCT AND, 90CRI , E3CD1MMS TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

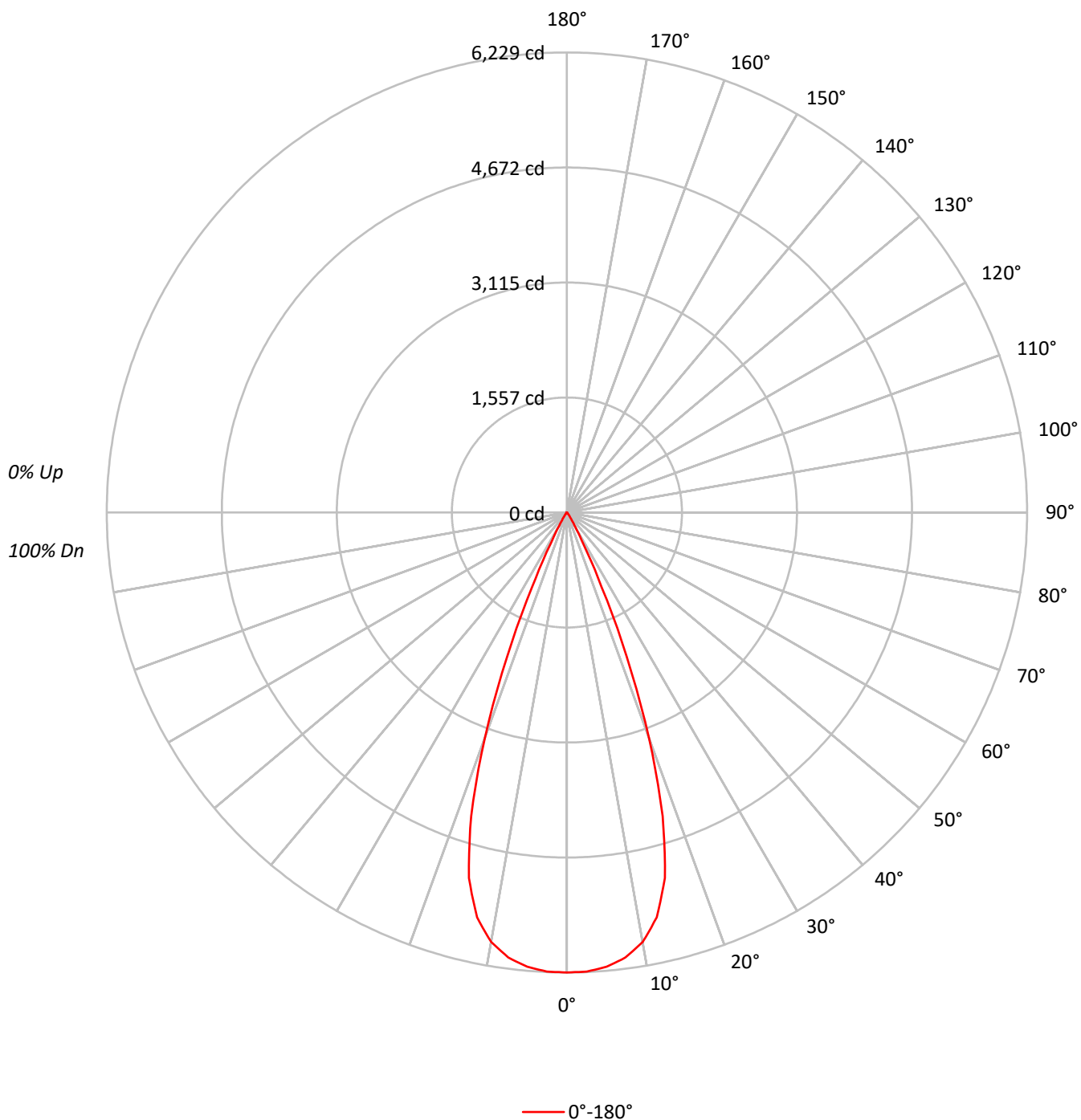
Lumens per Lamp: N/A  
Luminaire Lumens: 2593.9 lumens  
Efficiency: N/A  
Efficacy: 90.1 lumens/watt  
Spacing Criteria (0/90/45): 0.69 / 0.69 / 0.59  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 28.8  
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: P1260745

CATALOG NUMBER: P3A20R409050D010 E3CD1MMS

### Luminous Intensity Polar Plot



TEST NUMBER: P1260745

CATALOG NUMBER: P3A20R409050D010 E3CD1MMS

**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  | 30  | 10  | 50  | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |
| 1   | 115 | 112 | 110 | 109 | 112 | 110 | 109 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 99  | 98  | 98  | 96  |    |    |
| 2   | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 100 | 102 | 100 | 98  | 99  | 97  | 96  | 96  | 95  | 94  | 92  |    |    |
| 3   | 107 | 102 | 98  | 95  | 105 | 100 | 97  | 94  | 98  | 95  | 93  | 96  | 93  | 91  | 94  | 92  | 90  | 89  |    |    |
| 4   | 103 | 97  | 93  | 90  | 102 | 96  | 92  | 89  | 94  | 91  | 88  | 92  | 90  | 87  | 91  | 88  | 86  | 85  |    |    |
| 5   | 100 | 93  | 89  | 86  | 98  | 92  | 88  | 85  | 91  | 87  | 85  | 89  | 86  | 84  | 88  | 85  | 83  | 82  |    |    |
| 6   | 96  | 90  | 85  | 82  | 95  | 89  | 85  | 82  | 88  | 84  | 81  | 86  | 83  | 81  | 85  | 82  | 80  | 79  |    |    |
| 7   | 93  | 86  | 82  | 79  | 92  | 86  | 81  | 78  | 85  | 81  | 78  | 83  | 80  | 78  | 82  | 79  | 77  | 76  |    |    |
| 8   | 90  | 83  | 79  | 76  | 89  | 83  | 78  | 75  | 82  | 78  | 75  | 81  | 77  | 75  | 80  | 77  | 75  | 73  |    |    |
| 9   | 87  | 80  | 76  | 73  | 87  | 80  | 76  | 73  | 79  | 75  | 72  | 78  | 75  | 72  | 77  | 74  | 72  | 71  |    |    |
| 10  | 85  | 77  | 73  | 70  | 84  | 77  | 73  | 70  | 76  | 73  | 70  | 76  | 72  | 70  | 75  | 72  | 70  | 69  |    |    |

