

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: LUMIERE

Report Number: P871421

Luminaire Tested: **650-RD-8LED4036-12-*-FG**

Issue Date: 09/10/2024



Test Information

Test Method: LM-79-08
Report Number: P871421
Test Lab: INNOVATION CENTER(G3)
Issue Date: 09/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMIERE
Catalog Number: 650-RD-8LED4036-12-*-FG
Description: LUMIERE BOCA IN GROUND UPLIGHT 650 ROUND W/ 36 DEG WIDE AND FROSTED GLASS
Light Source: 1 SORAA
SM16-07-36D-940-03. SORAA
Ballast/Driver: -

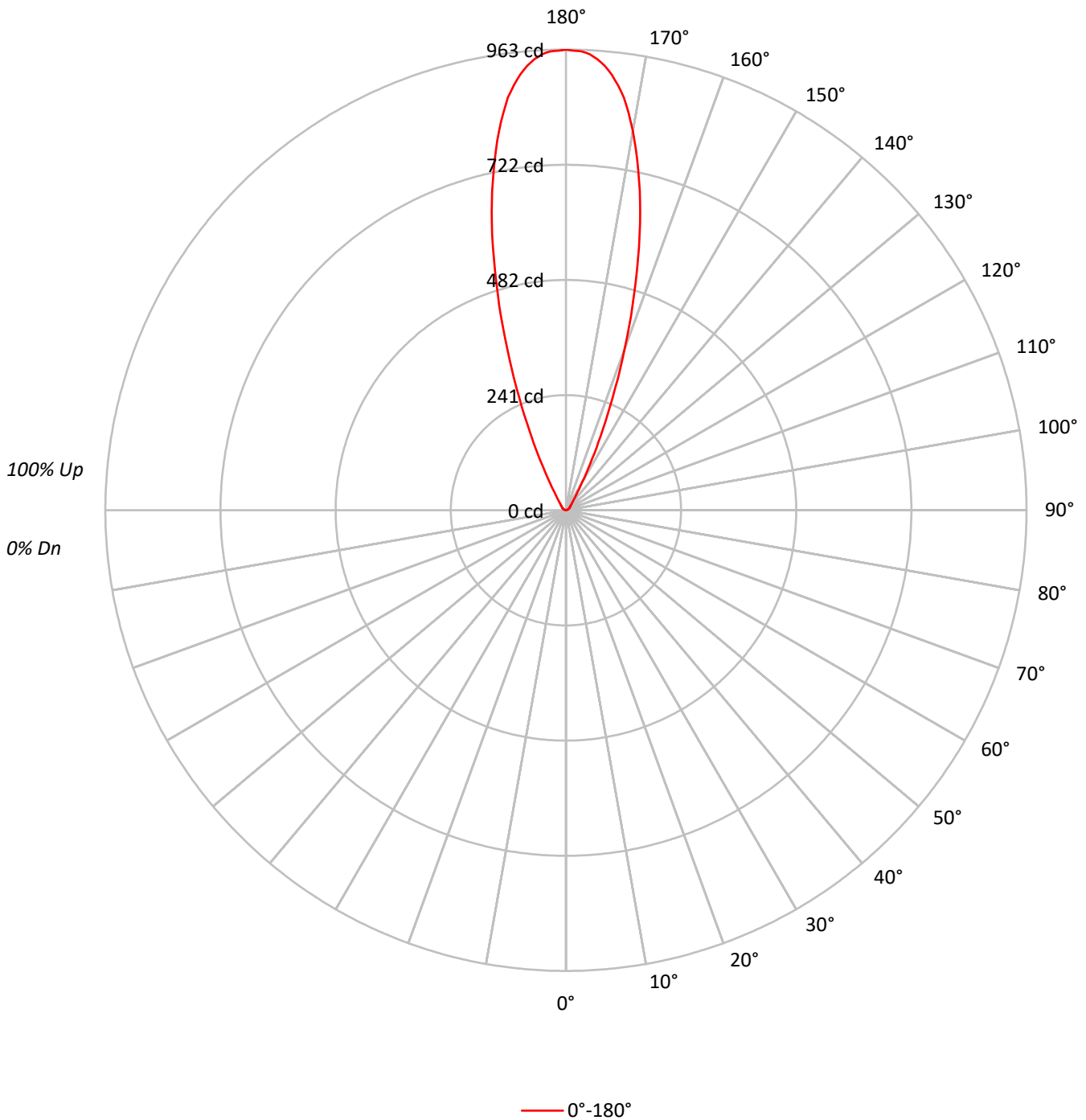
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 377.2 lumens
Efficiency: N/A
Efficacy: 53.9 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Circular (Dia: 0.19' x H: 0')
CIE Type: Indirect

