

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: P1250401

Luminaire Tested: P3A24R459027D010 E3CD1MMS

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1250401  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2601-647-28)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/30/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A24R459027D010 E3CD1MMS  
Description: 3in Adjustable LED luminaire with, R45 optic, 2700K CCT AND, 90CRI , E3CD1MMS TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

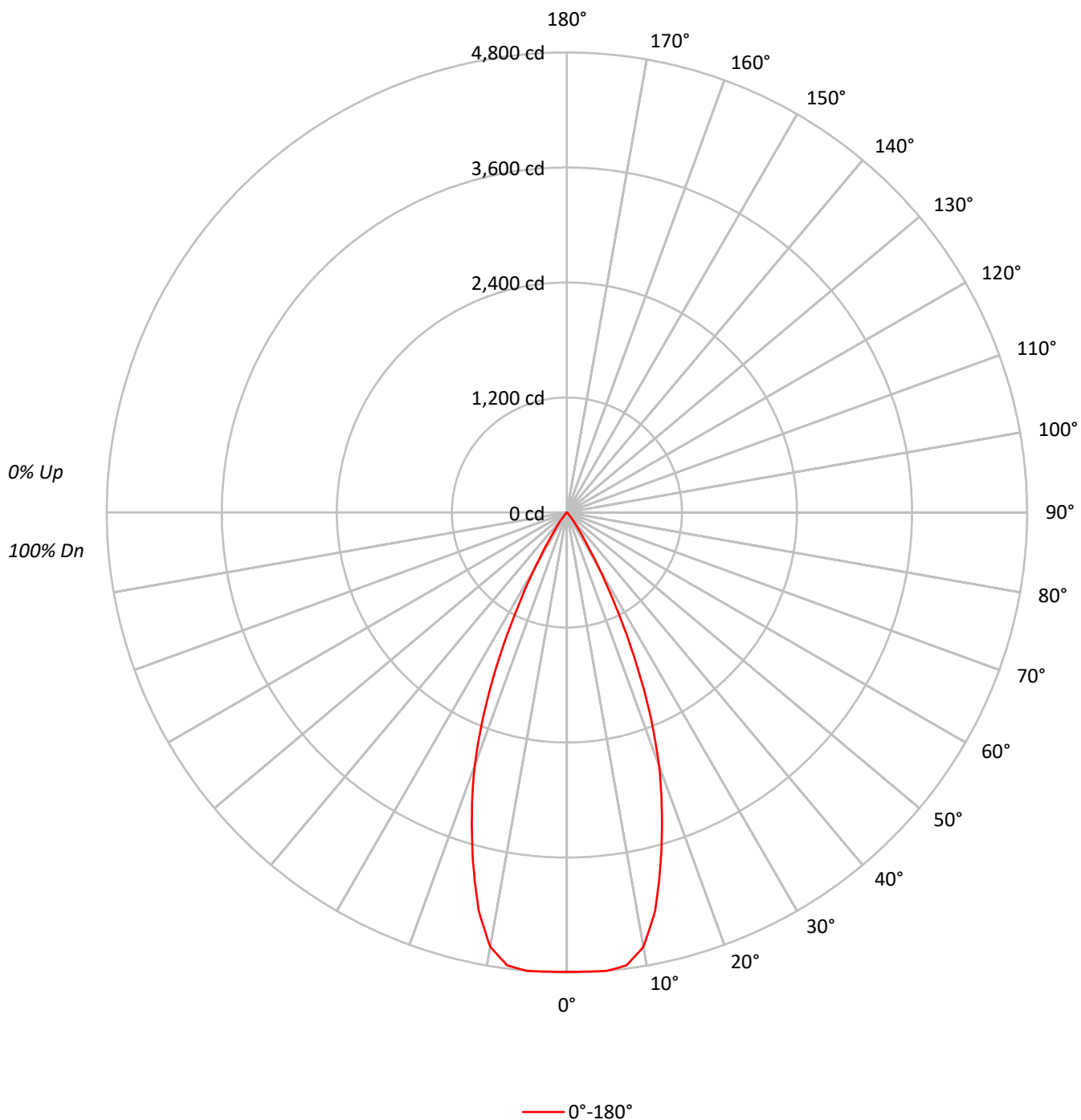
Lumens per Lamp: N/A  
Luminaire Lumens: 2423.9 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Spacing Criteria (0/90/45): 0.72 / 0.72 / 0.66  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

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: P1250401

CATALOG NUMBER: P3A24R459027D010 E3CD1MMS

### Luminous Intensity Polar Plot



TEST NUMBER: P1250401

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**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   | 114 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 104 | 103 |  | 102 | 101 | 100 |  | 99  |
| 2   | 110 | 106 | 102 | 100 | 108 | 104 | 101 | 98  | 101 | 98  | 96  |  | 98  | 96  | 94  |  | 95  |
| 3   | 106 | 100 | 96  | 93  | 104 | 99  | 95  | 92  | 96  | 93  | 91  |  | 94  | 91  | 89  |  | 92  |
| 4   | 102 | 95  | 91  | 87  | 100 | 94  | 90  | 87  | 92  | 89  | 86  |  | 90  | 87  | 85  |  | 88  |
| 5   | 98  | 91  | 86  | 82  | 96  | 90  | 85  | 82  | 88  | 84  | 81  |  | 87  | 83  | 81  |  | 85  |
| 6   | 94  | 87  | 82  | 78  | 93  | 86  | 81  | 78  | 85  | 80  | 77  |  | 83  | 80  | 77  |  | 82  |
| 7   | 90  | 83  | 78  | 74  | 89  | 82  | 78  | 74  | 81  | 77  | 74  |  | 80  | 76  | 74  |  | 79  |
| 8   | 87  | 79  | 74  | 71  | 86  | 79  | 74  | 71  | 78  | 74  | 71  |  | 77  | 73  | 70  |  | 76  |
| 9   | 84  | 76  | 71  | 68  | 83  | 76  | 71  | 68  | 75  | 71  | 68  |  | 74  | 70  | 67  |  | 73  |
| 10  | 81  | 73  | 68  | 65  | 80  | 73  | 68  | 65  | 72  | 68  | 65  |  | 71  | 67  | 65  |  | 71  |

