

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: P1253079

Luminaire Tested: P3A24R409030D010 E3CD1MMS

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1253079  
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: P3A24R409030D010 E3CD1MMS  
Description: 3in Adjustable LED luminaire with, R40 optic, 3000K CCT AND, 90CRI , E3CD1MMS TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

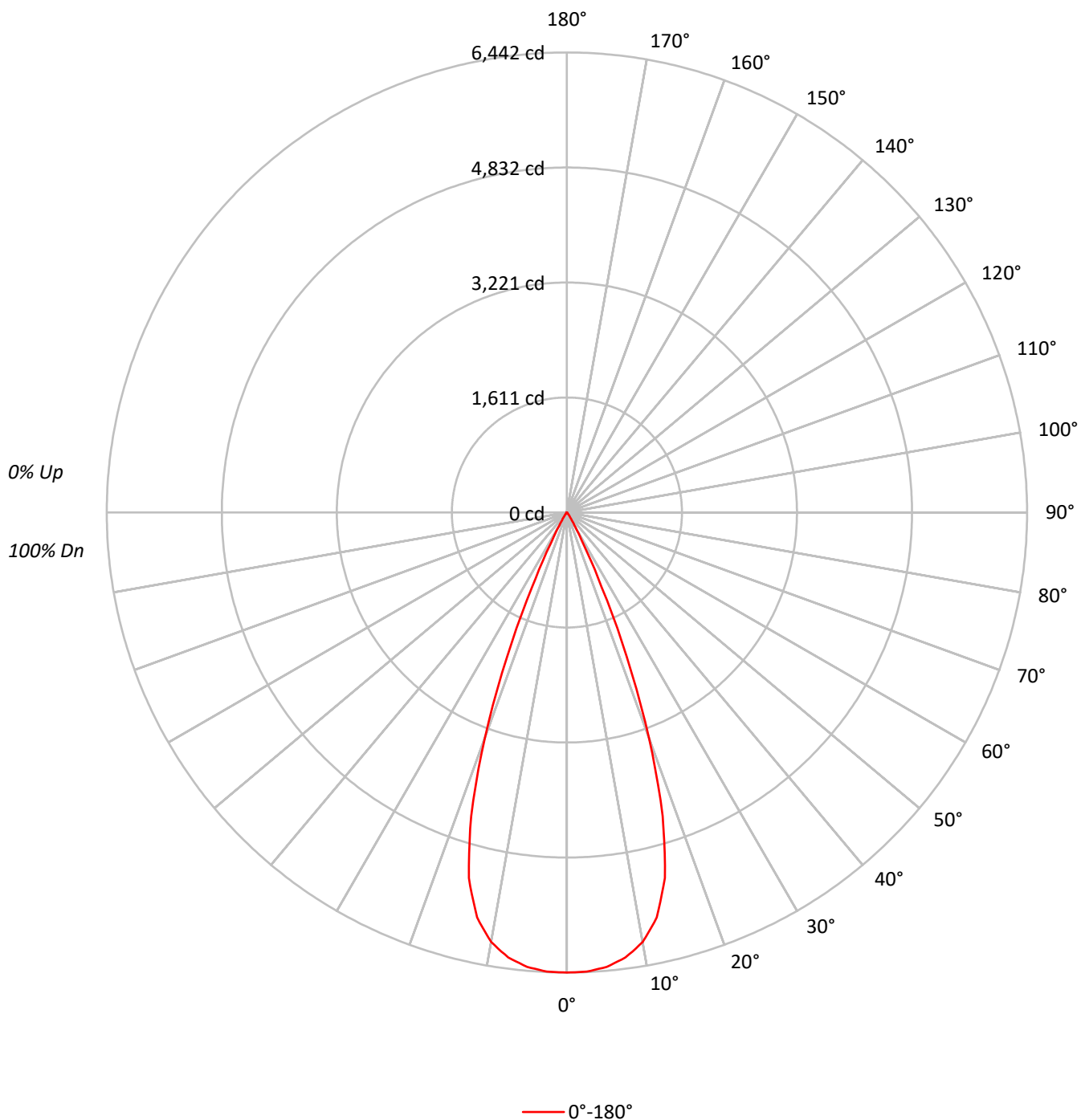
Lumens per Lamp: N/A  
Luminaire Lumens: 2682.9 lumens  
Efficiency: N/A  
Efficacy: 93.2 lumens/watt  
Spacing Criteria (0/90/45): 0.69 / 0.69 / 0.59  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

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: P1253079

CATALOG NUMBER: P3A24R409030D010 E3CD1MMS

### Luminous Intensity Polar Plot



TEST NUMBER: P1253079

CATALOG NUMBER: P3A24R409030D010 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°  | 1412672 |
| 5°  | 1405874 |
| 10° | 1360051 |
| 15° | 1203299 |
| 20° | 785072  |
| 25° | 278121  |
| 30° | 58971   |
| 35° | 19434   |
| 40° | 7099    |
| 45° | 2357    |
| 50° | 1944    |
| 55° | 2179    |
| 60° | 1667    |
| 65° | 1972    |
| 70° | 1218    |
| 75° | 1610    |
| 80° | 2399    |
| 85° | 0       |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 82.5°

