

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: P1249715

Luminaire Tested: P3A17R459027DE010 E3DL1H

Issue Date: 1/30/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1249715  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2601-647-27)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/30/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: IRiS  
Catalog Number: P3A17R459027DE010 E3DL1H  
Description: 3in Adjustable LED luminaire with, R45 optic, 2700K CCT AND, 90CRI , E3DL1H TRIM  
Light Source: -  
Ballast/Driver: -

**Summary**

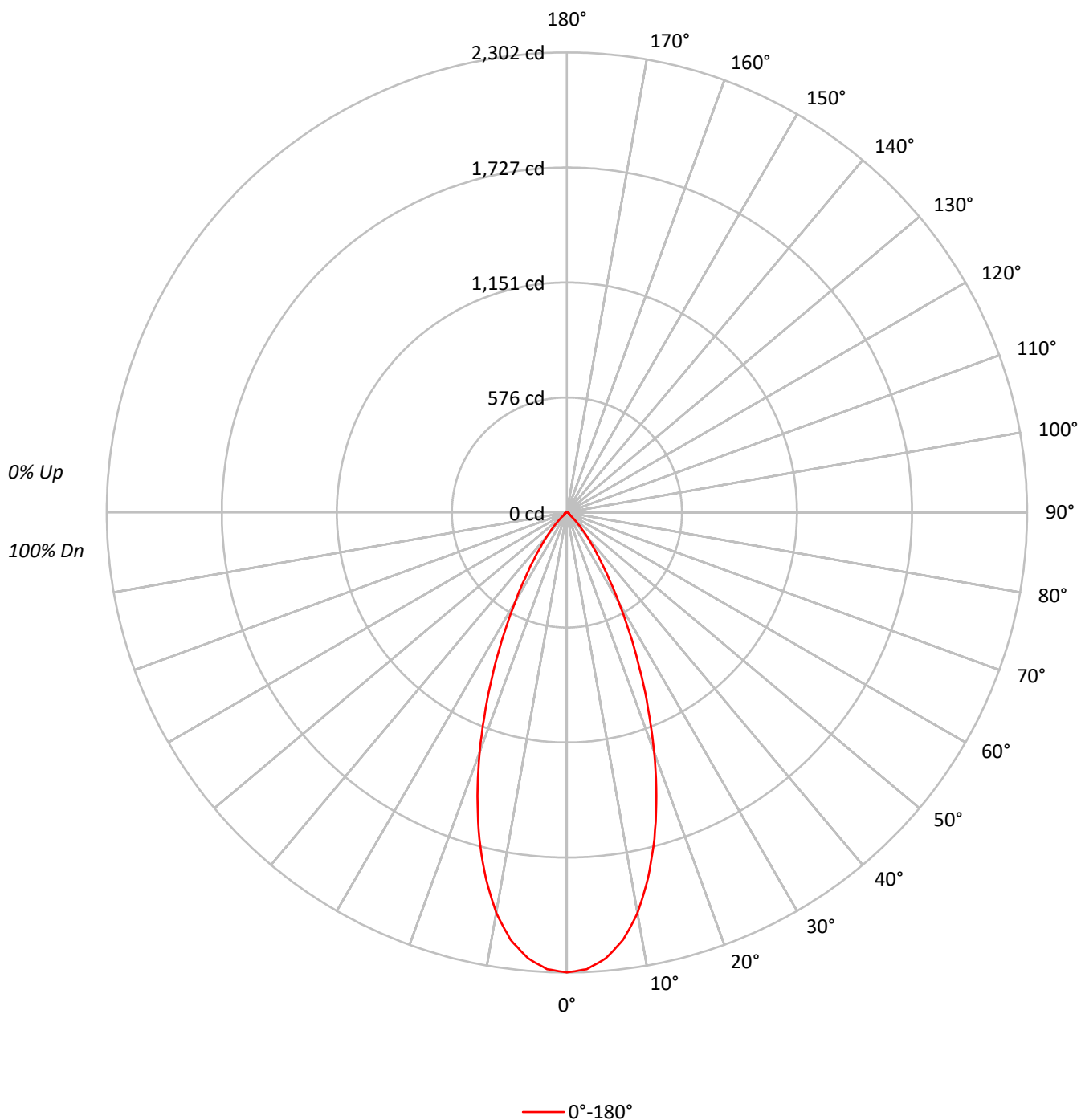
Lumens per Lamp: N/A  
Luminaire Lumens: 1343.9 lumens  
Efficiency: N/A  
Efficacy: 63.4 lumens/watt  
Spacing Criteria (0/90/45): 0.69 / 0.69 / 0.69  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 21.2  
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: P1249715