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

|     |         |
|-----|---------|
|     | 0°      |
| 0°  | 1050946 |
| 5°  | 1056546 |
| 10° | 1024074 |
| 15° | 858166  |
| 20° | 656004  |
| 25° | 399362  |
| 30° | 166177  |
| 35° | 53244   |
| 40° | 16574   |
| 45° | 3349    |
| 50° | 2456    |
| 55° | 2753    |
| 60° | 2368    |
| 65° | 2802    |
| 70° | 2308    |
| 75° | 3050    |
| 80° | 2273    |
| 85° | 0       |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3349 cd/sqm

TEST NUMBER: P1250401

CATALOG NUMBER: P3A24R459027D010 E3CD1MMS

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 452.7  | 18.7      |
| 10°-20°   | 1039.0 | 42.9      |
| 20°-30°   | 748.1  | 30.9      |
| 30°-40°   | 155.6  | 6.4       |
| 40°-50°   | 14.2   | 0.6       |
| 50°-60°   | 5.8    | 0.2       |
| 60°-70°   | 4.7    | 0.2       |
| 70°-80°   | 3.1    | 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°    | 2239.7 | 92.4      |
| 0°-40°    | 2395.4 | 98.8      |
| 0°-60°    | 2415.4 | 99.6      |
| 0°-90°    | 2423.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2423.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 4793 |      |
| 5°  | 4800 | 453  |
| 15° | 3780 | 1039 |
| 25° | 1651 | 748  |
| 35° | 199  | 156  |
| 45° | 11   | 14   |
| 55° | 7    | 6    |
| 65° | 5    | 5    |
| 75° | 4    | 3    |
| 85° | 0    | 1    |
| 90° | 0    |      |

TEST NUMBER: P1250401

CATALOG NUMBER: P3A24R459027D010 E3CD1MMS

**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 4792.7 |
| 2.5°  | 4794.5 |
| 5°    | 4799.9 |
| 7.5°  | 4765.5 |
| 10°   | 4599.2 |
| 12.5° | 4252.1 |
| 15°   | 3780.2 |
| 17.5° | 3297.5 |
| 20°   | 2811.2 |
| 22.5° | 2252.6 |
| 25°   | 1650.6 |
| 27.5° | 1088.3 |
| 30°   | 656.3  |
| 32.5° | 367.0  |
| 35°   | 198.9  |
| 37.5° | 112.1  |
| 40°   | 57.9   |
| 42.5° | 25.3   |
| 45°   | 10.8   |
| 47.5° | 7.2    |
| 50°   | 7.2    |
| 52.5° | 7.2    |
| 55°   | 7.2    |
| 57.5° | 5.4    |
| 60°   | 5.4    |
| 62.5° | 5.4    |
| 65°   | 5.4    |
| 67.5° | 3.6    |
| 70°   | 3.6    |
| 72.5° | 3.6    |
| 75°   | 3.6    |
| 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: SP1-2508-518-1

Test Date: 09/09/2025

Luminaire Tested: LD3A24R159027D010 E3D1LI

Data in this report applies to families of products including LD3A24R159027D010 E3D1LI

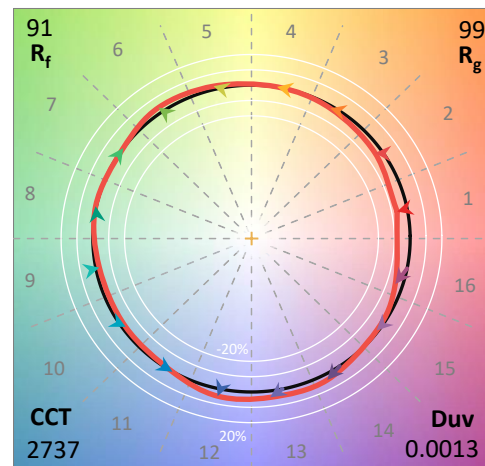
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2508-518-1  
 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: **LD3A24R159027D010 E3D1LI**  
 Description: 3in Adjustable LED luminaire with, R15 optic, 2700K CCT AND, 90CRI , E3D1LI TRIM

### Spectral Parameters

CCT (K): 2737  
 CIE  $u'$ : 0.2605  
 CIE  $v'$ : 0.5285  
 Duv: 0.0013  
 CIE x: 0.4590  
 CIE y: 0.4138  
 CIE z: 0.1272  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 583  
 Purity: 62.00127  
 Rf: 90.8  
 Rg: 99.1

CRI (Ra): 91.4  
 R1: 92.1  
 R2: 95.0  
 R3: 97.1  
 R4: 93.2  
 R5: 91.6  
 R6: 95.8  
 R7: 90.2  
 R8: 76.6  
 R9: 46.0  
 R10: 87.1  
 R11: 94.9  
 R12: 83.0  
 R13: 92.7  
 R14: 97.1  
 R15: 85.9



### Test Conditions

Stabilization Time: 70M  
 Operation Time: 2H 10M  
 Sphere Temperature (°C): 25.2