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

|     |         |
|-----|---------|
|     | 0°      |
| 0°  | 1365812 |
| 5°  | 1359230 |
| 10° | 1314939 |
| 15° | 1163367 |
| 20° | 759029  |
| 25° | 268878  |
| 30° | 57021   |
| 35° | 18765   |
| 40° | 6870    |
| 45° | 2295    |
| 50° | 1876    |
| 55° | 2103    |
| 60° | 1623    |
| 65° | 1920    |
| 70° | 1154    |
| 75° | 1525    |
| 80° | 2273    |
| 85° | 0       |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 82.5°

Luminance: 3024 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 581.0  | 22.4      |
| 10°-20°   | 1353.1 | 52.2      |
| 20°-30°   | 587.2  | 22.6      |
| 30°-40°   | 54.1   | 2.1       |
| 40°-50°   | 7.7    | 0.3       |
| 50°-60°   | 4.7    | 0.2       |
| 60°-70°   | 3.4    | 0.1       |
| 70°-80°   | 1.9    | 0.1       |
| 80°-90°   | 0.7    | 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       |
| 0°-30°    | 2521.3 | 97.2      |
| 0°-40°    | 2575.4 | 99.3      |
| 0°-60°    | 2587.8 | 99.8      |
| 0°-90°    | 2593.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2593.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 6229 |      |
| 5°  | 6175 | 581  |
| 15° | 5125 | 1353 |
| 25° | 1111 | 587  |
| 35° | 70   | 54   |
| 45° | 7    | 8    |
| 55° | 6    | 5    |
| 65° | 4    | 3    |
| 75° | 2    | 2    |
| 85° | 0    | 1    |
| 90° | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 6228.6 |
| 2.5°  | 6221.2 |
| 5°    | 6175.0 |
| 7.5°  | 6077.2 |
| 10°   | 5905.5 |
| 12.5° | 5615.7 |
| 15°   | 5124.6 |
| 17.5° | 4310.5 |
| 20°   | 3252.7 |
| 22.5° | 2111.9 |
| 25°   | 1111.3 |
| 27.5° | 478.1  |
| 30°   | 225.2  |
| 32.5° | 121.8  |
| 35°   | 70.1   |
| 37.5° | 42.5   |
| 40°   | 24.0   |
| 42.5° | 12.9   |
| 45°   | 7.4    |
| 47.5° | 5.5    |
| 50°   | 5.5    |
| 52.5° | 5.5    |
| 55°   | 5.5    |
| 57.5° | 5.5    |
| 60°   | 3.7    |
| 62.5° | 3.7    |
| 65°   | 3.7    |
| 67.5° | 3.7    |
| 70°   | 1.8    |
| 72.5° | 1.8    |
| 75°   | 1.8    |
| 77.5° | 1.8    |
| 80°   | 1.8    |
| 82.5° | 1.8    |
| 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: SP1-2504-409-15

Test Date: 05/14/2025

Luminaire Tested: LD3A10R129050D010 E3D1H

Data in this report applies to families of products including LD3A

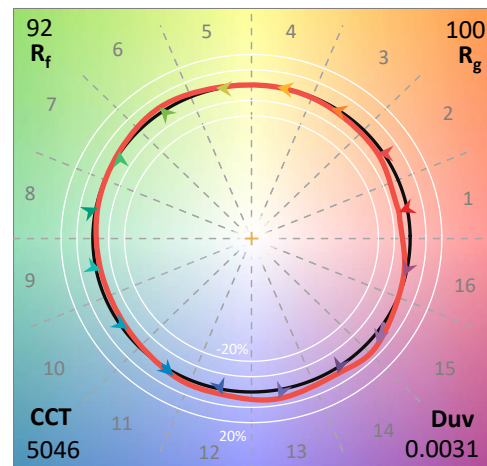
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2504-409-15  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 05/18/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: IRiS  
 Catalog Number: **LD3A10R129050D010 E3D1H**  
 Description: 3in Adjustable LED luminaire with, R12 optic, 5000K CCT AND, 90CRI LEDS, E3D1H TRIM

### Spectral Parameters

CCT (K): 5046  
 CIE  $u'$ : 0.2088  
 CIE  $v'$ : 0.4872  
 Duv: 0.0031  
 CIE x: 0.3444  
 CIE y: 0.3571  
 CIE z: 0.2985  
 Peak Wavelength (nm): 451  
 Dominant Wavelength (nm): 569  
 Purity: 10.48811  
 R<sub>f</sub>: 91.5  
 R<sub>g</sub>: 100.4

CRI (Ra): 92.6  
 R1: 93.5  
 R2: 94.3  
 R3: 95.0  
 R4: 94.2  
 R5: 93.6  
 R6: 92.5  
 R7: 93.4  
 R8: 84.3  
 R9: 54.8  
 R10: 86.7  
 R11: 94.1  
 R12: 76.8  
 R13: 93.9  
 R14: 97.2  
 R15: 89.2



### Test Conditions

Stabilization Time: 48M  
 Operation Time: 1H 48M  
 Sphere Temperature (°C): 25.3