CATALOG NUMBER: P3A17R459027DE010 E3DL1H

### Luminous Intensity Polar Plot



TEST NUMBER: P1249715

CATALOG NUMBER: P3A17R459027DE010 E3DL1H

**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 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 |  | 101 | 100 | 99  |  | 98  |
| 2   | 109 | 104 | 100 | 97  | 106 | 102 | 99  | 96  | 99  | 96  | 94  |  | 96  | 94  | 92  |  | 93  |
| 3   | 104 | 98  | 93  | 89  | 102 | 96  | 92  | 88  | 94  | 90  | 87  |  | 91  | 88  | 86  |  | 89  |
| 4   | 99  | 92  | 87  | 83  | 97  | 91  | 86  | 82  | 89  | 85  | 81  |  | 87  | 83  | 80  |  | 85  |
| 5   | 94  | 87  | 81  | 77  | 93  | 86  | 81  | 77  | 84  | 80  | 76  |  | 82  | 79  | 76  |  | 81  |
| 6   | 90  | 82  | 77  | 73  | 89  | 81  | 76  | 72  | 80  | 75  | 72  |  | 78  | 74  | 71  |  | 77  |
| 7   | 86  | 78  | 72  | 68  | 85  | 77  | 72  | 68  | 76  | 71  | 68  |  | 75  | 71  | 67  |  | 74  |
| 8   | 83  | 74  | 68  | 65  | 82  | 73  | 68  | 65  | 72  | 68  | 64  |  | 71  | 67  | 64  |  | 70  |
| 9   | 79  | 70  | 65  | 61  | 78  | 70  | 65  | 61  | 69  | 64  | 61  |  | 68  | 64  | 61  |  | 67  |
| 10  | 76  | 67  | 62  | 58  | 75  | 67  | 62  | 58  | 66  | 61  | 58  |  | 65  | 61  | 58  |  | 65  |

