

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: P1258542

Luminaire Tested: P3A24R459040D010 E3DLP1WMH

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1258542  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2601-647-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/30/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A24R459040D010 E3DLP1WMH  
Description: 3in Adjustable LED luminaire with, R45 optic, 4000K CCT AND, 90CRI , E3DLP1WMH TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

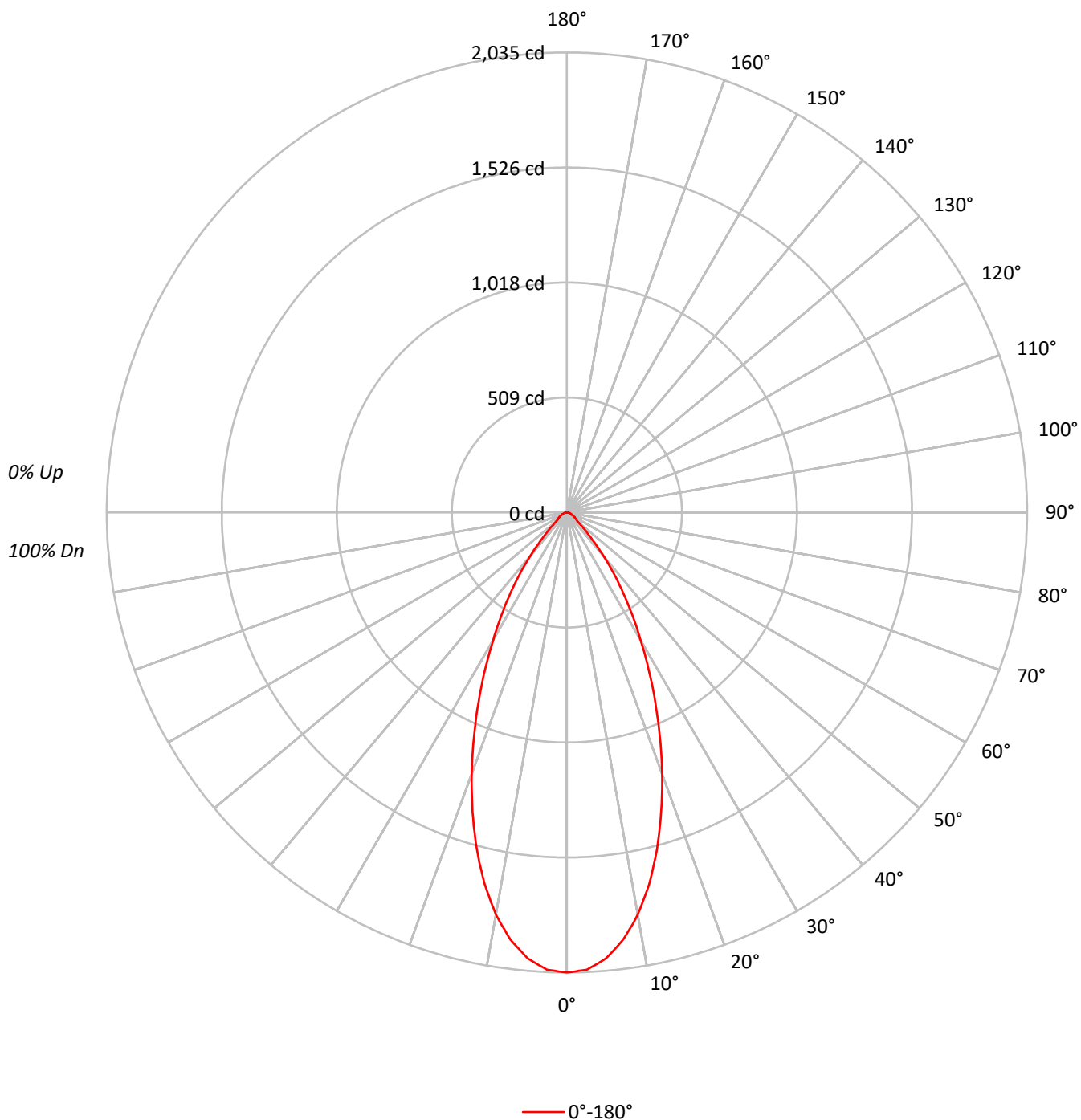
Lumens per Lamp: N/A  
Luminaire Lumens: 1498.0 lumens  
Efficiency: N/A  
Efficacy: 52.0 lumens/watt  
Spacing Criteria (0/90/45): 0.73 / 0.73 / 0.76  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