Luminance: 3192 cd/sqm

TEST NUMBER: P1253079

CATALOG NUMBER: P3A24R409030D010 E3CD1MMS

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 601.0  | 22.4      |
| 10°-20°   | 1399.5 | 52.2      |
| 20°-30°   | 607.3  | 22.6      |
| 30°-40°   | 56.0   | 2.1       |
| 40°-50°   | 7.9    | 0.3       |
| 50°-60°   | 4.9    | 0.2       |
| 60°-70°   | 3.5    | 0.1       |
| 70°-80°   | 2.0    | 0.1       |
| 80°-90°   | 0.8    | 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°    | 2607.8 | 97.2      |
| 0°-40°    | 2663.8 | 99.3      |
| 0°-60°    | 2676.6 | 99.8      |
| 0°-90°    | 2682.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2682.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 6442 |      |
| 5°  | 6387 | 601  |
| 15° | 5300 | 1400 |
| 25° | 1150 | 607  |
| 35° | 73   | 56   |
| 45° | 8    | 8    |
| 55° | 6    | 5    |
| 65° | 4    | 4    |
| 75° | 2    | 2    |
| 85° | 0    | 1    |
| 90° | 0    |      |

TEST NUMBER: P1253079

CATALOG NUMBER: P3A24R409030D010 E3CD1MMS

**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 6442.3 |
| 2.5°  | 6434.6 |
| 5°    | 6386.9 |
| 7.5°  | 6285.7 |
| 10°   | 6108.1 |
| 12.5° | 5808.4 |
| 15°   | 5300.5 |
| 17.5° | 4458.4 |
| 20°   | 3364.3 |
| 22.5° | 2184.3 |
| 25°   | 1149.5 |
| 27.5° | 494.5  |
| 30°   | 232.9  |
| 32.5° | 126.0  |
| 35°   | 72.6   |
| 37.5° | 43.9   |
| 40°   | 24.8   |
| 42.5° | 13.4   |
| 45°   | 7.6    |
| 47.5° | 5.7    |
| 50°   | 5.7    |
| 52.5° | 5.7    |
| 55°   | 5.7    |
| 57.5° | 5.7    |
| 60°   | 3.8    |
| 62.5° | 3.8    |
| 65°   | 3.8    |
| 67.5° | 3.8    |
| 70°   | 1.9    |
| 72.5° | 1.9    |
| 75°   | 1.9    |
| 77.5° | 1.9    |
| 80°   | 1.9    |
| 82.5° | 1.9    |
| 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: SP1-2508-518-2

Test Date: 09/10/2025

Luminaire Tested: LD3A24R159030D010 E3D1LI

Data in this report applies to families of products including LD3A24R159030D010 E3D1LI

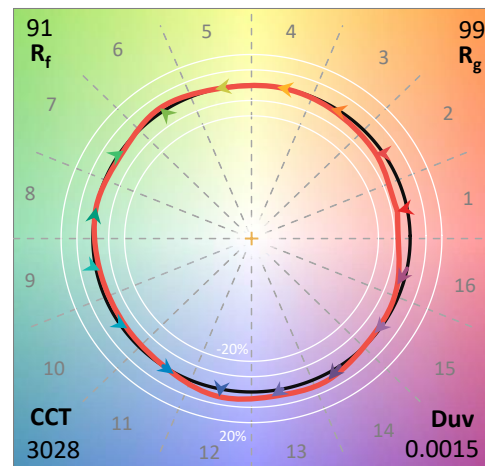
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2508-518-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 09/16/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: IRiS  
 Catalog Number: **LD3A24R159030D010 E3D1LI**  
 Description: 3in Adjustable LED luminaire with, R15 optic, 3000K CCT AND, 90CRI , E3D1LI TRIM

### Spectral Parameters

CCT (K): 3028  
 CIE  $u'$ : 0.2491  
 CIE  $v'$ : 0.5229  
 Duv: 0.0015  
 CIE x: 0.4371  
 CIE y: 0.4078  
 CIE z: 0.1551  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 582  
 Purity: 53.60472  
 R<sub>f</sub>: 90.8  
 R<sub>g</sub>: 98.9

CRI (Ra): 91.6  
 R1: 92.4  
 R2: 94.8  
 R3: 96.1  
 R4: 93.3  
 R5: 91.7  
 R6: 94.8  
 R7: 91.4  
 R8: 78.7  
 R9: 48.5  
 R10: 86.1  
 R11: 94.5  
 R12: 79.7  
 R13: 92.8  
 R14: 96.7  
 R15: 86.9



### Test Conditions

Stabilization Time: 65M  
 Operation Time: 2H 5M  
 Sphere Temperature (°C): 25.1