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

|     |        |
|-----|--------|
|     | 0°     |
| 0°  | 504718 |
| 5°  | 492889 |
| 10° | 453098 |
| 15° | 383907 |
| 20° | 297876 |
| 25° | 208222 |
| 30° | 131159 |
| 35° | 77229  |
| 40° | 43682  |
| 45° | 21243  |
| 50° | 7369   |
| 55° | 5964   |
| 60° | 5789   |
| 65° | 5604   |
| 70° | 5386   |
| 75° | 5083   |
| 80° | 4546   |
| 85° | 3019   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 21243 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 207.3  | 15.4      |
| 10°-20°   | 464.4  | 34.6      |
| 20°-30°   | 394.3  | 29.3      |
| 30°-40°   | 188.1  | 14.0      |
| 40°-50°   | 56.7   | 4.2       |
| 50°-60°   | 14.3   | 1.1       |
| 60°-70°   | 10.7   | 0.8       |
| 70°-80°   | 6.3    | 0.5       |
| 80°-90°   | 1.8    | 0.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1066.0 | 79.3      |
| 0°-40°    | 1254.1 | 93.3      |
| 0°-60°    | 1325.1 | 98.6      |
| 0°-90°    | 1343.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1343.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 2302 |      |
| 5°  | 2239 | 207  |
| 15° | 1691 | 464  |
| 25° | 861  | 394  |
| 35° | 288  | 188  |
| 45° | 68   | 57   |
| 55° | 16   | 14   |
| 65° | 11   | 11   |
| 75° | 6    | 6    |
| 85° | 1    | 2    |
| 90° | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 2301.7 |
| 2.5°  | 2287.3 |
| 5°    | 2239.2 |
| 7.5°  | 2156.3 |
| 10°   | 2034.9 |
| 12.5° | 1873.8 |
| 15°   | 1691.1 |
| 17.5° | 1488.0 |
| 20°   | 1276.5 |
| 22.5° | 1061.3 |
| 25°   | 860.6  |
| 27.5° | 677.9  |
| 30°   | 518.0  |
| 32.5° | 389.4  |
| 35°   | 288.5  |
| 37.5° | 212.7  |
| 40°   | 152.6  |
| 42.5° | 105.8  |
| 45°   | 68.5   |
| 47.5° | 38.5   |
| 50°   | 21.6   |
| 52.5° | 16.8   |
| 55°   | 15.6   |
| 57.5° | 14.4   |
| 60°   | 13.2   |
| 62.5° | 12.0   |
| 65°   | 10.8   |
| 67.5° | 9.6    |
| 70°   | 8.4    |
| 72.5° | 7.2    |
| 75°   | 6.0    |
| 77.5° | 4.8    |
| 80°   | 3.6    |
| 82.5° | 2.4    |
| 85°   | 1.2    |
| 87.5° | 1.2    |
| 90°   | 0.0    |

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

Report Prepared for

Cooper Lighting Solutions

IRiS

Report Number: SP1-2504-409-27

Test Date: 05/16/2025

Luminaire Tested: LD3A13R159027D010 E3D1H

Data in this report applies to families of products including LD3A

### Test Information

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

### Spectral Parameters

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

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



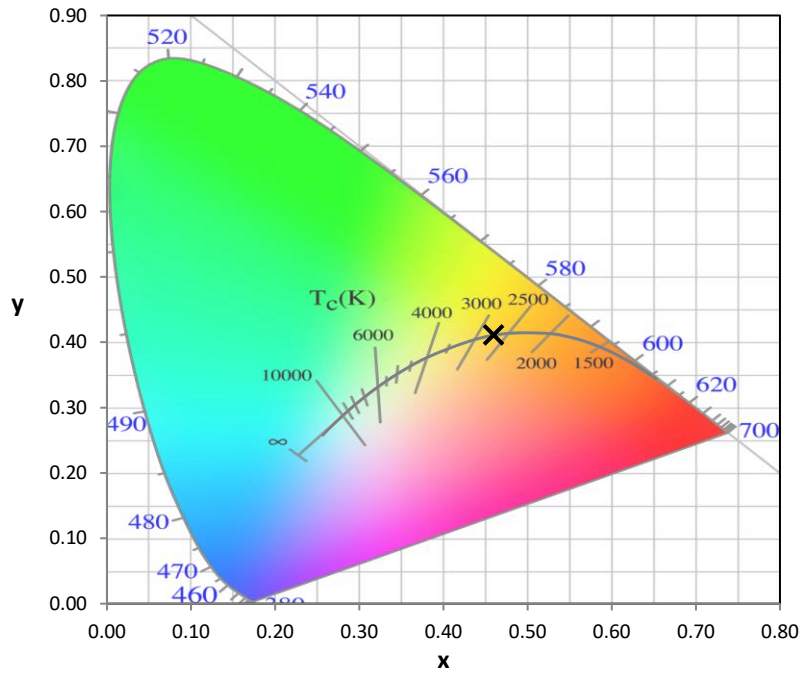
**Test Conditions**  
 Stabilization Time: 48M  
 Operation Time: 1H 48M  
 Sphere Temperature (°C): 25.0