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: P1258542

CATALOG NUMBER: P3A24R459040D010 E3DLP1WMH

### Luminous Intensity Polar Plot



TEST NUMBER: P1258542

CATALOG NUMBER: P3A24R459040D010 E3DLP1WMH

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

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 113 | 110 | 107 | 105 | 111 | 108 | 106 | 103 | 104 | 102 | 100 |  | 100 | 99  | 97  |  | 97  |
| 2   | 107 | 102 | 98  | 94  | 105 | 100 | 96  | 93  | 97  | 94  | 91  |  | 94  | 91  | 89  |  | 91  |
| 3   | 102 | 95  | 90  | 85  | 100 | 93  | 89  | 85  | 91  | 87  | 83  |  | 88  | 85  | 82  |  | 86  |
| 4   | 96  | 88  | 83  | 78  | 94  | 87  | 82  | 78  | 85  | 81  | 77  |  | 83  | 79  | 76  |  | 81  |
| 5   | 91  | 83  | 77  | 72  | 90  | 82  | 76  | 72  | 80  | 75  | 71  |  | 78  | 74  | 71  |  | 77  |
| 6   | 87  | 78  | 72  | 67  | 85  | 77  | 71  | 67  | 75  | 70  | 66  |  | 74  | 69  | 66  |  | 73  |
| 7   | 83  | 73  | 67  | 63  | 81  | 72  | 67  | 63  | 71  | 66  | 62  |  | 70  | 65  | 62  |  | 69  |
| 8   | 79  | 69  | 63  | 59  | 77  | 68  | 63  | 59  | 67  | 62  | 58  |  | 66  | 62  | 58  |  | 65  |
| 9   | 75  | 65  | 59  | 55  | 74  | 65  | 59  | 55  | 64  | 59  | 55  |  | 63  | 58  | 55  |  | 62  |
| 10  | 72  | 62  | 56  | 52  | 71  | 61  | 56  | 52  | 61  | 55  | 52  |  | 60  | 55  | 52  |  | 59  |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 446192 |
| 5°  | 436010 |
| 10° | 402219 |
| 15° | 349741 |
| 20° | 287328 |
| 25° | 223561 |
| 30° | 165089 |
| 35° | 116178 |
| 40° | 72507  |
| 45° | 39291  |
| 50° | 21253  |
| 55° | 18274  |
| 60° | 16402  |
| 65° | 14009  |
| 70° | 11989  |
| 75° | 12285  |
| 80° | 10481  |
| 85° | 10567  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 39291 cd/sqm

TEST NUMBER: P1258542

CATALOG NUMBER: P3A24R459040D010 E3DLP1WMH

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 183.5  | 12.2      |
| 10°-20°   | 425.9  | 28.4      |
| 20°-30°   | 422.8  | 28.2      |
| 30°-40°   | 272.3  | 18.2      |
| 40°-50°   | 104.9  | 7.0       |
| 50°-60°   | 42.7   | 2.8       |
| 60°-70°   | 26.9   | 1.8       |
| 70°-80°   | 14.5   | 1.0       |
| 80°-90°   | 4.5    | 0.3       |
| 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°    | 1032.2 | 68.9      |
| 0°-40°    | 1304.5 | 87.1      |
| 0°-60°    | 1452.1 | 96.9      |
| 0°-90°    | 1498.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1498.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 2035 |      |
| 5°  | 1981 | 183  |
| 15° | 1541 | 426  |
| 25° | 924  | 423  |
| 35° | 434  | 272  |
| 45° | 127  | 105  |
| 55° | 48   | 43   |
| 65° | 27   | 27   |
| 75° | 14   | 15   |
| 85° | 4    | 5    |
| 90° | 0    |      |

TEST NUMBER: P1258542

CATALOG NUMBER: P3A24R459040D010 E3DLP1WMH

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 2034.8 |
| 2.5°  | 2024.4 |
| 5°    | 1980.8 |
| 7.5°  | 1906.1 |
| 10°   | 1806.4 |
| 12.5° | 1681.8 |
| 15°   | 1540.6 |
| 17.5° | 1387.0 |
| 20°   | 1231.3 |
| 22.5° | 1073.5 |
| 25°   | 924.0  |
| 27.5° | 782.8  |
| 30°   | 652.0  |
| 32.5° | 537.8  |
| 35°   | 434.0  |
| 37.5° | 340.5  |
| 40°   | 253.3  |
| 42.5° | 182.7  |
| 45°   | 126.7  |
| 47.5° | 85.1   |
| 50°   | 62.3   |
| 52.5° | 51.9   |
| 55°   | 47.8   |
| 57.5° | 41.5   |
| 60°   | 37.4   |
| 62.5° | 31.1   |
| 65°   | 27.0   |
| 67.5° | 22.8   |
| 70°   | 18.7   |
| 72.5° | 16.6   |
| 75°   | 14.5   |
| 77.5° | 10.4   |
| 80°   | 8.3    |
| 82.5° | 6.2    |
| 85°   | 4.2    |
| 87.5° | 2.1    |
| 90°   | 0.0    |