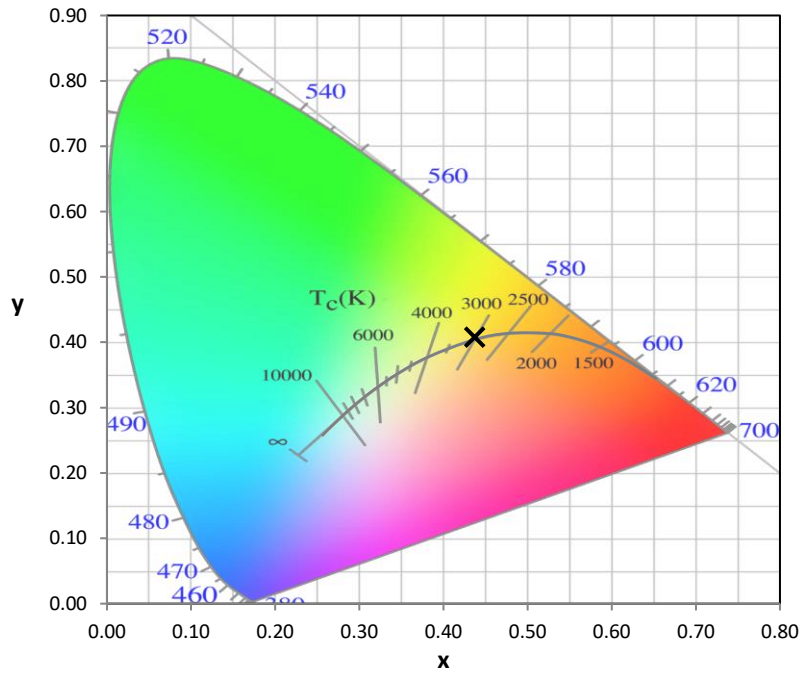


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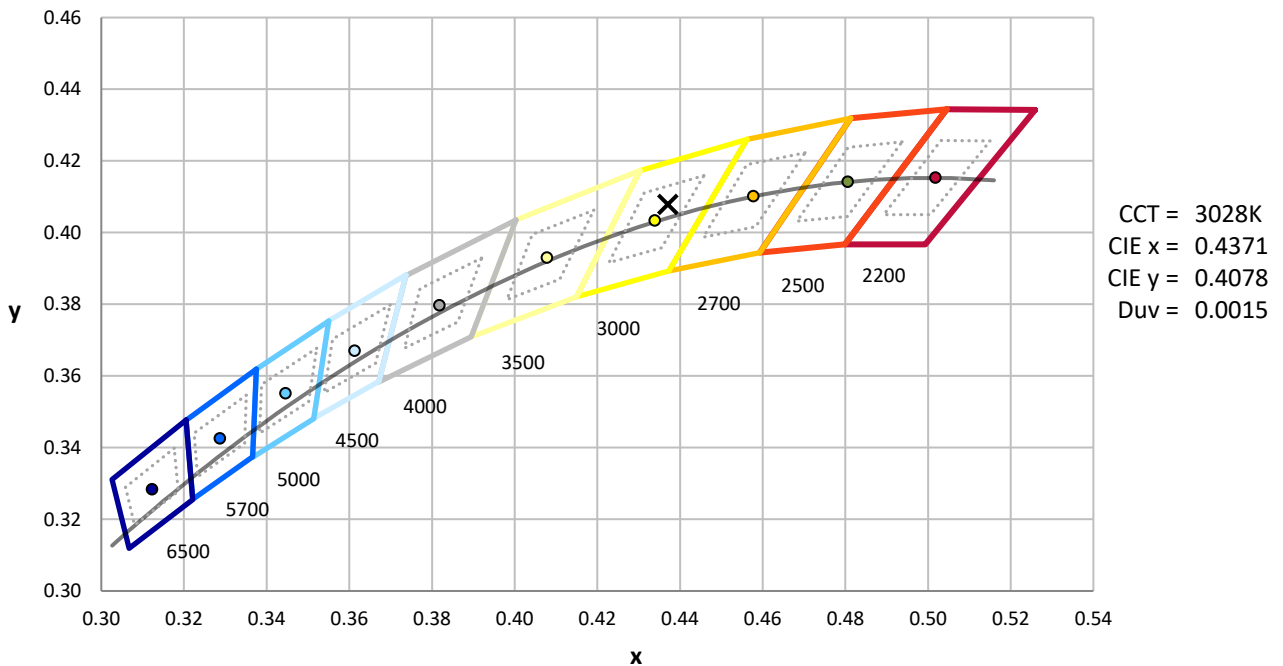
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



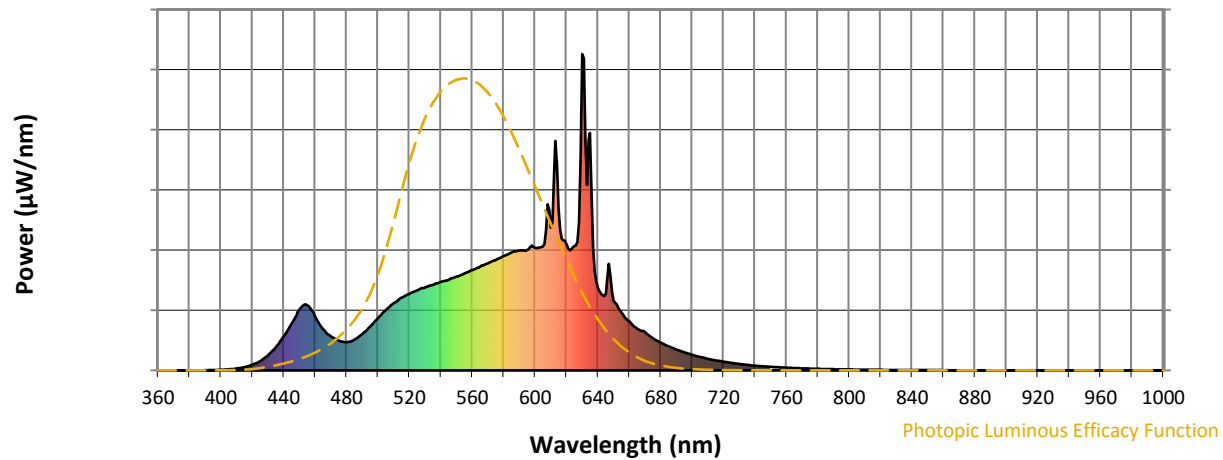
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