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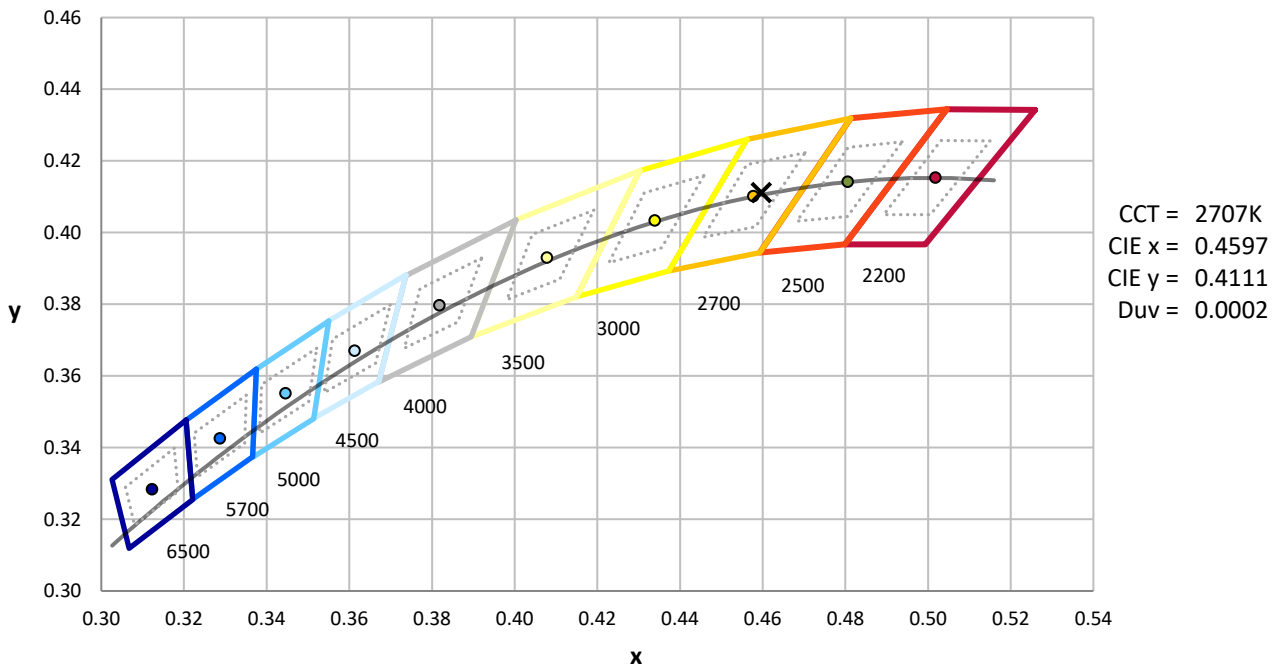
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2700K 4-step quadrangle

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### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

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

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.31

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

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.5**

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

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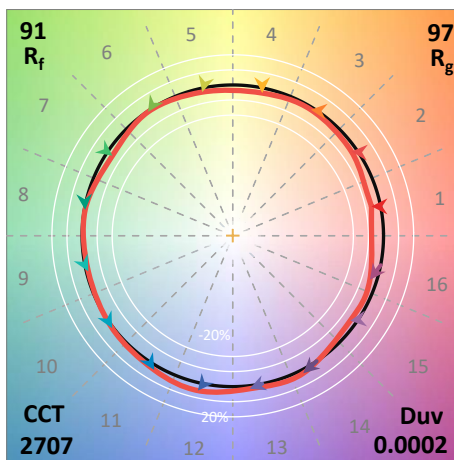
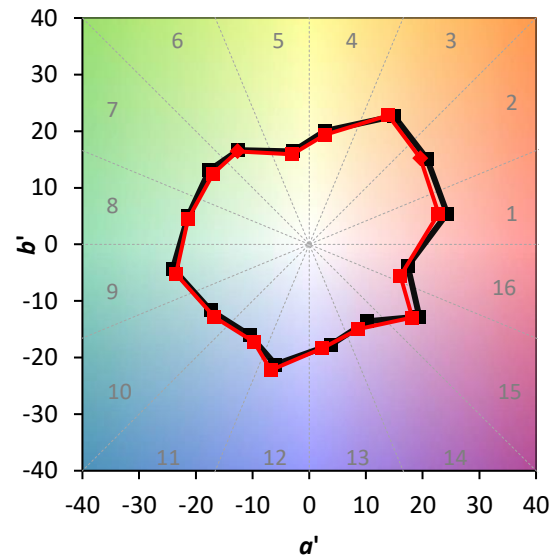
TM-30-18