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

Report Prepared for

Cooper Lighting Solutions

IRiS

Report Number: SP1-2504-409-14

Test Date: 05/14/2025

Luminaire Tested: LD3A05R129040D010 E3D1H

Data in this report applies to families of products including LD3A

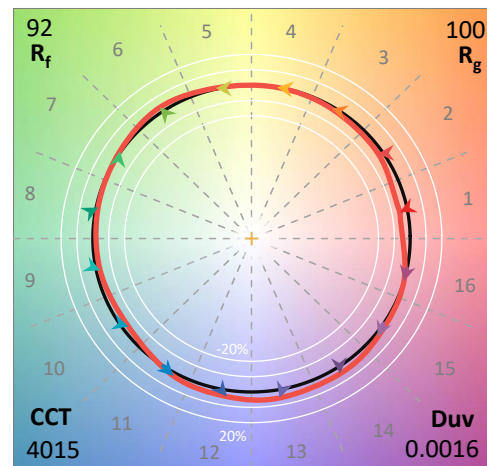
### Test Information

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

### Spectral Parameters

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

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



### Test Conditions

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

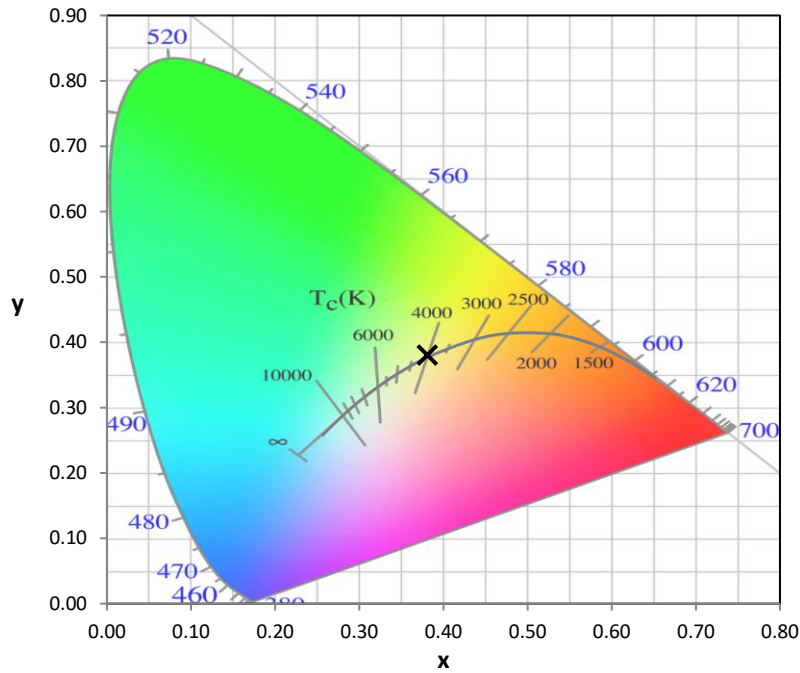


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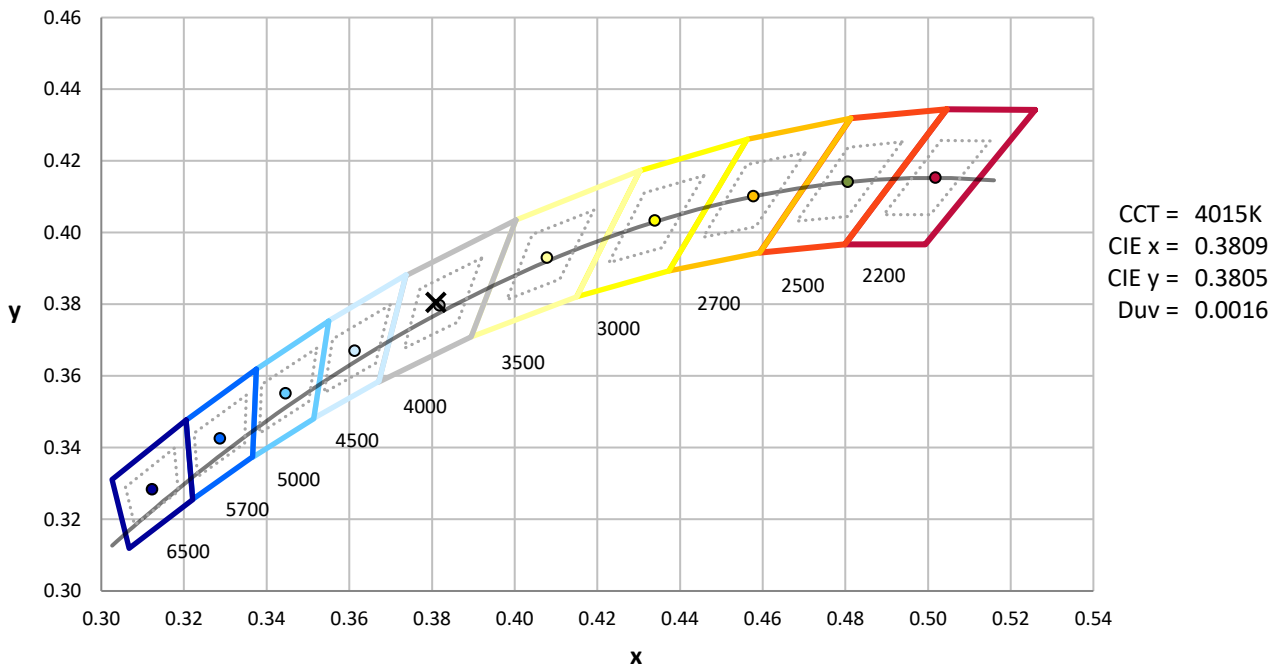
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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