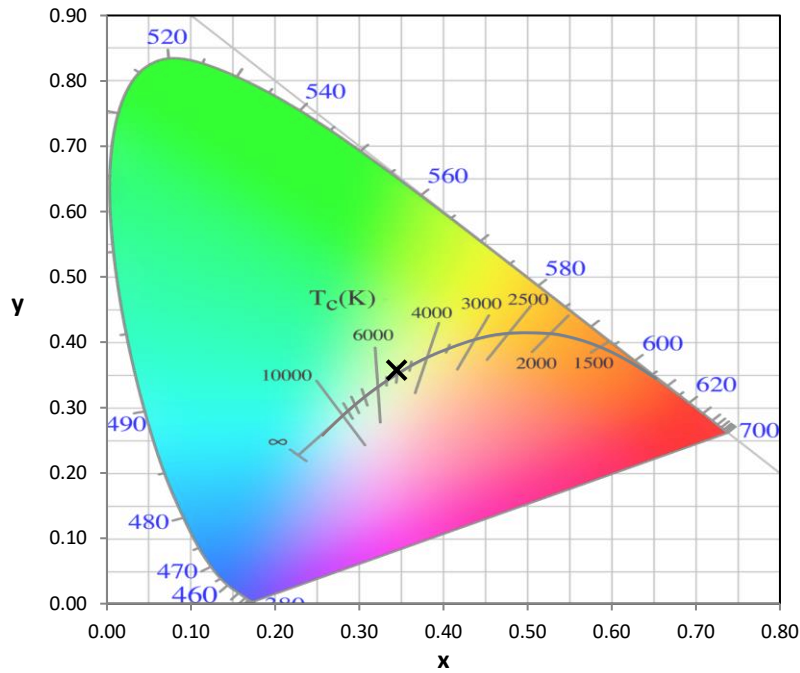


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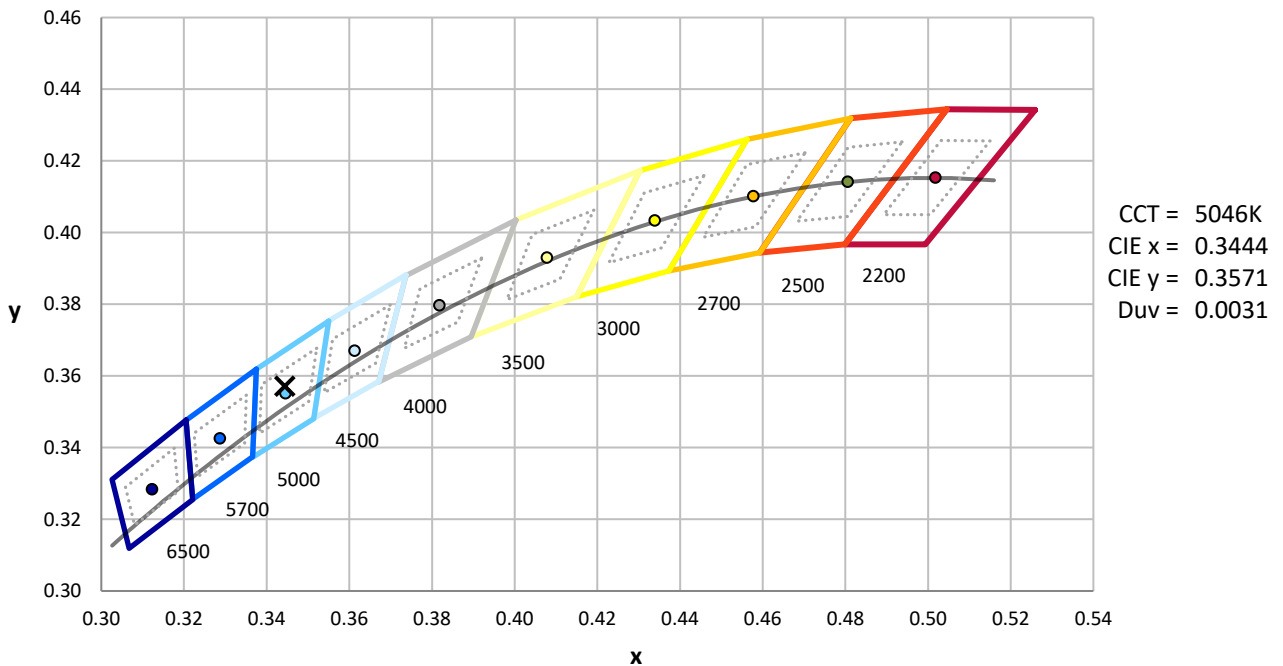
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



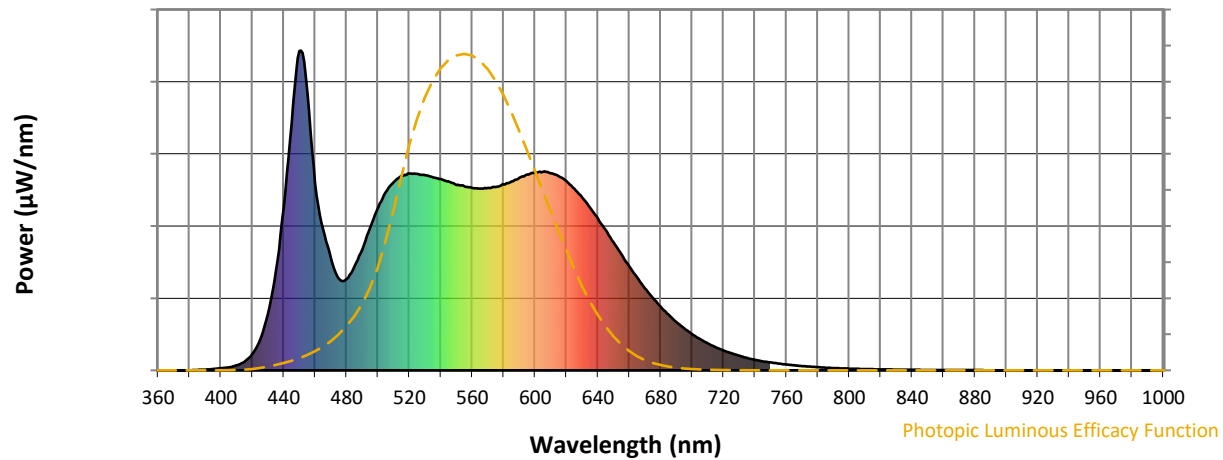
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