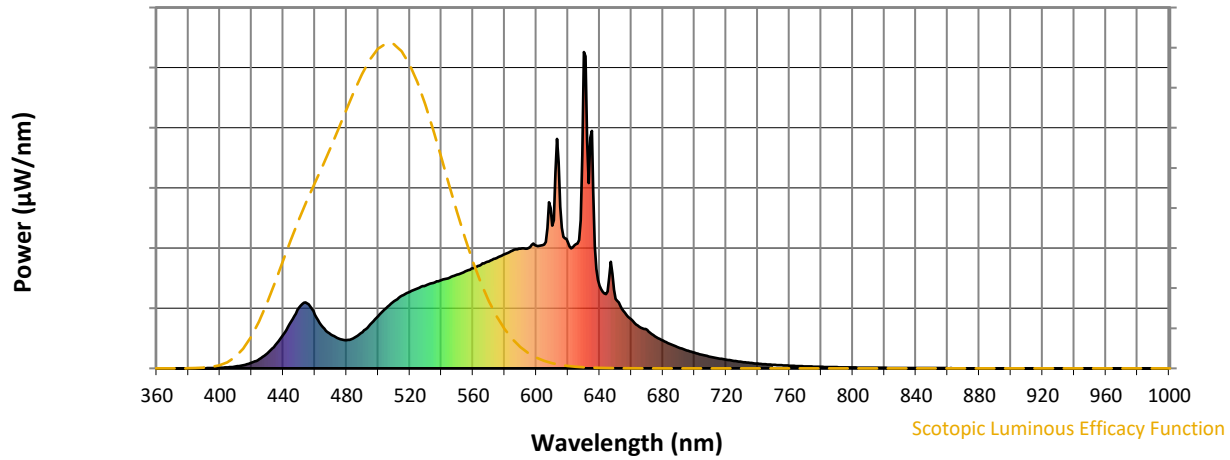


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 115                         | NR               | 620       | 398                         | NR               | 750       | 11                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 138                         | NR               | 625       | 392                         | NR               | 755       | 10                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 165                         | NR               | 630       | 1000                        | NR               | 760       | 9                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 190                         | NR               | 635       | 751                         | NR               | 765       | 7                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 212                         | NR               | 640       | 261                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 230                         | NR               | 645       | 243                         | NR               | 775       | 5                           | NR               | 905       | 0                           | NR               |
| 390       | 1                           | NR               | 520       | 242                         | NR               | 650       | 220                         | NR               | 780       | 5                           | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 253                         | NR               | 655       | 183                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 262                         | NR               | 660       | 155                         | NR               | 790       | 4                           | NR               | 920       | 0                           | NR               |
| 405       | 3                           | NR               | 535       | 270                         | NR               | 665       | 132                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 6                           | NR               | 540       | 279                         | NR               | 670       | 121                         | NR               | 800       | 3                           | NR               | 930       | 0                           | NR               |
| 415       | 10                          | NR               | 545       | 287                         | NR               | 675       | 101                         | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 18                          | NR               | 550       | 296                         | NR               | 680       | 88                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 30                          | NR               | 555       | 307                         | NR               | 685       | 76                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 48                          | NR               | 560       | 317                         | NR               | 690       | 66                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 73                          | NR               | 565       | 327                         | NR               | 695       | 57                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 107                         | NR               | 570       | 338                         | NR               | 700       | 49                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 147                         | NR               | 575       | 349                         | NR               | 705       | 43                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 193                         | NR               | 580       | 361                         | NR               | 710       | 37                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 206                         | NR               | 585       | 372                         | NR               | 715       | 32                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 170                         | NR               | 590       | 379                         | NR               | 720       | 28                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 131                         | NR               | 595       | 380                         | NR               | 725       | 24                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 107                         | NR               | 600       | 388                         | NR               | 730       | 20                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 94                          | NR               | 605       | 392                         | NR               | 735       | 17                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 89                          | NR               | 610       | 451                         | NR               | 740       | 15                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 97                          | NR               | 615       | 511                         | NR               | 745       | 13                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