Input Watts (W): 7
Input Voltage (V): 12.0
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 1
Total Harmonic Distortion (THDi): 0.0
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

TEST NUMBER: P871421
CATALOG NUMBER: 650-RD-8LED4036-12-*-FG

Luminous Intensity Polar Plot





TEST NUMBER: P871421
 CATALOG NUMBER: 650-RD-8LED4036-12-*-FG

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | | | | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 95 | 95 | 95 | 95 | 81 | 81 | 81 | 81 | 56 | 56 | 56 | 32 | 32 | 32 | 10 | 10 | 10 | 10 | 10 | 10 | 0 |
| 1 | 87 | 83 | 79 | 76 | 74 | 71 | 68 | 65 | 48 | 47 | 45 | 28 | 27 | 26 | 9 | 9 | 8 | 8 | 8 | 8 | 0 |
| 2 | 79 | 72 | 66 | 62 | 67 | 62 | 57 | 53 | 42 | 40 | 37 | 24 | 23 | 22 | 8 | 7 | 7 | 7 | 7 | 7 | 0 |
| 3 | 72 | 63 | 57 | 51 | 61 | 54 | 49 | 44 | 37 | 34 | 31 | 21 | 20 | 18 | 7 | 6 | 6 | 6 | 6 | 6 | 0 |
| 4 | 65 | 56 | 48 | 43 | 56 | 48 | 42 | 37 | 33 | 29 | 26 | 19 | 17 | 16 | 6 | 6 | 5 | 5 | 5 | 5 | 0 |
| 5 | 60 | 49 | 42 | 36 | 51 | 42 | 36 | 32 | 29 | 25 | 22 | 17 | 15 | 13 | 5 | 5 | 4 | 4 | 4 | 4 | 0 |
| 6 | 55 | 44 | 36 | 31 | 47 | 38 | 32 | 27 | 26 | 22 | 19 | 15 | 13 | 11 | 5 | 4 | 4 | 4 | 4 | 4 | 0 |
| 7 | 50 | 39 | 32 | 27 | 43 | 34 | 28 | 23 | 23 | 19 | 17 | 14 | 11 | 10 | 4 | 4 | 3 | 3 | 3 | 3 | 0 |
| 8 | 47 | 35 | 28 | 23 | 40 | 30 | 24 | 20 | 21 | 17 | 14 | 12 | 10 | 9 | 4 | 3 | 3 | 3 | 3 | 3 | 0 |
| 9 | 43 | 32 | 25 | 20 | 37 | 27 | 22 | 18 | 19 | 15 | 13 | 11 | 9 | 8 | 4 | 3 | 3 | 3 | 3 | 3 | 0 |
| 10 | 40 | 29 | 22 | 18 | 34 | 25 | 19 | 16 | 17 | 14 | 11 | 10 | 8 | 7 | 3 | 3 | 2 | 2 | 2 | 2 | 0 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|----|
| | 0° |
| 0° | 0 |
| 5° | 0 |
| 10° | 0 |
| 15° | 0 |
| 20° | 0 |
| 25° | 0 |
| 30° | 0 |
| 35° | 0 |
| 40° | 0 |
| 45° | 0 |
| 50° | 0 |
| 55° | 0 |
| 60° | 0 |
| 65° | 0 |
| 70° | 0 |
| 75° | 0 |
| 80° | 0 |
| 85° | 0 |