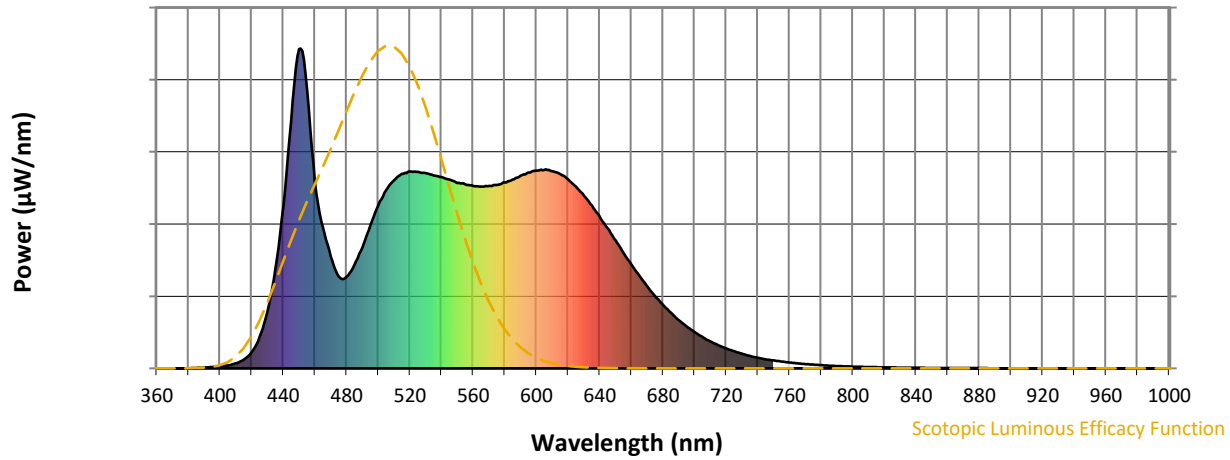


### Photopic Lumens: NR

| $\lambda$<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               | 379                                  | NR                             | 620               | 592                                  | NR                             | 750               | 25                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 445                                  | NR                             | 625               | 568                                  | NR                             | 755               | 21                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 509                                  | NR                             | 630               | 540                                  | NR                             | 760               | 18                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 557                                  | NR                             | 635               | 509                                  | NR                             | 765               | 16                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 589                                  | NR                             | 640               | 476                                  | NR                             | 770               | 13                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 608                                  | NR                             | 645               | 439                                  | NR                             | 775               | 12                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 616                                  | NR                             | 650               | 400                                  | NR                             | 780               | 10                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 614                                  | NR                             | 655               | 362                                  | NR                             | 785               | 8                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 7                                    | NR                             | 530               | 611                                  | NR                             | 660               | 325                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 9                                    | NR                             | 535               | 604                                  | NR                             | 665               | 290                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 598                                  | NR                             | 670               | 257                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 27                                   | NR                             | 545               | 591                                  | NR                             | 675               | 227                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 51                                   | NR                             | 550               | 580                                  | NR                             | 680               | 199                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 97                                   | NR                             | 555               | 575                                  | NR                             | 685               | 174                                  | NR                             | 815               | 4                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 177                                  | NR                             | 560               | 570                                  | NR                             | 690               | 152                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 312                                  | NR                             | 565               | 569                                  | NR                             | 695               | 131                                  | NR                             | 825               | 3                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 507                                  | NR                             | 570               | 570                                  | NR                             | 700               | 113                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 772                                  | NR                             | 575               | 573                                  | NR                             | 705               | 98                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 998                                  | NR                             | 580               | 581                                  | NR                             | 710               | 84                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 871                                  | NR                             | 585               | 590                                  | NR                             | 715               | 73                                   | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 586                                  | NR                             | 590               | 602                                  | NR                             | 720               | 63                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 443                                  | NR                             | 595               | 612                                  | NR                             | 725               | 54                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 350                                  | NR                             | 600               | 618                                  | NR                             | 730               | 46                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 288                                  | NR                             | 605               | 620                                  | NR                             | 735               | 39                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 286                                  | NR                             | 610               | 616                                  | NR                             | 740               | 33                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 325                                  | NR                             | 615               | 608                                  | NR                             | 745               | 28                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