### Summary

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

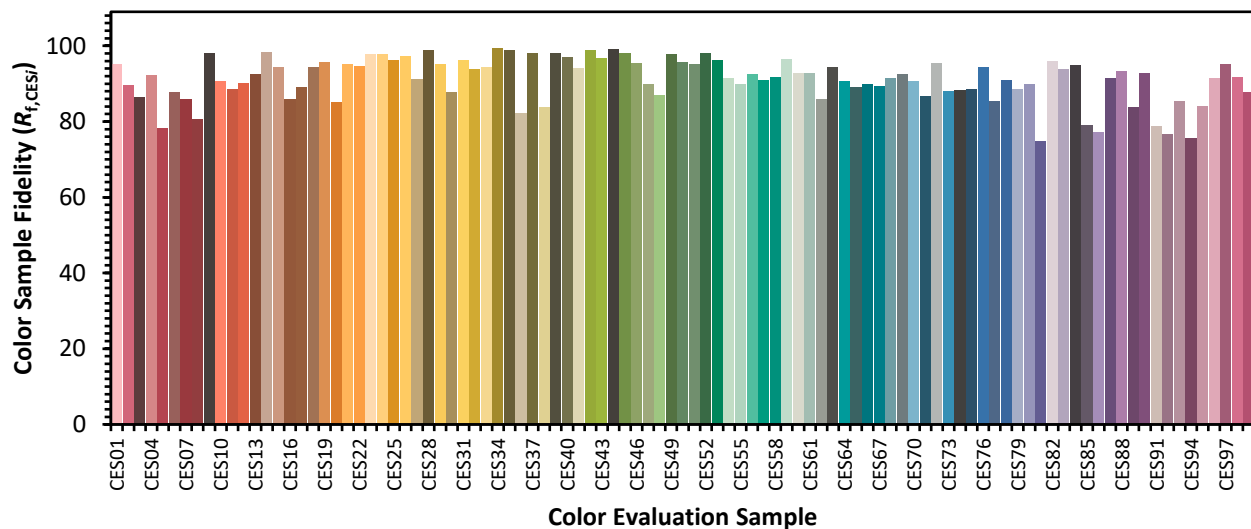


### Color Vector Graphics

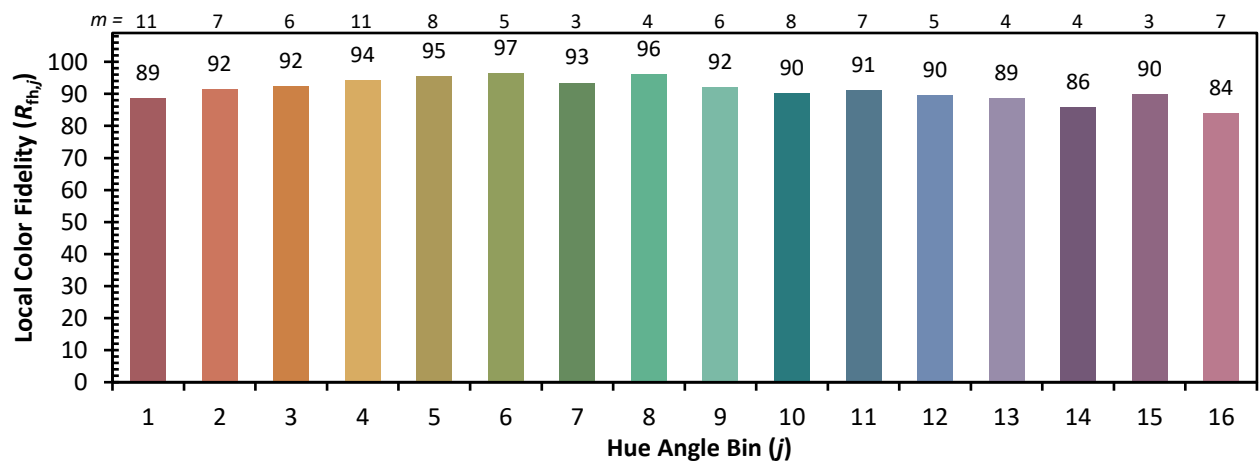


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

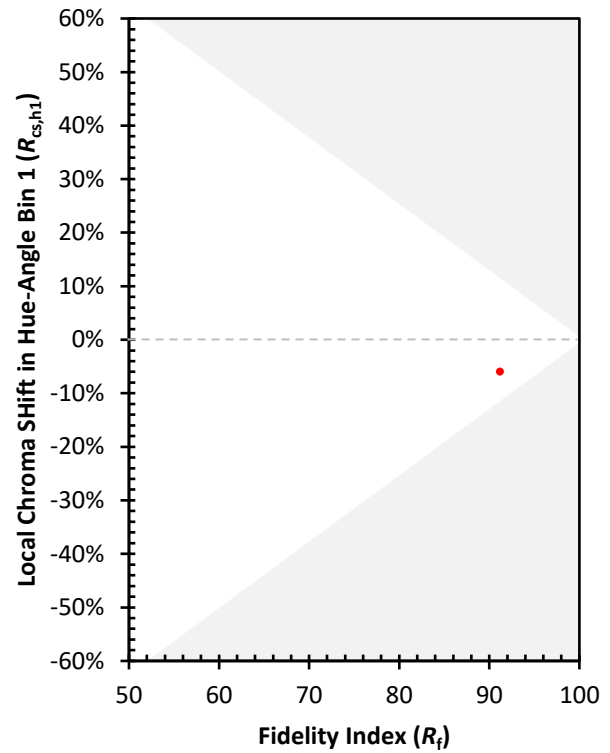
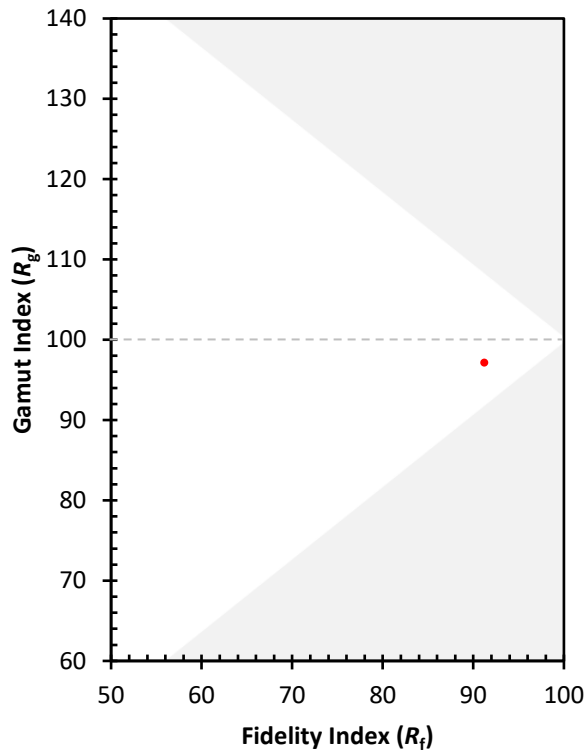
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 97 | CES51 = 95 | CES76 = 94 |
| CES02 = 64 | CES27 = 91 | CES52 = 98 | CES77 = 85 |
| CES03 = 32 | CES28 = 99 | CES53 = 96 | CES78 = 91 |
| CES04 = 71 | CES29 = 95 | CES54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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)