TEST NUMBER: P871421
 CATALOG NUMBER: 650-RD-8LED4036-12-*-FG

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 0.0 | 0.0 |
| 10°-20° | 0.0 | 0.0 |
| 20°-30° | 0.0 | 0.0 |
| 30°-40° | 0.0 | 0.0 |
| 40°-50° | 0.0 | 0.0 |
| 50°-60° | 0.0 | 0.0 |
| 60°-70° | 0.0 | 0.0 |
| 70°-80° | 0.0 | 0.0 |
| 80°-90° | 0.0 | 0.0 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 1.5 | 0.4 |
| 110°-120° | 5.2 | 1.4 |
| 120°-130° | 8.5 | 2.2 |
| 130°-140° | 11.5 | 3.0 |
| 140°-150° | 22.4 | 5.9 |
| 150°-160° | 82.5 | 21.9 |
| 160°-170° | 160.6 | 42.6 |
| 170°-180° | 85.0 | 22.5 |
| 0°-30° | 0.0 | 0.0 |
| 0°-40° | 0.0 | 0.0 |
| 0°-60° | 0.0 | 0.0 |
| 0°-90° | 0.0 | 0.0 |
| 90°-120° | 6.7 | 1.8 |
| 90°-150° | 49.1 | 13.0 |
| 90°-180° | 377.0 | 100.0 |
| 0°-180° | 377.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|------|-----|------|
| 0° | 0 | |
| 5° | 0 | 0 |
| 15° | 0 | 0 |
| 25° | 0 | 0 |
| 35° | 0 | 0 |
| 45° | 0 | 0 |
| 55° | 0 | 0 |
| 65° | 0 | 0 |
| 75° | 0 | 0 |
| 85° | 0 | 0 |
| 90° | 0 | 0 |
| 95° | 0 | 0 |
| 105° | 1 | 2 |
| 115° | 5 | 5 |
| 125° | 10 | 8 |
| 135° | 15 | 11 |
| 145° | 33 | 22 |
| 155° | 170 | 83 |
| 165° | 595 | 161 |
| 175° | 932 | 85 |
| 180° | 963 | |



TEST NUMBER: P871421
CATALOG NUMBER: 650-RD-8LED4036-12-* -FG

CANDELA DISTRIBUTION (FULL):

| | 0° |
|--------|-----|
| 0° | 0.0 |
| 2.5° | 0.0 |
| 5° | 0.0 |
| 7.5° | 0.0 |
| 10° | 0.0 |
| 12.5° | 0.0 |
| 15° | 0.0 |
| 17.5° | 0.0 |
| 20° | 0.0 |
| 22.5° | 0.0 |
| 25° | 0.0 |
| 27.5° | 0.0 |
| 30° | 0.0 |
| 32.5° | 0.0 |
| 35° | 0.0 |
| 37.5° | 0.0 |
| 40° | 0.0 |
| 42.5° | 0.0 |
| 45° | 0.0 |
| 47.5° | 0.0 |
| 50° | 0.0 |
| 52.5° | 0.0 |
| 55° | 0.0 |
| 57.5° | 0.0 |
| 60° | 0.0 |
| 62.5° | 0.0 |
| 65° | 0.0 |
| 67.5° | 0.0 |
| 70° | 0.0 |
| 72.5° | 0.0 |
| 75° | 0.0 |
| 77.5° | 0.0 |
| 80° | 0.0 |
| 82.5° | 0.0 |
| 85° | 0.0 |
| 87.5° | 0.0 |
| 90° | 0.0 |
| 92.5° | 0.0 |
| 95° | 0.0 |
| 97.5° | 0.0 |
| 100° | 0.0 |
| 102.5° | 1.1 |
| 105° | 1.1 |
| 107.5° | 2.1 |
| 110° | 3.2 |



TEST NUMBER: P871421
CATALOG NUMBER: 650-RD-8LED4036-12-*-FG

CANDELA DISTRIBUTION (continued):

| | 0° |
|--------|-------|
| 112.5° | 4.2 |
| 115° | 5.2 |
| 117.5° | 6.3 |
| 120° | 7.4 |
| 122.5° | 8.4 |
| 125° | 9.5 |
| 127.5° | 10.5 |
| 130° | 11.6 |
| 132.5° | 12.6 |
| 135° | 14.7 |
| 137.5° | 16.8 |
| 140° | 19.9 |
| 142.5° | 24.2 |
| 145° | 32.6 |
| 147.5° | 45.1 |
| 150° | 68.2 |
| 152.5° | 109.2 |
| 155° | 170.1 |
| 157.5° | 254.1 |
| 160° | 359.1 |
| 162.5° | 474.6 |
| 165° | 595.4 |
| 166° | 641.6 |
| 167° | 685.6 |
| 168° | 726.6 |
| 169° | 767.6 |
| 170° | 805.4 |
| 171° | 840.0 |
| 172° | 871.5 |
| 173° | 894.6 |
| 174° | 915.6 |
| 175° | 932.4 |
| 176° | 945.0 |
| 177° | 954.5 |
| 178° | 959.7 |
| 179° | 960.8 |
| 180° | 962.9 |

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1121 Highway 74 South
Peachtree City, GA 30269



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

Report Prepared for

Cooper Lighting Solutions

LUMIERE

Report Number: SP1-2403-332-3

Test Date: 03/20/2024

Luminaire Tested: 650-RD-8LED4036-12-*

Data in this report applies to families of products 650-RD-8LED4036-12-*.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2403-332-3
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 03/21/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: LUMIERE
 Catalog Number: **650-RD-8LED4036-12-***
 Description: BOCA 650 ROUND W/36 DEG SPOT.