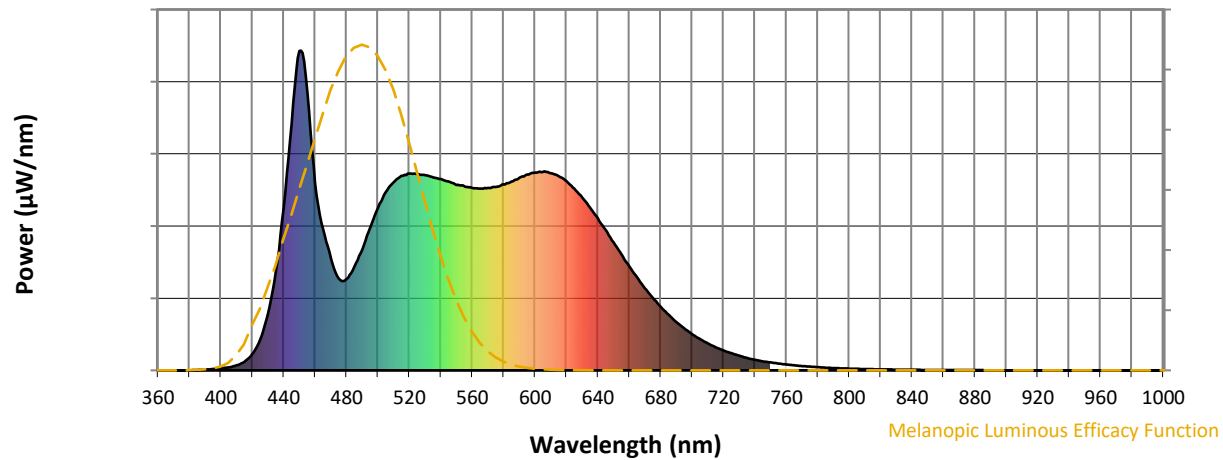
Scotopic Lumens: NR

S/P: 2.07

| 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       | 379                         | NR               | 620       | 592                         | NR               | 750       | 25                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 445                         | NR               | 625       | 568                         | NR               | 755       | 21                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 509                         | NR               | 630       | 540                         | NR               | 760       | 18                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 557                         | NR               | 635       | 509                         | NR               | 765       | 16                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 589                         | NR               | 640       | 476                         | NR               | 770       | 13                          | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 608                         | NR               | 645       | 439                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 616                         | NR               | 650       | 400                         | NR               | 780       | 10                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 614                         | NR               | 655       | 362                         | NR               | 785       | 8                           | NR               | 915       | 0                           | NR               |
| 400       | 7                           | NR               | 530       | 611                         | NR               | 660       | 325                         | NR               | 790       | 7                           | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 604                         | NR               | 665       | 290                         | NR               | 795       | 6                           | NR               | 925       | 0                           | NR               |
| 410       | 16                          | NR               | 540       | 598                         | NR               | 670       | 257                         | NR               | 800       | 5                           | NR               | 930       | 0                           | NR               |
| 415       | 27                          | NR               | 545       | 591                         | NR               | 675       | 227                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 51                          | NR               | 550       | 580                         | NR               | 680       | 199                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 97                          | NR               | 555       | 575                         | NR               | 685       | 174                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 177                         | NR               | 560       | 570                         | NR               | 690       | 152                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 312                         | NR               | 565       | 569                         | NR               | 695       | 131                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 507                         | NR               | 570       | 570                         | NR               | 700       | 113                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 772                         | NR               | 575       | 573                         | NR               | 705       | 98                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 998                         | NR               | 580       | 581                         | NR               | 710       | 84                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 871                         | NR               | 585       | 590                         | NR               | 715       | 73                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 586                         | NR               | 590       | 602                         | NR               | 720       | 63                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 443                         | NR               | 595       | 612                         | NR               | 725       | 54                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 350                         | NR               | 600       | 618                         | NR               | 730       | 46                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 288                         | NR               | 605       | 620                         | NR               | 735       | 39                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 286                         | NR               | 610       | 616                         | NR               | 740       | 33                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 325                         | NR               | 615       | 608                         | NR               | 745       | 28                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.43

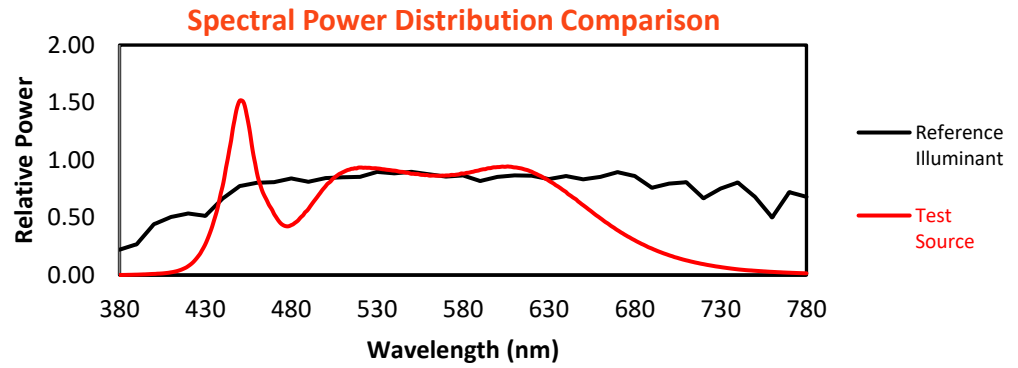
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 379                                    | NR                             | 620               | 592                                    | NR                             | 750               | 25                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 445                                    | NR                             | 625               | 568                                    | NR                             | 755               | 21                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 509                                    | NR                             | 630               | 540                                    | NR                             | 760               | 18                                     | NR                             | 890               | 0                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 557                                    | NR                             | 635               | 509                                    | NR                             | 765               | 16                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 589                                    | NR                             | 640               | 476                                    | NR                             | 770               | 13                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 1                                      | NR                             | 515               | 608                                    | NR                             | 645               | 439                                    | NR                             | 775               | 12                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 2                                      | NR                             | 520               | 616                                    | NR                             | 650               | 400                                    | NR                             | 780               | 10                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 4                                      | NR                             | 525               | 614                                    | NR                             | 655               | 362                                    | NR                             | 785               | 8                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 7                                      | NR                             | 530               | 611                                    | NR                             | 660               | 325                                    | NR                             | 790               | 7                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 9                                      | NR                             | 535               | 604                                    | NR                             | 665               | 290                                    | NR                             | 795               | 6                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 16                                     | NR                             | 540               | 598                                    | NR                             | 670               | 257                                    | NR                             | 800               | 5                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 27                                     | NR                             | 545               | 591                                    | NR                             | 675               | 227                                    | NR                             | 805               | 5                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 51                                     | NR                             | 550               | 580                                    | NR                             | 680               | 199                                    | NR                             | 810               | 4                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 97                                     | NR                             | 555               | 575                                    | NR                             | 685               | 174                                    | NR                             | 815               | 4                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 177                                    | NR                             | 560               | 570                                    | NR                             | 690               | 152                                    | NR                             | 820               | 3                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 312                                    | NR                             | 565               | 569                                    | NR                             | 695               | 131                                    | NR                             | 825               | 3                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 507                                    | NR                             | 570               | 570                                    | NR                             | 700               | 113                                    | NR                             | 830               | 2                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 772                                    | NR                             | 575               | 573                                    | NR                             | 705               | 98                                     | NR                             | 835               | 2                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 998                                    | NR                             | 580               | 581                                    | NR                             | 710               | 84                                     | NR                             | 840               | 2                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 871                                    | NR                             | 585               | 590                                    | NR                             | 715               | 73                                     | NR                             | 845               | 2                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 586                                    | NR                             | 590               | 602                                    | NR                             | 720               | 63                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 443                                    | NR                             | 595               | 612                                    | NR                             | 725               | 54                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 350                                    | NR                             | 600               | 618                                    | NR                             | 730               | 46                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 288                                    | NR                             | 605               | 620                                    | NR                             | 735               | 39                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 286                                    | NR                             | 610               | 616                                    | NR                             | 740               | 33                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 325                                    | NR                             | 615               | 608                                    | NR                             | 745               | 28                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