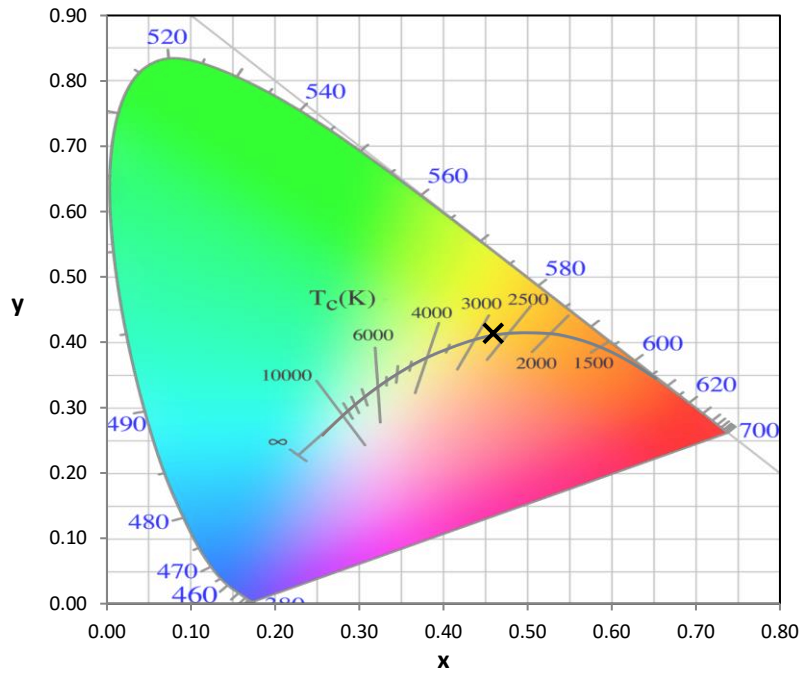


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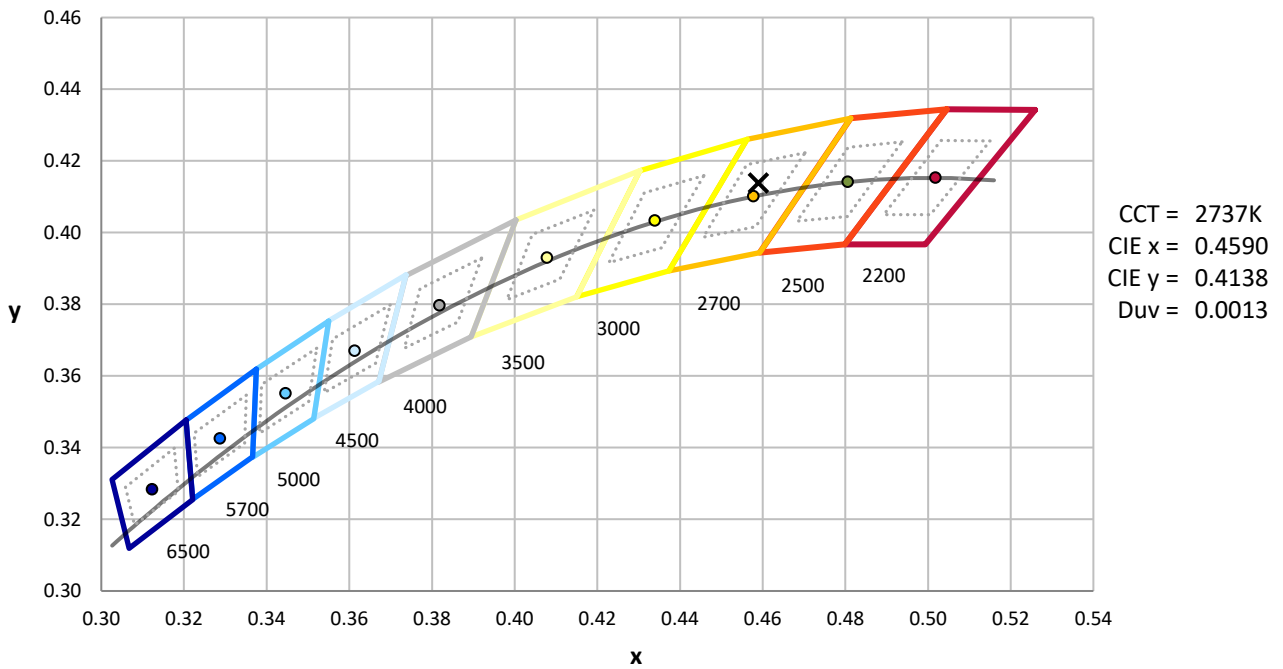
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

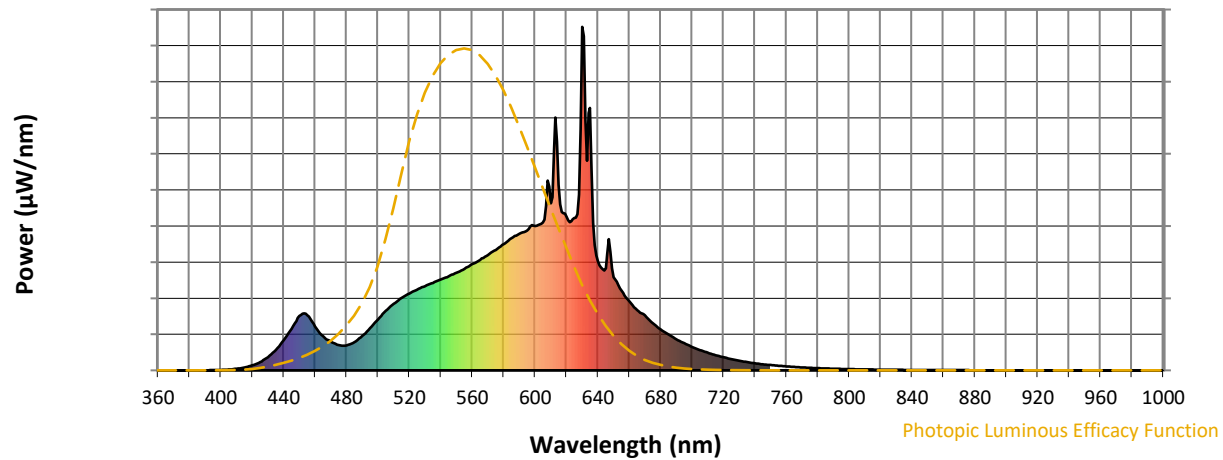


**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



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### Photopic Flux vs. Wavelength