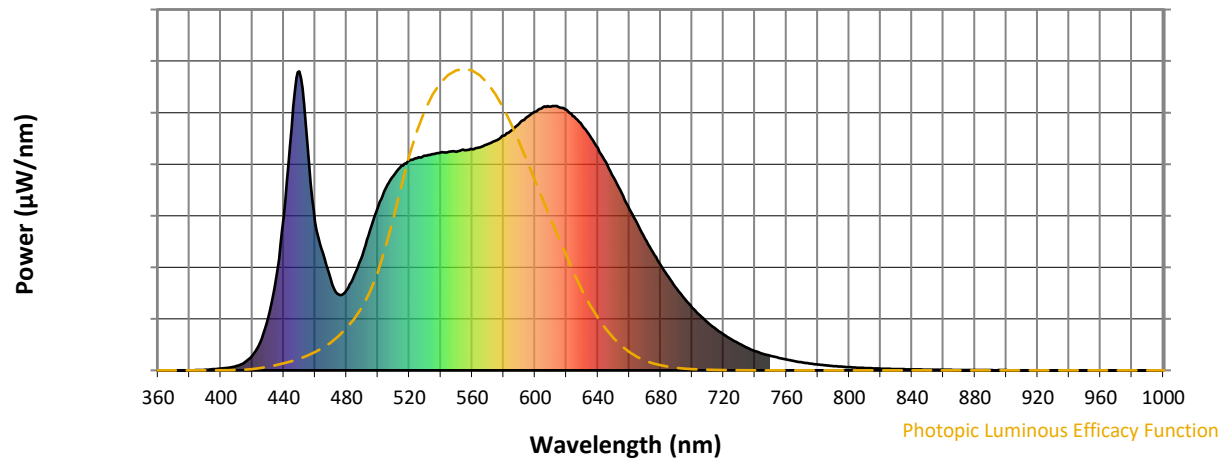
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

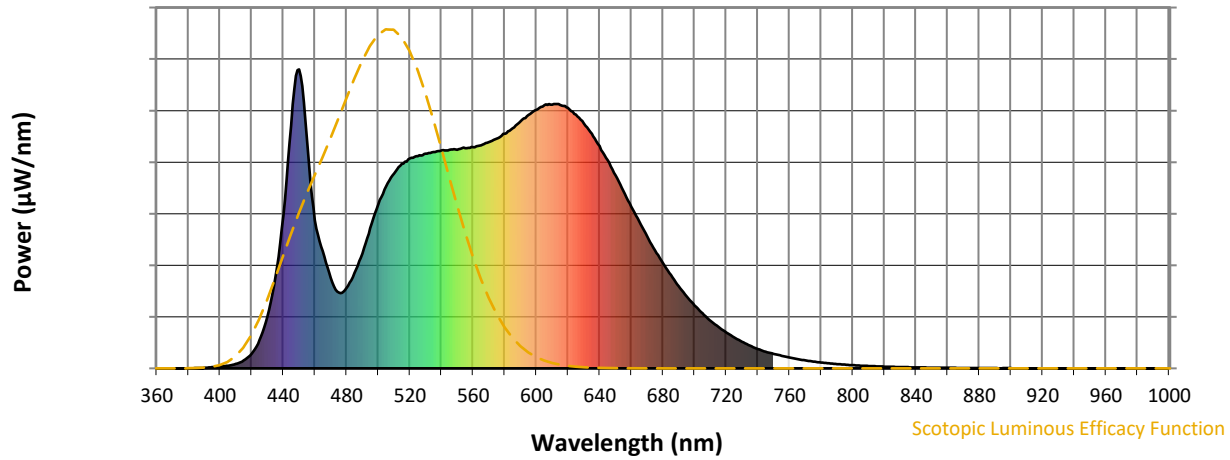


### Photopic Lumens: NR

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

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### Scotopic Flux vs. Wavelength