REPORT NUMBER: SP1-2504-409-15

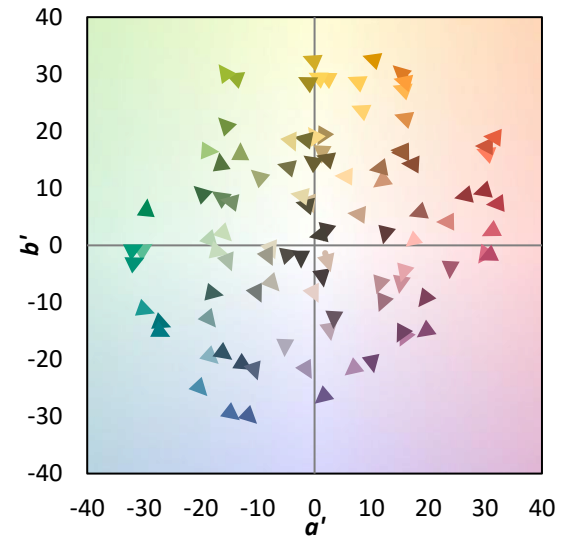
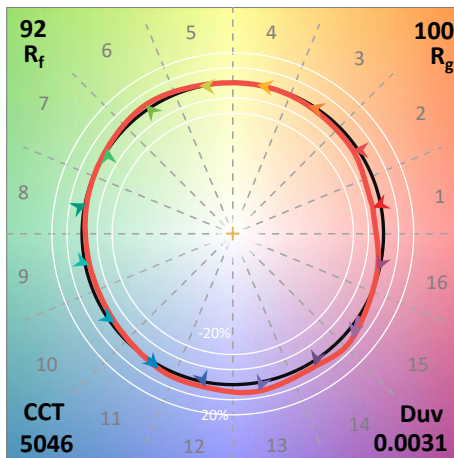
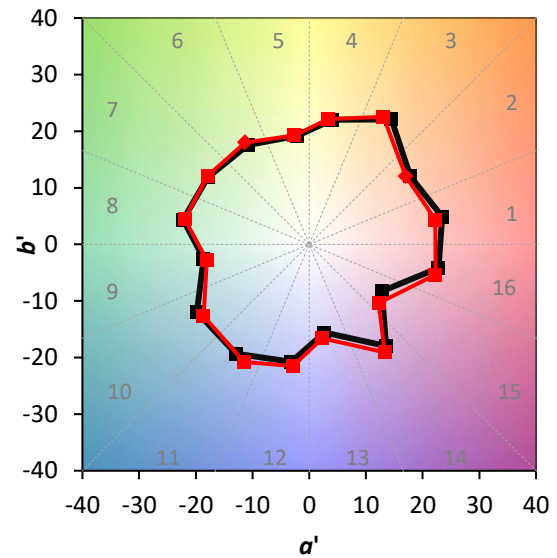
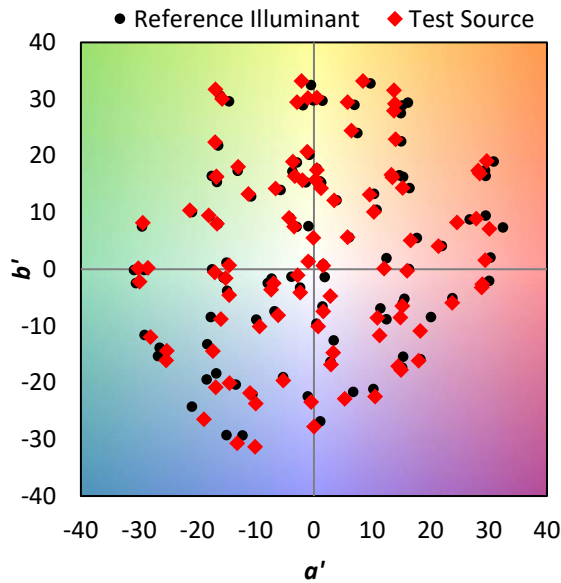
TM-30-18