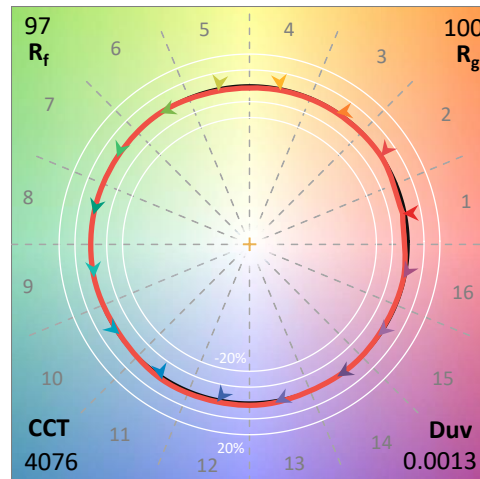
Spectral Parameters

CCT (K): 4076
 CIE u': 0.2230
 CIE v': 0.5017
 Duv: 0.0013
 CIE x: 0.3779
 CIE y: 0.3779
 CIE z: 0.2442
 Peak Wavelength (nm): 622
 Dominant Wavelength (nm): 578
 Purity: 27

CRI (Ra): 98.6
 R1: 99.7
 R2: 99.6
 R3: 98.0
 R4: 99.7
 R5: 99.0
 R6: 98.9
 R7: 98.0
 R8: 95.6

R9: 88.5
 R10: 97.8
 R11: 98.3
 R12: 88.8
 R13: 99.6
 R14: 98.2

Rf: 97.3
 Rg: 99.6



Test Conditions

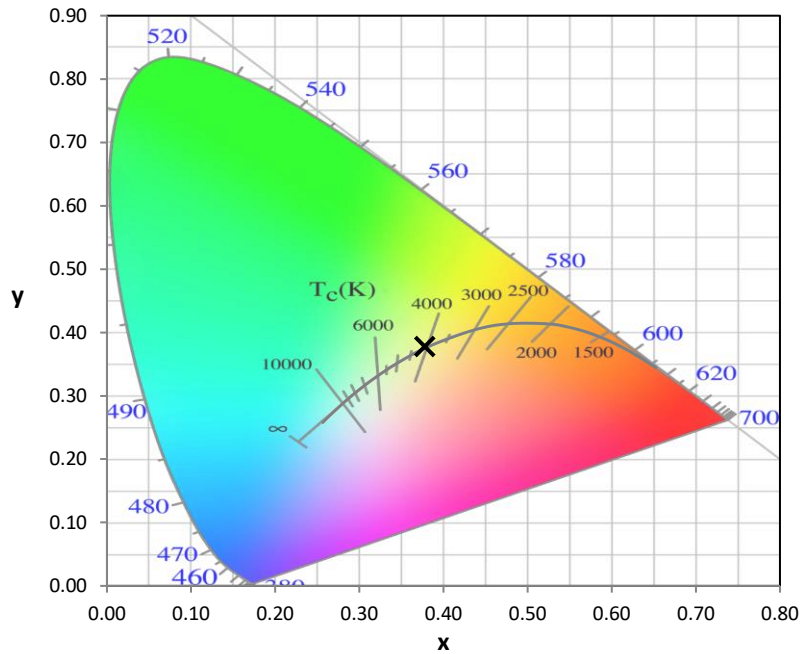
Stabilization Time: 23M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.8/43%
 Sphere Temperature (°C): 25.0