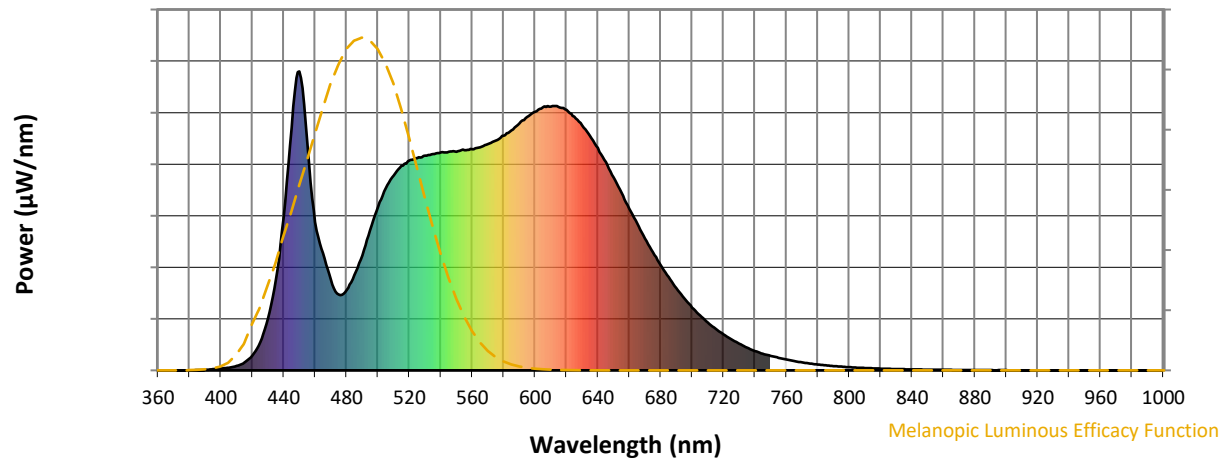
Scotopic Lumens: NR

S/P: 1.77

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

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 3.62**

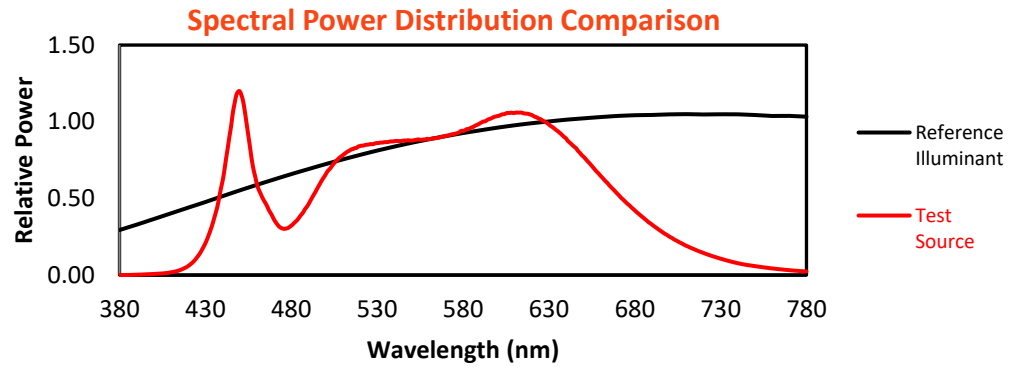
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 385                                  | NR                             | 620               | 871                                  | NR                             | 750               | 49                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 468                                  | NR                             | 625               | 849                                  | NR                             | 755               | 42                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 547                                  | NR                             | 630               | 819                                  | NR                             | 760               | 36                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 609                                  | NR                             | 635               | 784                                  | NR                             | 765               | 31                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 652                                  | NR                             | 640               | 744                                  | NR                             | 770               | 27                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 684                                  | NR                             | 645               | 697                                  | NR                             | 775               | 23                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 702                                  | NR                             | 650               | 645                                  | NR                             | 780               | 20                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 710                                  | NR                             | 655               | 594                                  | NR                             | 785               | 17                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 718                                  | NR                             | 660               | 541                                  | NR                             | 790               | 14                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 9                                    | NR                             | 535               | 723                                  | NR                             | 665               | 491                                  | NR                             | 795               | 12                                   | NR                             | 925               | 0                                    | NR                             |
| 410               | 15                                   | NR                             | 540               | 729                                  | NR                             | 670               | 441                                  | NR                             | 800               | 11                                   | NR                             | 930               | 0                                    | NR                             |
| 415               | 26                                   | NR                             | 545               | 731                                  | NR                             | 675               | 395                                  | NR                             | 805               | 9                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 49                                   | NR                             | 550               | 731                                  | NR                             | 680               | 352                                  | NR                             | 810               | 8                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 95                                   | NR                             | 555               | 736                                  | NR                             | 685               | 312                                  | NR                             | 815               | 7                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 173                                  | NR                             | 560               | 740                                  | NR                             | 690               | 275                                  | NR                             | 820               | 6                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 305                                  | NR                             | 565               | 746                                  | NR                             | 695               | 241                                  | NR                             | 825               | 5                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 511                                  | NR                             | 570               | 757                                  | NR                             | 700               | 210                                  | NR                             | 830               | 4                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 811                                  | NR                             | 575               | 768                                  | NR                             | 705               | 184                                  | NR                             | 835               | 4                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 1000                                 | NR                             | 580               | 785                                  | NR                             | 710               | 159                                  | NR                             | 840               | 3                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 760                                  | NR                             | 585               | 803                                  | NR                             | 715               | 139                                  | NR                             | 845               | 3                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 496                                  | NR                             | 590               | 826                                  | NR                             | 720               | 120                                  | NR                             | 850               | 3                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 392                                  | NR                             | 595               | 848                                  | NR                             | 725               | 104                                  | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 302                                  | NR                             | 600               | 865                                  | NR                             | 730               | 89                                   | NR                             | 860               | 2                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 253                                  | NR                             | 605               | 879                                  | NR                             | 735               | 76                                   | NR                             | 865               | 2                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 269                                  | NR                             | 610               | 882                                  | NR                             | 740               | 65                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 319                                  | NR                             | 615               | 881                                  | NR                             | 745               | 55                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2504-409-14