### Summary

$R_f = 91.5$   
 $R_g = 100.4$   
 $CIE R_a = 92.6$   
 $R_9 = 54.8$

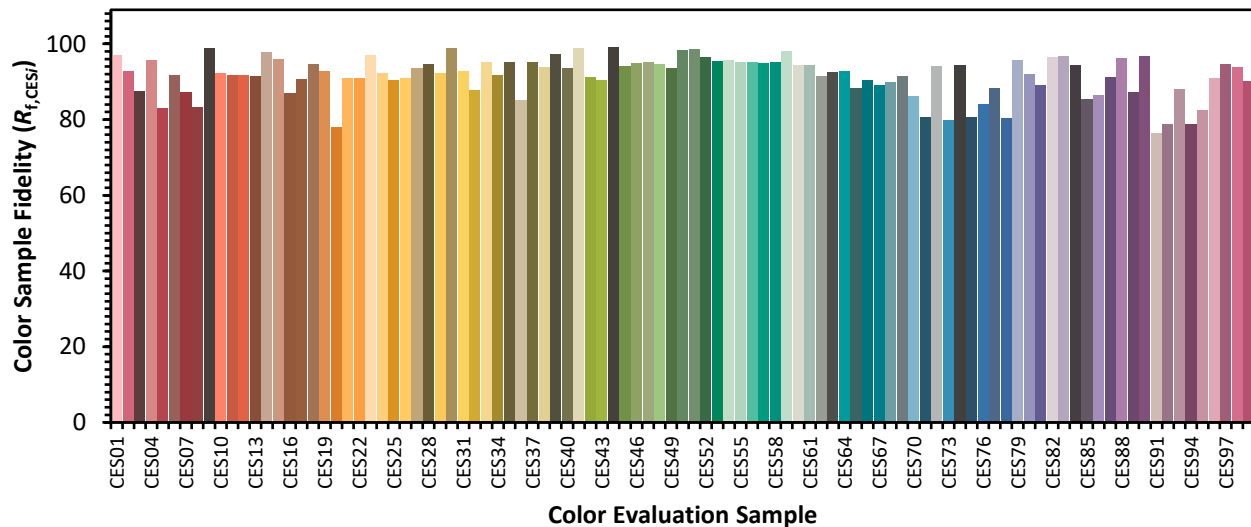


### Color Vector Graphics

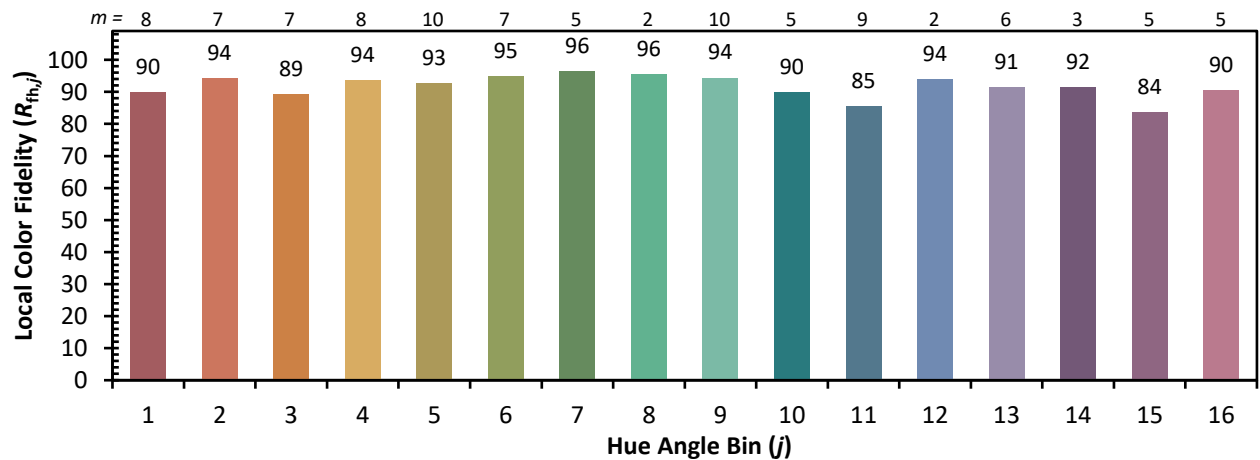
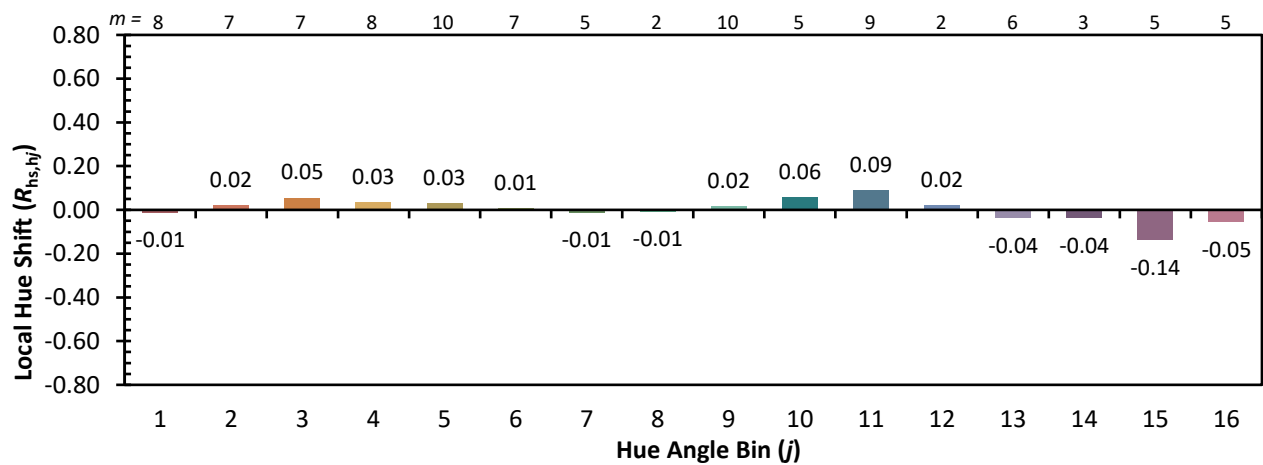
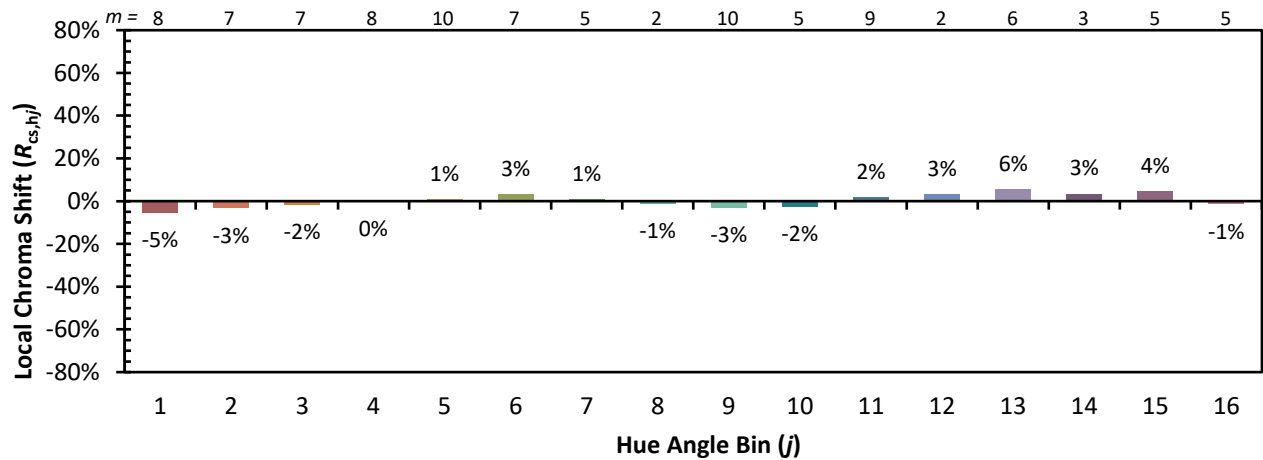