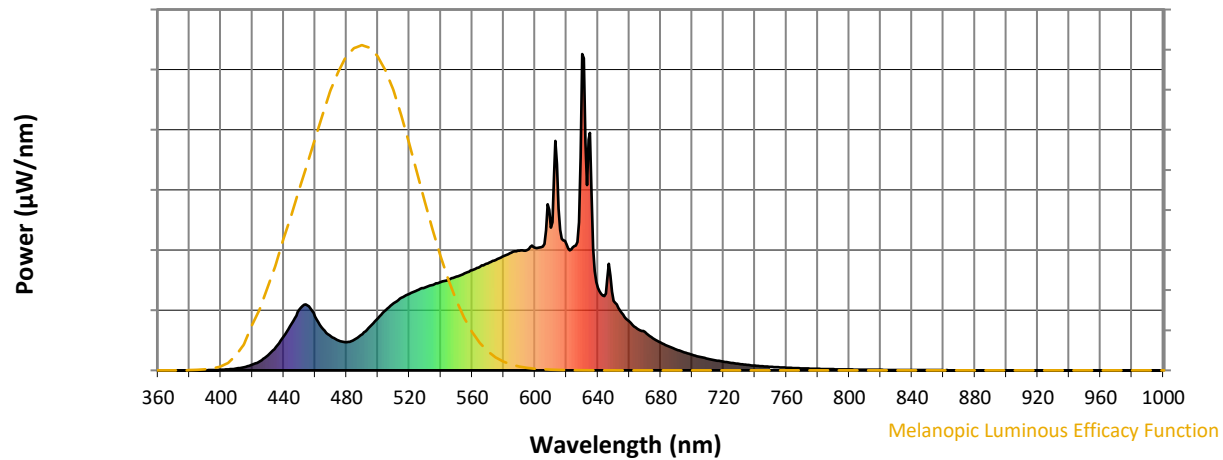
Scotopic Lumens: NR

S/P: 1.4

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 115                      | NR            | 620    | 398                      | NR            | 750    | 11                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 138                      | NR            | 625    | 392                      | NR            | 755    | 10                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 165                      | NR            | 630    | 1000                     | NR            | 760    | 9                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 190                      | NR            | 635    | 751                      | NR            | 765    | 7                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 212                      | NR            | 640    | 261                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 230                      | NR            | 645    | 243                      | NR            | 775    | 5                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 242                      | NR            | 650    | 220                      | NR            | 780    | 5                        | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 253                      | NR            | 655    | 183                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 262                      | NR            | 660    | 155                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 3                        | NR            | 535    | 270                      | NR            | 665    | 132                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 6                        | NR            | 540    | 279                      | NR            | 670    | 121                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 10                       | NR            | 545    | 287                      | NR            | 675    | 101                      | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 18                       | NR            | 550    | 296                      | NR            | 680    | 88                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 30                       | NR            | 555    | 307                      | NR            | 685    | 76                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 48                       | NR            | 560    | 317                      | NR            | 690    | 66                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 73                       | NR            | 565    | 327                      | NR            | 695    | 57                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 107                      | NR            | 570    | 338                      | NR            | 700    | 49                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 147                      | NR            | 575    | 349                      | NR            | 705    | 43                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 193                      | NR            | 580    | 361                      | NR            | 710    | 37                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 206                      | NR            | 585    | 372                      | NR            | 715    | 32                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 170                      | NR            | 590    | 379                      | NR            | 720    | 28                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 131                      | NR            | 595    | 380                      | NR            | 725    | 24                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 107                      | NR            | 600    | 388                      | NR            | 730    | 20                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 94                       | NR            | 605    | 392                      | NR            | 735    | 17                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 89                       | NR            | 610    | 451                      | NR            | 740    | 15                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 97                       | NR            | 615    | 511                      | NR            | 745    | 13                       | NR            | 875    | 0                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2508-518-2

### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.69**

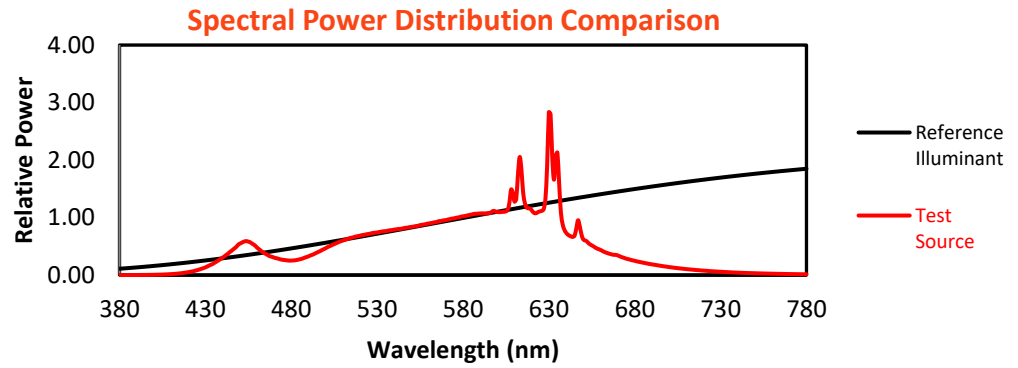
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 115                                  | NR                             | 620               | 398                                  | NR                             | 750               | 11                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 138                                  | NR                             | 625               | 392                                  | NR                             | 755               | 10                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 165                                  | NR                             | 630               | 1000                                 | NR                             | 760               | 9                                    | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 190                                  | NR                             | 635               | 751                                  | NR                             | 765               | 7                                    | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 212                                  | NR                             | 640               | 261                                  | NR                             | 770               | 6                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 230                                  | NR                             | 645               | 243                                  | NR                             | 775               | 5                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 242                                  | NR                             | 650               | 220                                  | NR                             | 780               | 5                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 253                                  | NR                             | 655               | 183                                  | NR                             | 785               | 4                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 262                                  | NR                             | 660               | 155                                  | NR                             | 790               | 4                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 270                                  | NR                             | 665               | 132                                  | NR                             | 795               | 3                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 279                                  | NR                             | 670               | 121                                  | NR                             | 800               | 3                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 10                                   | NR                             | 545               | 287                                  | NR                             | 675               | 101                                  | NR                             | 805               | 2                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 18                                   | NR                             | 550               | 296                                  | NR                             | 680               | 88                                   | NR                             | 810               | 2                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 30                                   | NR                             | 555               | 307                                  | NR                             | 685               | 76                                   | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 48                                   | NR                             | 560               | 317                                  | NR                             | 690               | 66                                   | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 73                                   | NR                             | 565               | 327                                  | NR                             | 695               | 57                                   | NR                             | 825               | 1                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 107                                  | NR                             | 570               | 338                                  | NR                             | 700               | 49                                   | NR                             | 830               | 1                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 147                                  | NR                             | 575               | 349                                  | NR                             | 705               | 43                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 193                                  | NR                             | 580               | 361                                  | NR                             | 710               | 37                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 206                                  | NR                             | 585               | 372                                  | NR                             | 715               | 32                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 170                                  | NR                             | 590               | 379                                  | NR                             | 720               | 28                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 131                                  | NR                             | 595               | 380                                  | NR                             | 725               | 24                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 107                                  | NR                             | 600               | 388                                  | NR                             | 730               | 20                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 94                                   | NR                             | 605               | 392                                  | NR                             | 735               | 17                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 89                                   | NR                             | 610               | 451                                  | NR                             | 740               | 15                                   | NR                             | 870               | 0                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 97                                   | NR                             | 615               | 511                                  | NR                             | 745               | 13                                   | NR                             | 875               | 0                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2508-518-2