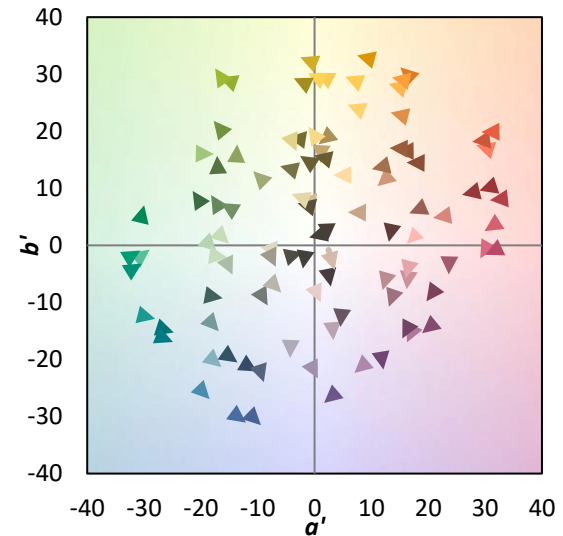
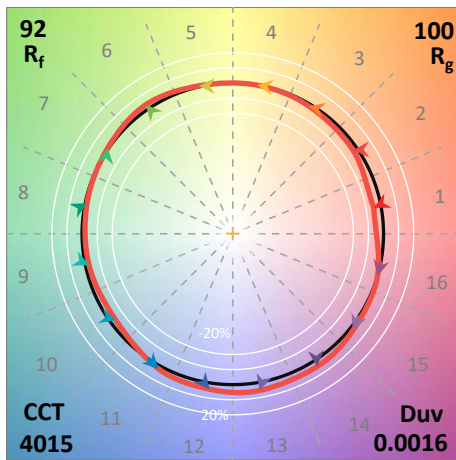
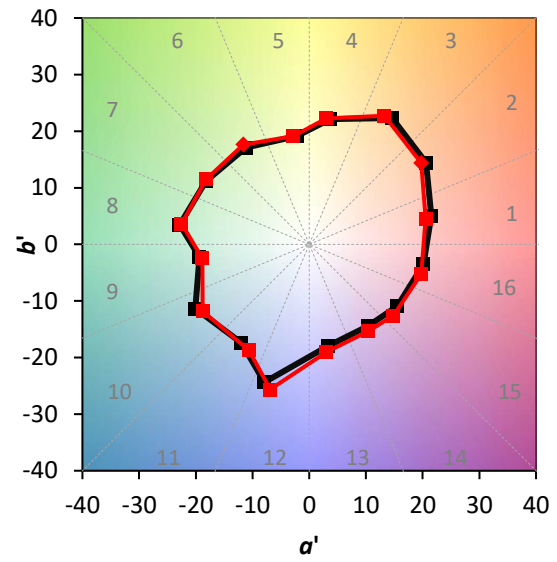
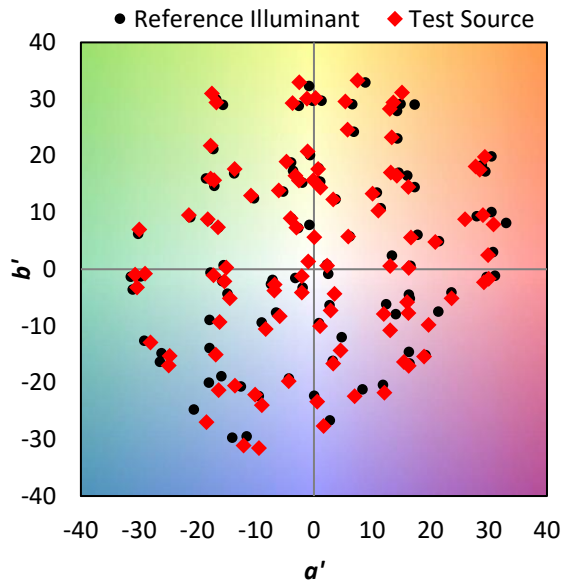
TM-30-18