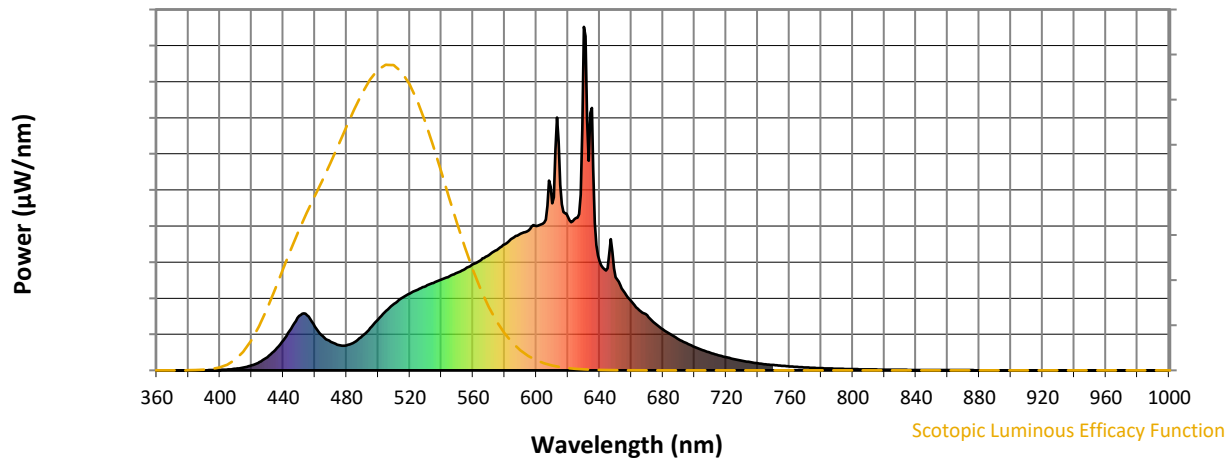


### Photopic Lumens: NR

| 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       | 100                         | NR               | 620       | 447                         | NR               | 750       | 16                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 123                         | NR               | 625       | 443                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 148                         | NR               | 630       | 1000                        | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 173                         | NR               | 635       | 764                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 194                         | NR               | 640       | 317                         | NR               | 770       | 9                           | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 211                         | NR               | 645       | 298                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 271                         | NR               | 780       | 7                           | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 235                         | NR               | 655       | 232                         | NR               | 785       | 6                           | NR               | 915       | 0                           | NR               |
| 400       | 1                           | NR               | 530       | 245                         | NR               | 660       | 202                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 3                           | NR               | 535       | 255                         | NR               | 665       | 175                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 5                           | NR               | 540       | 265                         | NR               | 670       | 160                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 8                           | NR               | 545       | 273                         | NR               | 675       | 137                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 15                          | NR               | 550       | 284                         | NR               | 680       | 119                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 24                          | NR               | 555       | 295                         | NR               | 685       | 104                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 38                          | NR               | 560       | 309                         | NR               | 690       | 91                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 60                          | NR               | 565       | 321                         | NR               | 695       | 79                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 88                          | NR               | 570       | 336                         | NR               | 700       | 68                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 121                         | NR               | 575       | 350                         | NR               | 705       | 59                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 158                         | NR               | 580       | 367                         | NR               | 710       | 51                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 161                         | NR               | 585       | 384                         | NR               | 715       | 44                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 128                         | NR               | 590       | 398                         | NR               | 720       | 38                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 100                         | NR               | 595       | 407                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 83                          | NR               | 600       | 420                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 74                          | NR               | 605       | 431                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 73                          | NR               | 610       | 486                         | NR               | 740       | 20                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 82                          | NR               | 615       | 541                         | NR               | 745       | 17                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