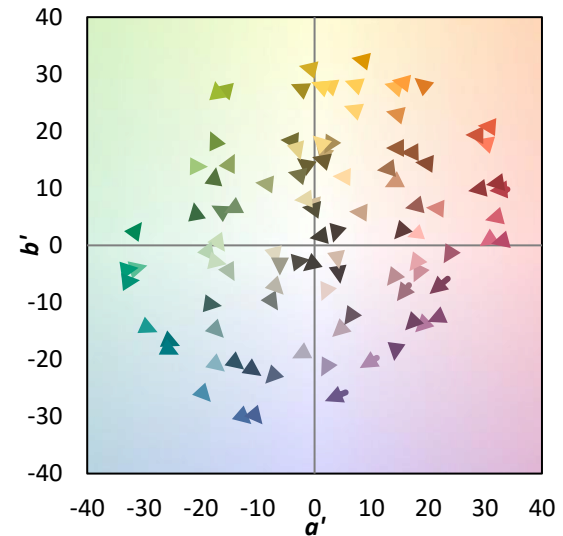
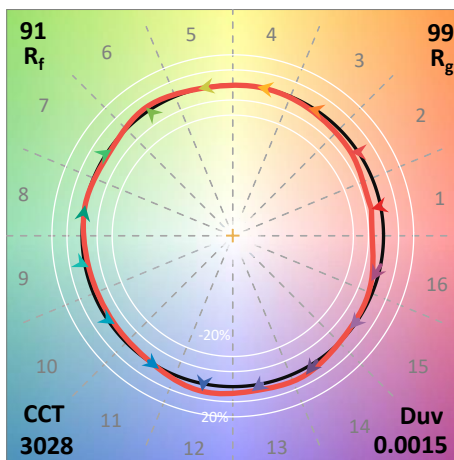
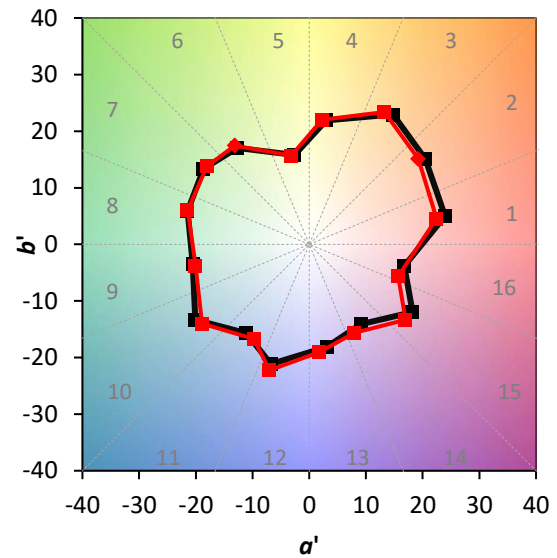
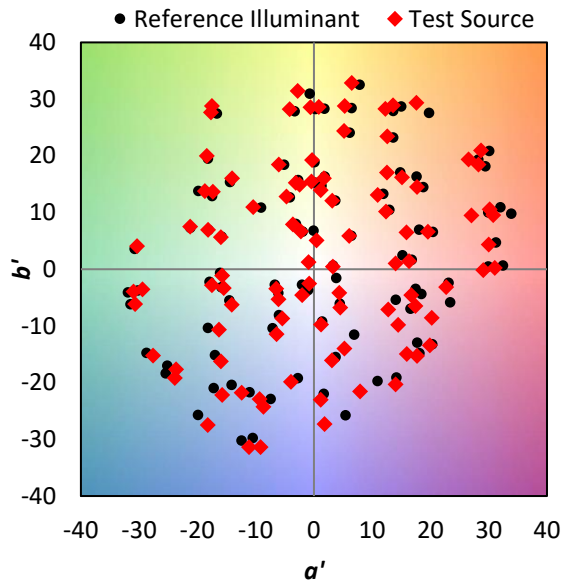
TM-30-18