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 91 | CES51 = 99 | CES76 = 84 |
| CES02 = 60 | CES27 = 94 | CES52 = 96 | CES77 = 88 |
| CES03 = 31 | CES28 = 95 | CES53 = 95 | CES78 = 80 |
| CES04 = 68 | CES29 = 92 | CES54 = 96 | CES79 = 96 |
| CES05 = 47 | CES30 = 99 | CES55 = 95 | CES80 = 92 |
| CES06 = 50 | CES31 = 93 | CES56 = 95 | CES81 = 89 |
| CES07 = 40 | CES32 = 88 | CES57 = 95 | CES82 = 96 |
| CES08 = 40 | CES33 = 95 | CES58 = 95 | CES83 = 97 |
| CES09 = 29 | CES34 = 92 | CES59 = 98 | CES84 = 94 |
| CES10 = 73 | CES35 = 95 | CES60 = 94 | CES85 = 85 |
| CES11 = 56 | CES36 = 85 | CES61 = 94 | CES86 = 87 |
| CES12 = 62 | CES37 = 95 | CES62 = 91 | CES87 = 91 |
| CES13 = 42 | CES38 = 94 | CES63 = 93 | CES88 = 96 |
| CES14 = 74 | CES39 = 97 | CES64 = 93 | CES89 = 87 |
| CES15 = 71 | CES40 = 94 | CES65 = 88 | CES90 = 97 |
| CES16 = 46 | CES41 = 99 | CES66 = 90 | CES91 = 76 |
| CES17 = 48 | CES42 = 91 | CES67 = 89 | CES92 = 79 |
| CES18 = 56 | CES43 = 90 | CES68 = 90 | CES93 = 88 |
| CES19 = 70 | CES44 = 99 | CES69 = 91 | CES94 = 79 |
| CES20 = 65 | CES45 = 94 | CES70 = 86 | CES95 = 83 |
| CES21 = 84 | CES46 = 95 | CES71 = 81 | CES96 = 91 |
| CES22 = 77 | CES47 = 95 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 95 | CES73 = 80 | CES98 = 94 |
| CES24 = 89 | CES49 = 94 | CES74 = 94 | CES99 = 90 |
| CES25 = 70 | CES50 = 98 | CES75 = 81 |            |

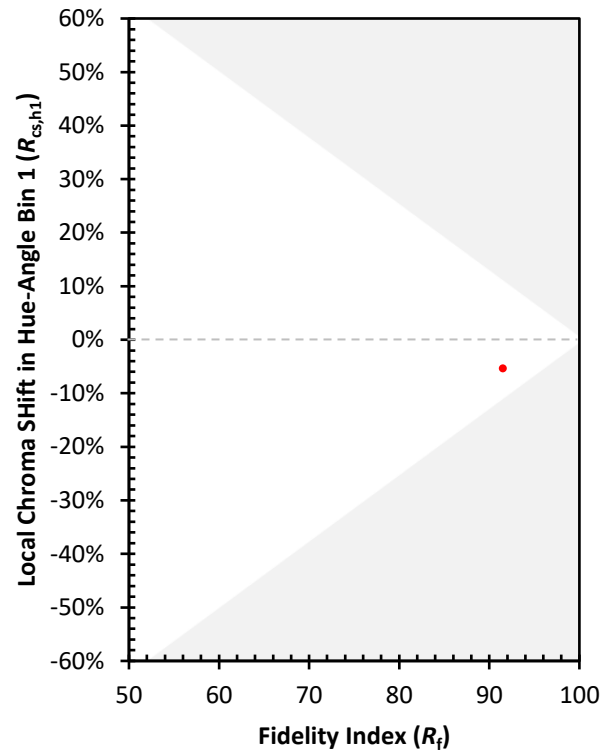
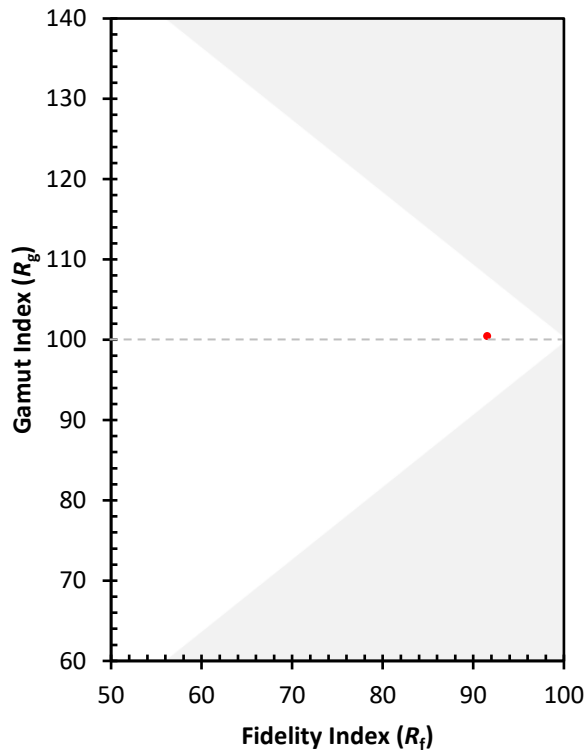


Color Rendition by Hue-Angle Bin





**Measure Comparisons**



(END OF REPORT)