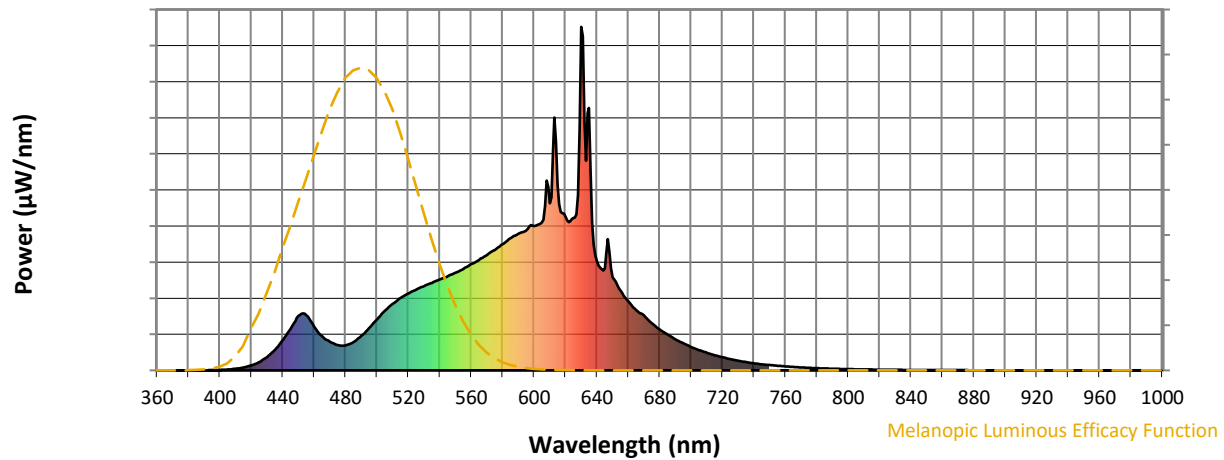
Scotopic Lumens: NR

S/P: 1.27

| 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       | 100                         | NR               | 620       | 447                         | NR               | 750       | 16                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 123                         | NR               | 625       | 443                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 148                         | NR               | 630       | 1000                        | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 173                         | NR               | 635       | 764                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 194                         | NR               | 640       | 317                         | NR               | 770       | 9                           | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 211                         | NR               | 645       | 298                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 271                         | NR               | 780       | 7                           | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 235                         | NR               | 655       | 232                         | NR               | 785       | 6                           | NR               | 915       | 0                           | NR               |
| 400       | 1                           | NR               | 530       | 245                         | NR               | 660       | 202                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 3                           | NR               | 535       | 255                         | NR               | 665       | 175                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 5                           | NR               | 540       | 265                         | NR               | 670       | 160                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 8                           | NR               | 545       | 273                         | NR               | 675       | 137                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 15                          | NR               | 550       | 284                         | NR               | 680       | 119                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 24                          | NR               | 555       | 295                         | NR               | 685       | 104                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 38                          | NR               | 560       | 309                         | NR               | 690       | 91                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 60                          | NR               | 565       | 321                         | NR               | 695       | 79                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 88                          | NR               | 570       | 336                         | NR               | 700       | 68                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 121                         | NR               | 575       | 350                         | NR               | 705       | 59                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 158                         | NR               | 580       | 367                         | NR               | 710       | 51                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 161                         | NR               | 585       | 384                         | NR               | 715       | 44                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 128                         | NR               | 590       | 398                         | NR               | 720       | 38                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 100                         | NR               | 595       | 407                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 83                          | NR               | 600       | 420                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 74                          | NR               | 605       | 431                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 73                          | NR               | 610       | 486                         | NR               | 740       | 20                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 82                          | NR               | 615       | 541                         | NR               | 745       | 17                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2508-518-1

### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.37**

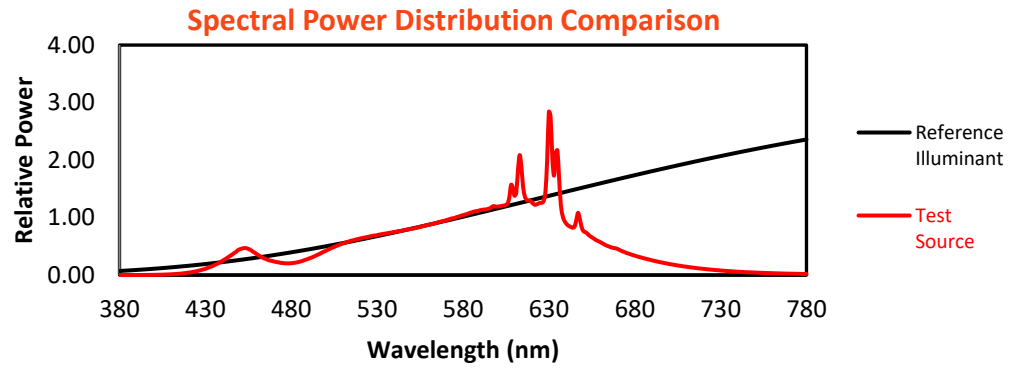
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 100                                  | NR                             | 620               | 447                                  | NR                             | 750               | 16                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 123                                  | NR                             | 625               | 443                                  | NR                             | 755               | 13                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 148                                  | NR                             | 630               | 1000                                 | NR                             | 760               | 11                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 173                                  | NR                             | 635               | 764                                  | NR                             | 765               | 10                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 194                                  | NR                             | 640               | 317                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 211                                  | NR                             | 645               | 298                                  | NR                             | 775               | 7                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 224                                  | NR                             | 650               | 271                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 235                                  | NR                             | 655               | 232                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 1                                    | NR                             | 530               | 245                                  | NR                             | 660               | 202                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 255                                  | NR                             | 665               | 175                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 5                                    | NR                             | 540               | 265                                  | NR                             | 670               | 160                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 8                                    | NR                             | 545               | 273                                  | NR                             | 675               | 137                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 15                                   | NR                             | 550               | 284                                  | NR                             | 680               | 119                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 24                                   | NR                             | 555               | 295                                  | NR                             | 685               | 104                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 38                                   | NR                             | 560               | 309                                  | NR                             | 690               | 91                                   | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 60                                   | NR                             | 565               | 321                                  | NR                             | 695               | 79                                   | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 88                                   | NR                             | 570               | 336                                  | NR                             | 700               | 68                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 121                                  | NR                             | 575               | 350                                  | NR                             | 705               | 59                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 158                                  | NR                             | 580               | 367                                  | NR                             | 710               | 51                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 161                                  | NR                             | 585               | 384                                  | NR                             | 715               | 44                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 128                                  | NR                             | 590               | 398                                  | NR                             | 720               | 38                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 407                                  | NR                             | 725               | 33                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 83                                   | NR                             | 600               | 420                                  | NR                             | 730               | 28                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 74                                   | NR                             | 605               | 431                                  | NR                             | 735               | 24                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 73                                   | NR                             | 610               | 486                                  | NR                             | 740               | 20                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 82                                   | NR                             | 615               | 541                                  | NR                             | 745               | 17                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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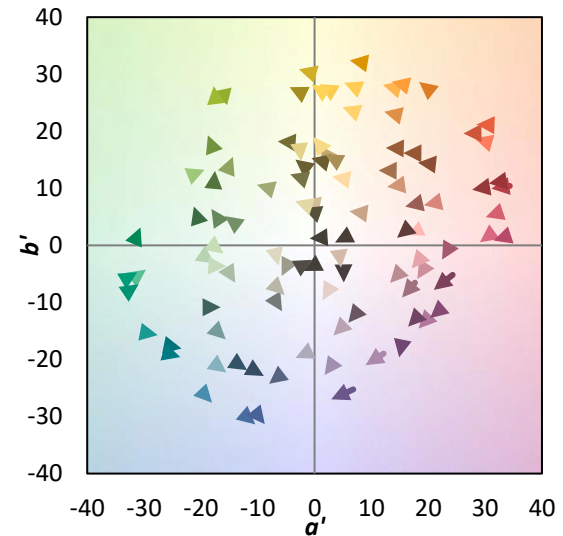
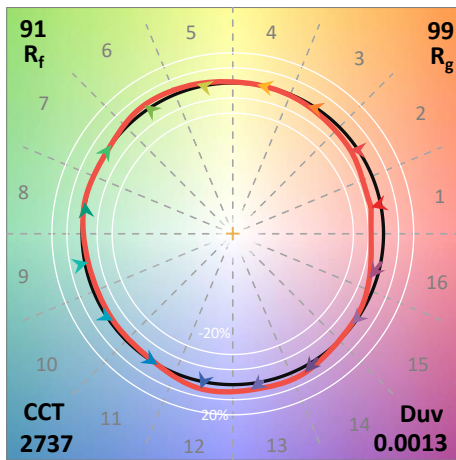
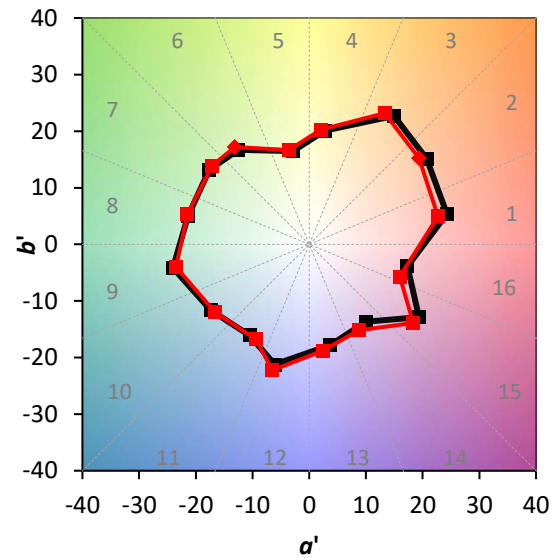
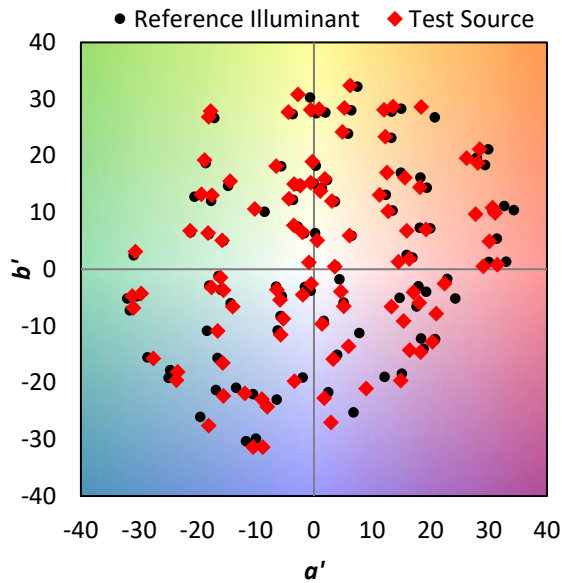
TM-30-18