### Summary

$R_f = 90.8$   
 $R_g = 98.9$   
 $CIE R_a = 91.6$   
 $R_9 = 48.5$

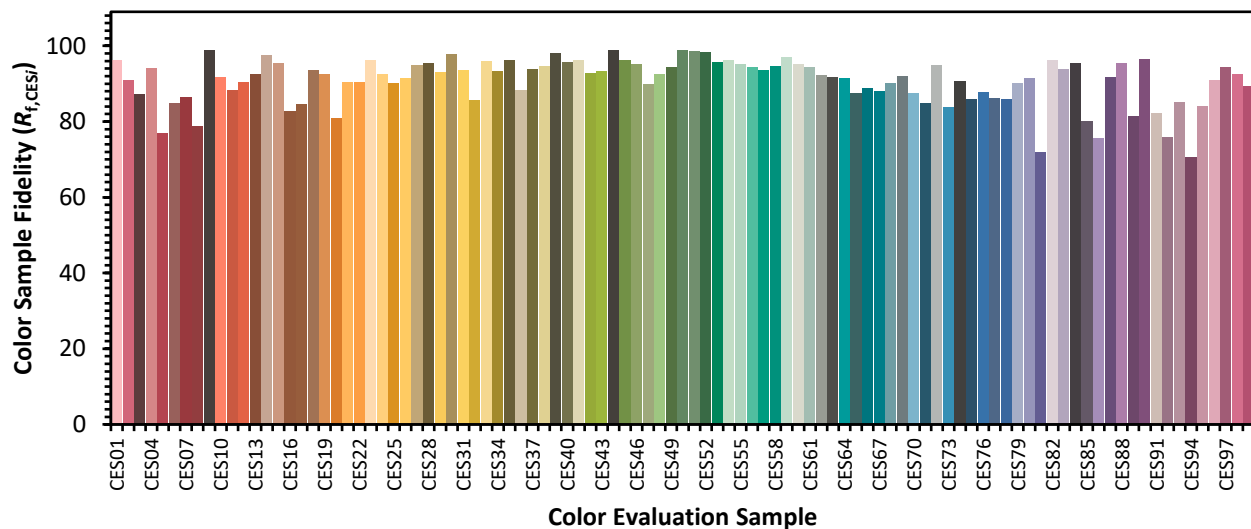


### Color Vector Graphics

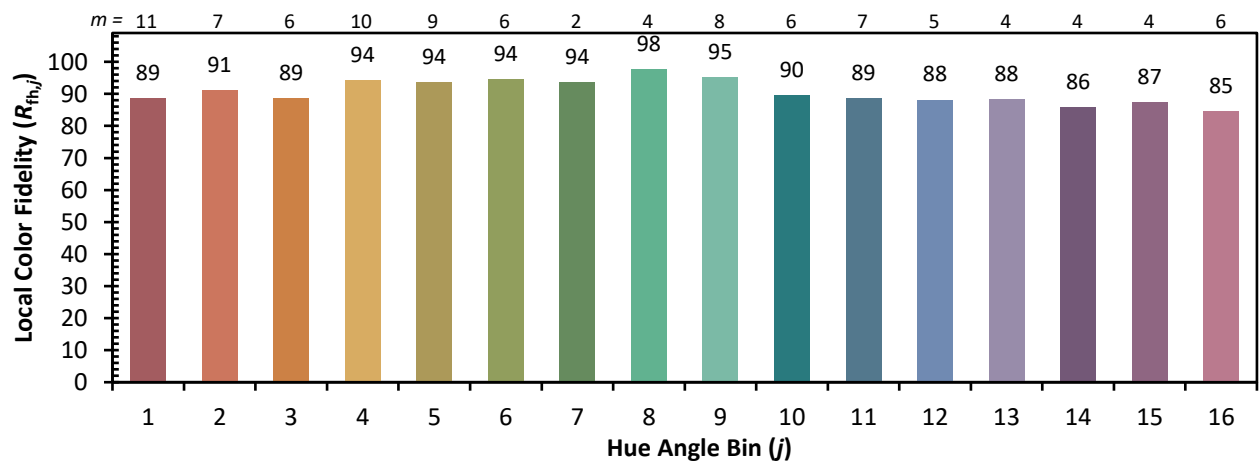
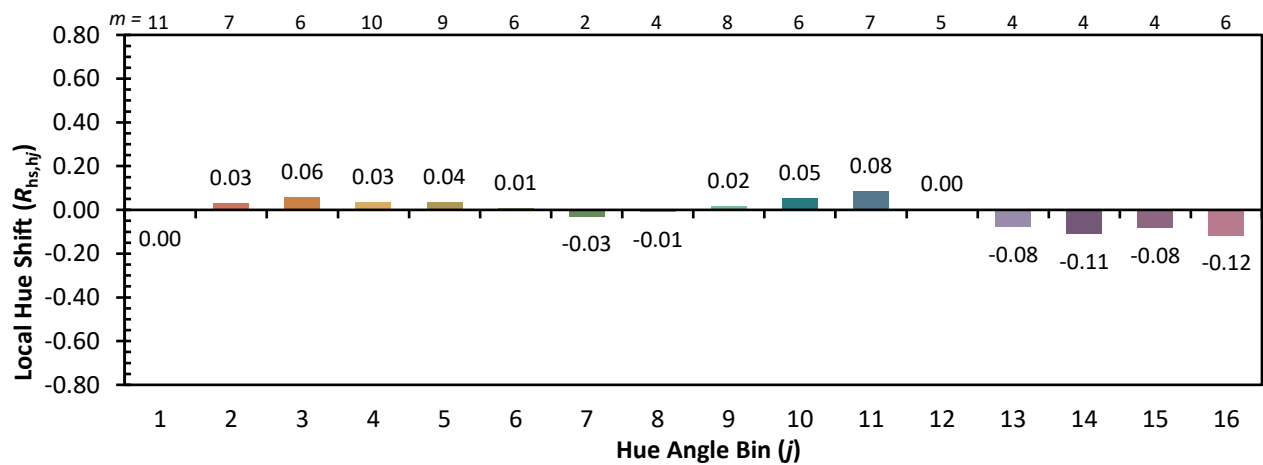
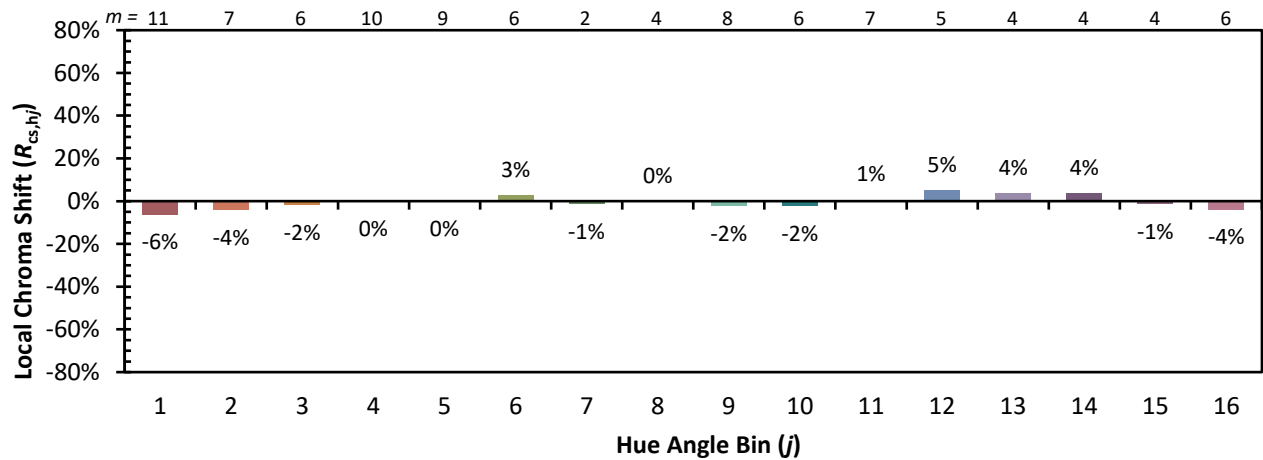