### Summary

$R_f = 91.5$   
 $R_g = 100.3$   
 CIE  $R_a = 92.3$   
 $R_g = 58.4$

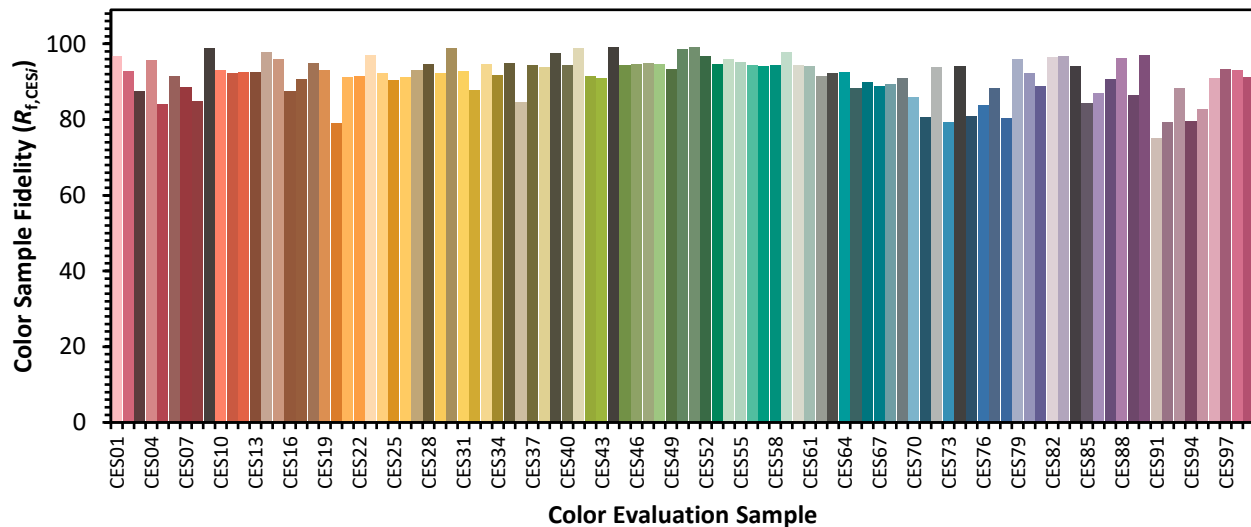


### Color Vector Graphics

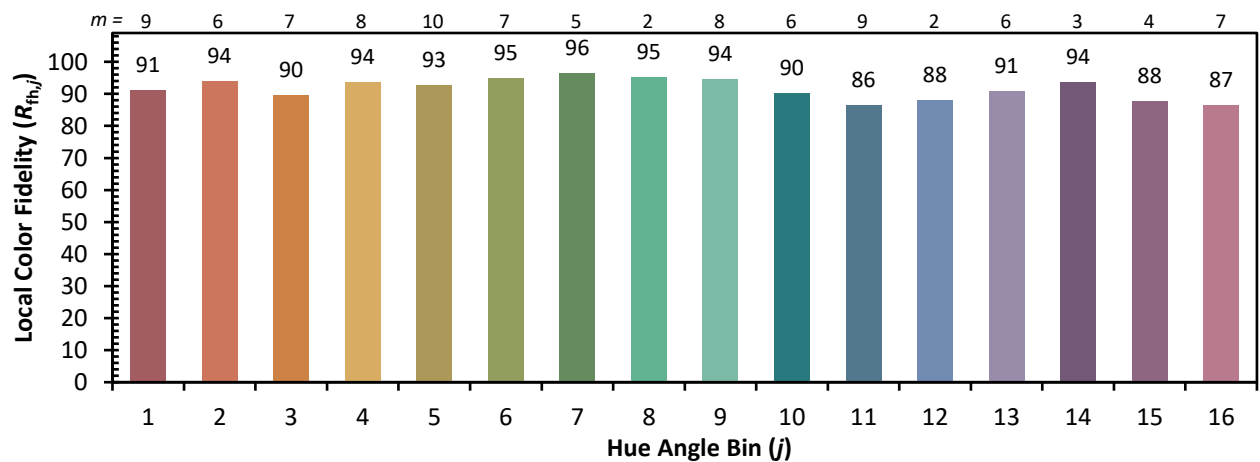
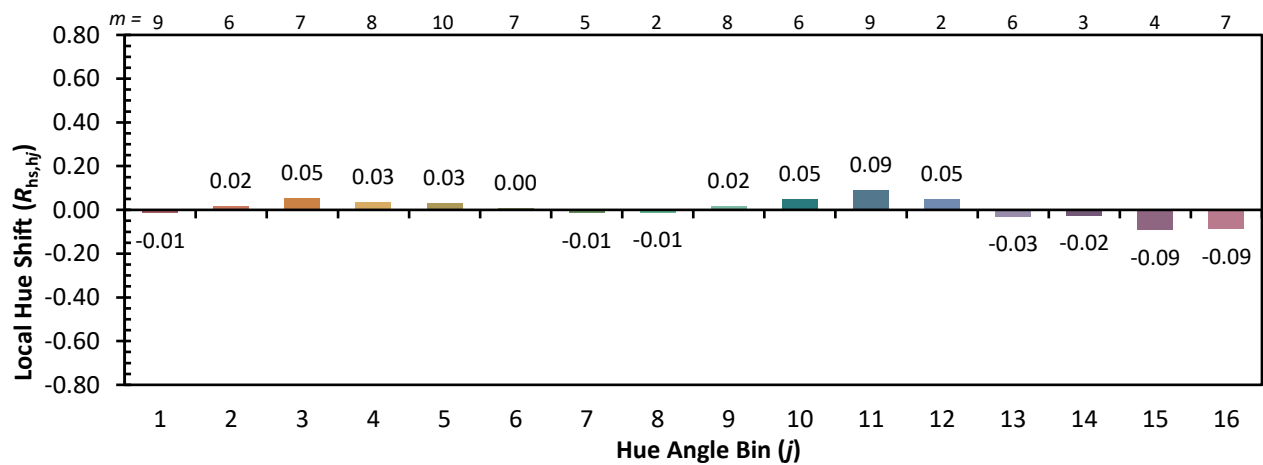
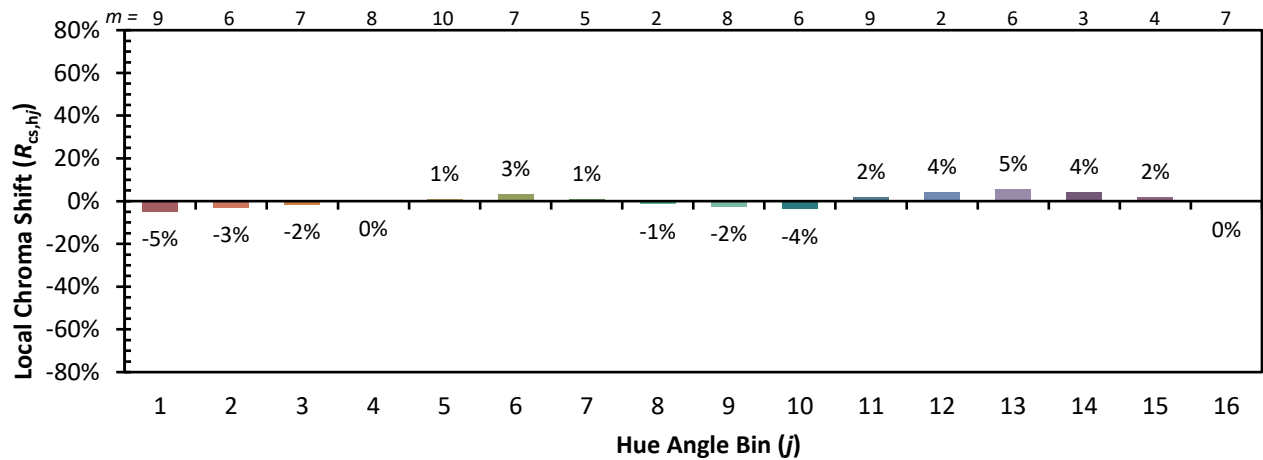