### Summary

$R_f = 90.8$   
 $R_g = 99.1$   
 $CIE R_a = 91.4$   
 $R_9 = 46.0$

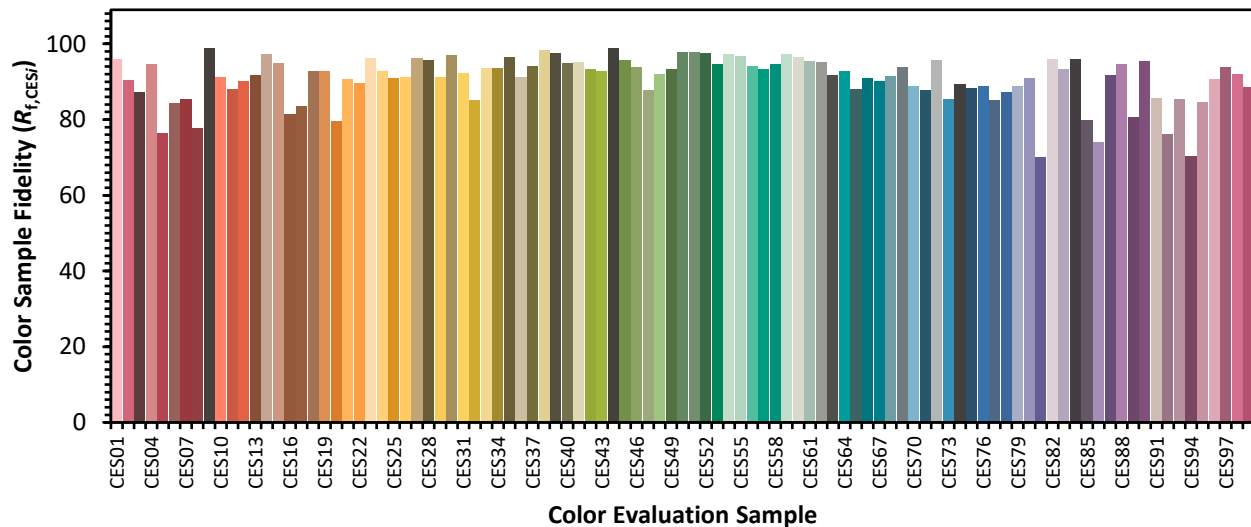


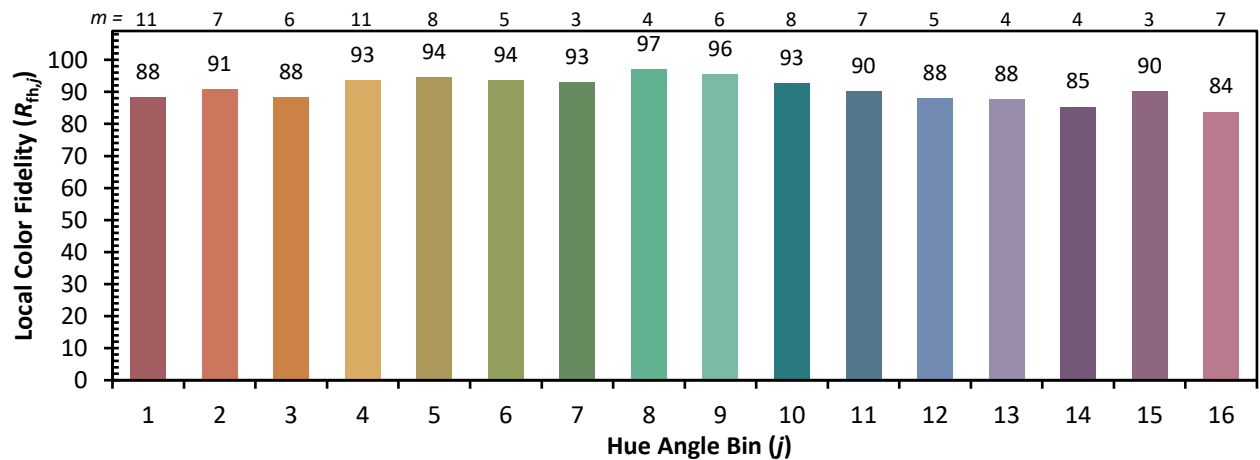
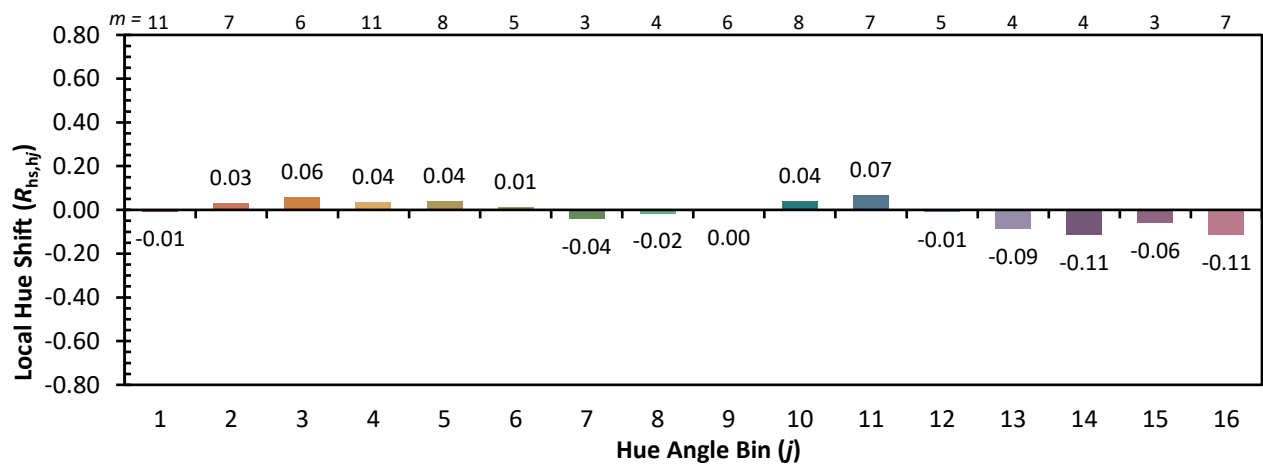
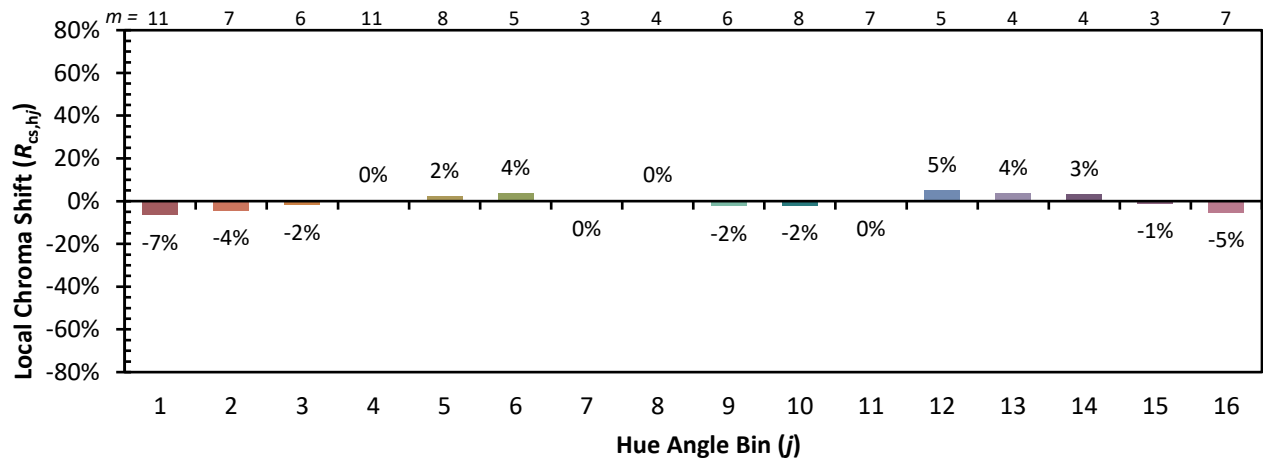
### Color Vector Graphics