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 91 | CES51 = 99 | CES76 = 88 |
| CES02 = 63 | CES27 = 95 | CES52 = 98 | CES77 = 86 |
| CES03 = 32 | CES28 = 95 | CES53 = 96 | CES78 = 86 |
| CES04 = 70 | CES29 = 93 | CES54 = 96 | CES79 = 90 |
| CES05 = 50 | CES30 = 98 | CES55 = 95 | CES80 = 92 |
| CES06 = 51 | CES31 = 94 | CES56 = 94 | CES81 = 72 |
| CES07 = 43 | CES32 = 86 | CES57 = 94 | CES82 = 96 |
| CES08 = 42 | CES33 = 96 | CES58 = 95 | CES83 = 94 |
| CES09 = 29 | CES34 = 93 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 96 | CES60 = 95 | CES85 = 80 |
| CES11 = 58 | CES36 = 88 | CES61 = 94 | CES86 = 76 |
| CES12 = 65 | CES37 = 94 | CES62 = 92 | CES87 = 92 |
| CES13 = 44 | CES38 = 95 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 98 | CES64 = 91 | CES89 = 82 |
| CES15 = 72 | CES40 = 96 | CES65 = 87 | CES90 = 96 |
| CES16 = 48 | CES41 = 96 | CES66 = 89 | CES91 = 82 |
| CES17 = 50 | CES42 = 93 | CES67 = 88 | CES92 = 76 |
| CES18 = 57 | CES43 = 93 | CES68 = 90 | CES93 = 85 |
| CES19 = 72 | CES44 = 99 | CES69 = 92 | CES94 = 71 |
| CES20 = 67 | CES45 = 96 | CES70 = 88 | CES95 = 84 |
| CES21 = 86 | CES46 = 95 | CES71 = 85 | CES96 = 91 |
| CES22 = 79 | CES47 = 90 | CES72 = 95 | CES97 = 94 |
| CES23 = 92 | CES48 = 93 | CES73 = 84 | CES98 = 93 |
| CES24 = 91 | CES49 = 94 | CES74 = 91 | CES99 = 89 |
| CES25 = 72 | CES50 = 99 | CES75 = 86 |            |

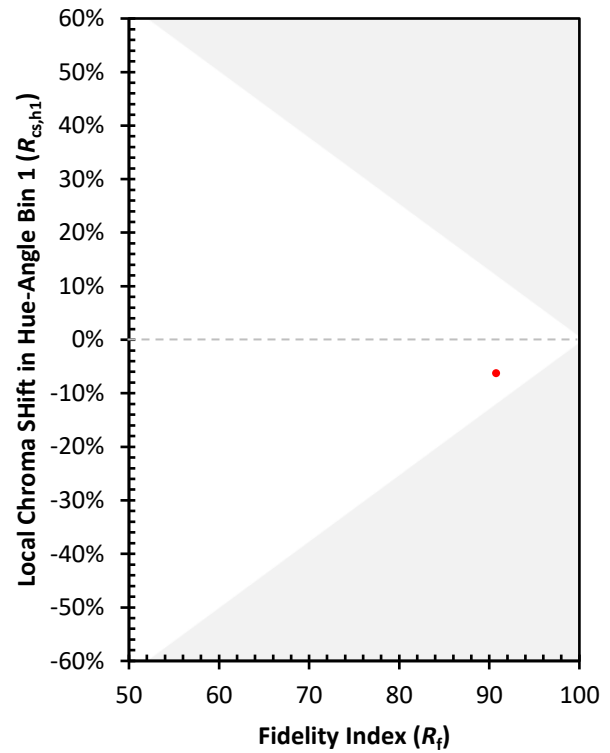
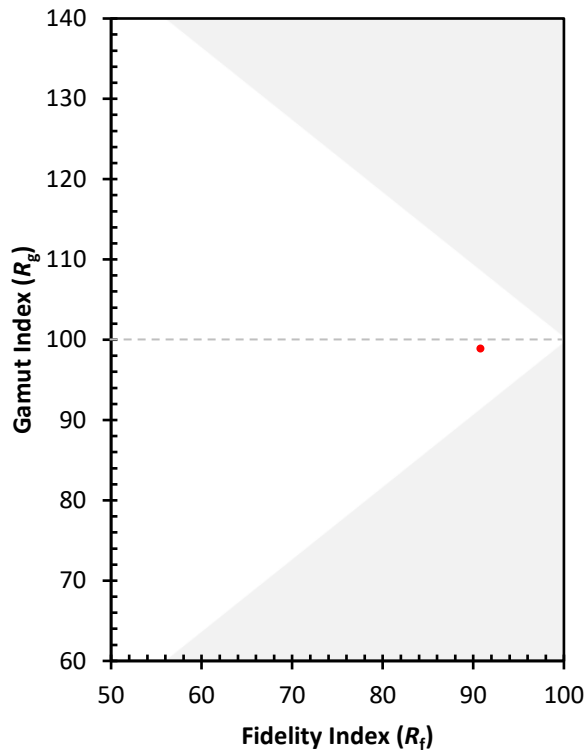


Color Rendition by Hue-Angle Bin





**Measure Comparisons**



(END OF REPORT)