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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

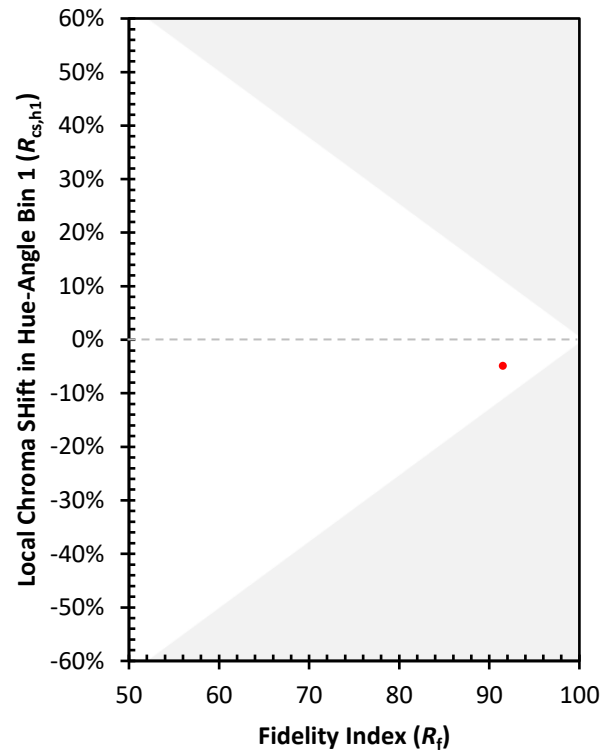
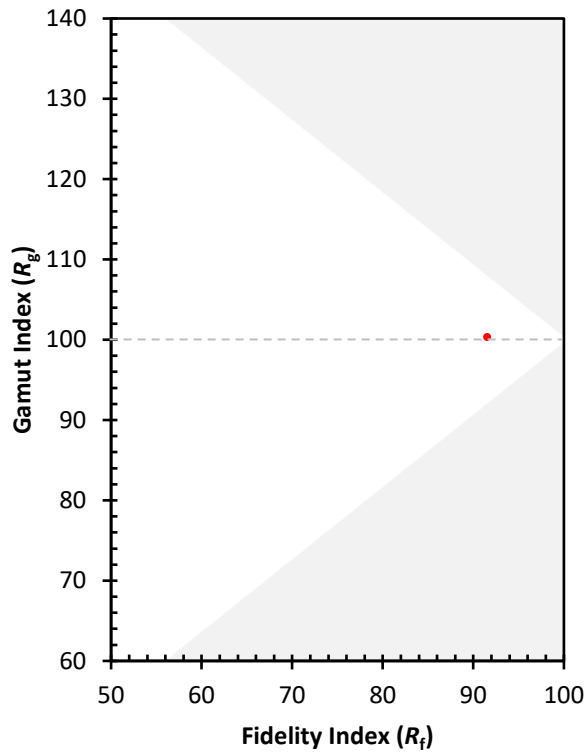


Color Rendition by Hue-Angle Bin





**Measure Comparisons**



(END OF REPORT)