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

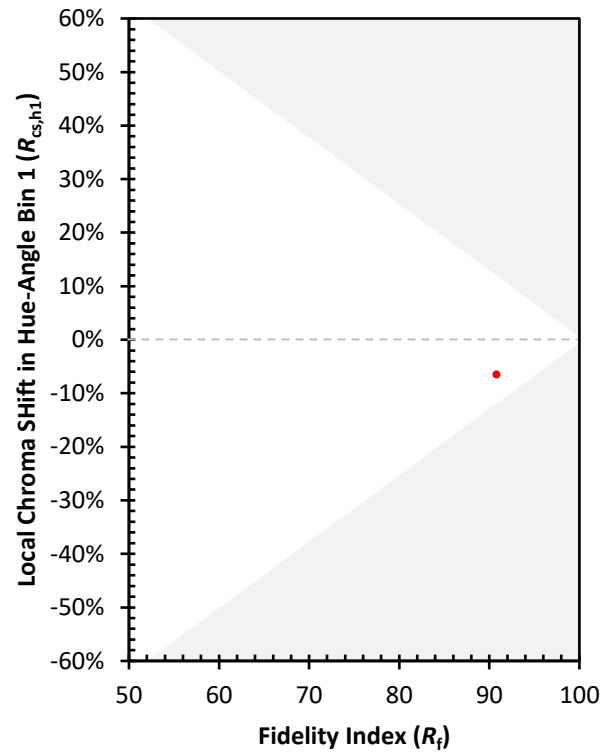
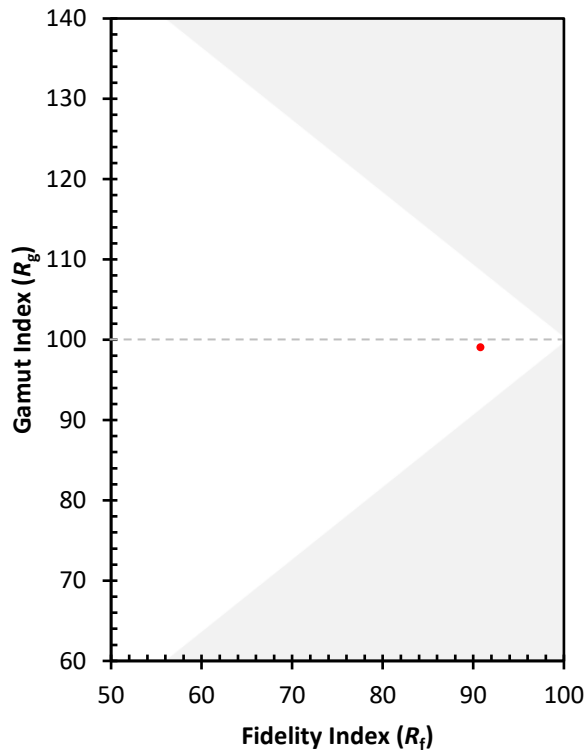
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 91 | CES51 = 98 | CES76 = 89 |
| CES02 = 64 | CES27 = 96 | CES52 = 98 | CES77 = 85 |
| CES03 = 32 | CES28 = 96 | CES53 = 95 | CES78 = 87 |
| CES04 = 71 | CES29 = 91 | CES54 = 97 | CES79 = 89 |
| CES05 = 51 | CES30 = 97 | CES55 = 97 | CES80 = 91 |
| CES06 = 51 | CES31 = 92 | CES56 = 94 | CES81 = 70 |
| CES07 = 44 | CES32 = 85 | CES57 = 93 | CES82 = 96 |
| CES08 = 42 | CES33 = 94 | CES58 = 95 | CES83 = 93 |
| CES09 = 29 | CES34 = 94 | CES59 = 97 | CES84 = 96 |
| CES10 = 77 | CES35 = 97 | CES60 = 97 | CES85 = 80 |
| CES11 = 59 | CES36 = 91 | CES61 = 95 | CES86 = 74 |
| CES12 = 66 | CES37 = 94 | CES62 = 95 | CES87 = 92 |
| CES13 = 44 | CES38 = 98 | CES63 = 92 | CES88 = 95 |
| CES14 = 74 | CES39 = 97 | CES64 = 93 | CES89 = 81 |
| CES15 = 72 | CES40 = 95 | CES65 = 88 | CES90 = 96 |
| CES16 = 48 | CES41 = 95 | CES66 = 91 | CES91 = 86 |
| CES17 = 50 | CES42 = 93 | CES67 = 90 | CES92 = 76 |
| CES18 = 57 | CES43 = 93 | CES68 = 92 | CES93 = 85 |
| CES19 = 72 | CES44 = 99 | CES69 = 94 | CES94 = 70 |
| CES20 = 68 | CES45 = 96 | CES70 = 89 | CES95 = 85 |
| CES21 = 87 | CES46 = 94 | CES71 = 88 | CES96 = 91 |
| CES22 = 79 | CES47 = 88 | CES72 = 96 | CES97 = 94 |
| CES23 = 92 | CES48 = 92 | CES73 = 85 | CES98 = 92 |
| CES24 = 91 | CES49 = 93 | CES74 = 89 | CES99 = 89 |
| CES25 = 72 | CES50 = 98 | CES75 = 88 |            |



**Color Rendition by Hue-Angle Bin**




**Measure Comparisons**



(END OF REPORT)