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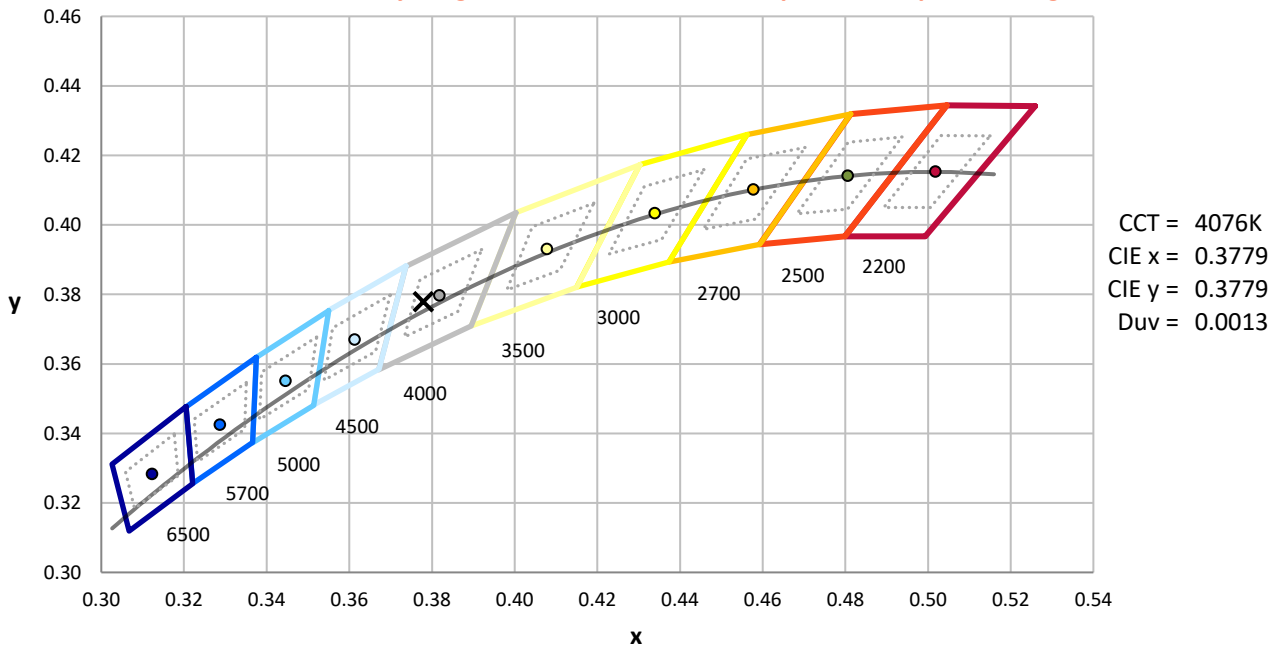
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 2/12/2024 | 8/12/2024 |
| Power Meter | XITRON 2801 IN0071 | 10/23/2023 | 10/23/2024 |
| AC Power Source | CHROMA 61603 IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | AGILENT E3634A IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | ONSET IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | ONSET IN0046 | 10/24/2023 | 10/24/2024 |

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CIE 1931 Chromaticity Diagram



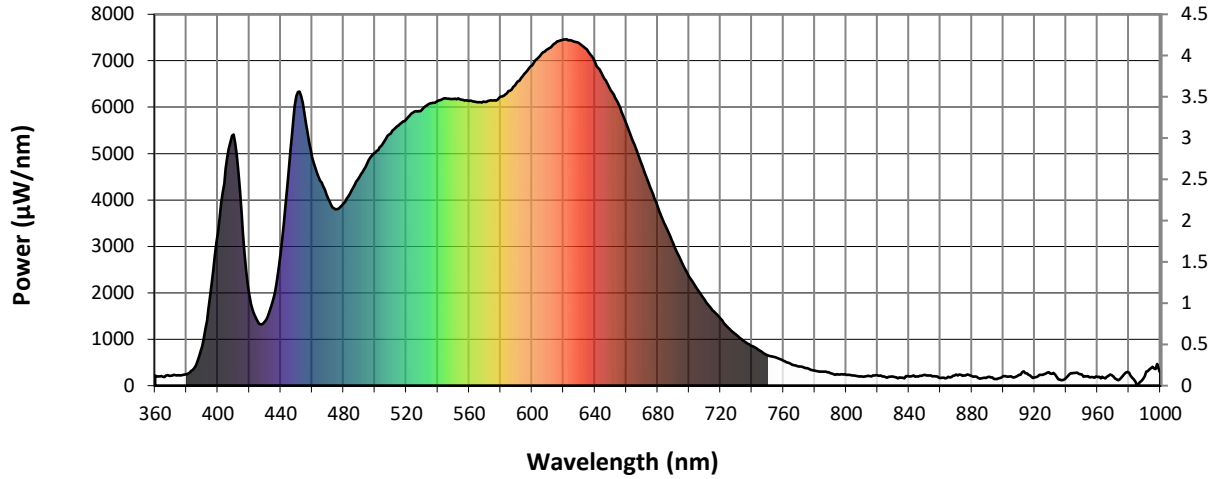
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

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Photopic Flux vs. Wavelength

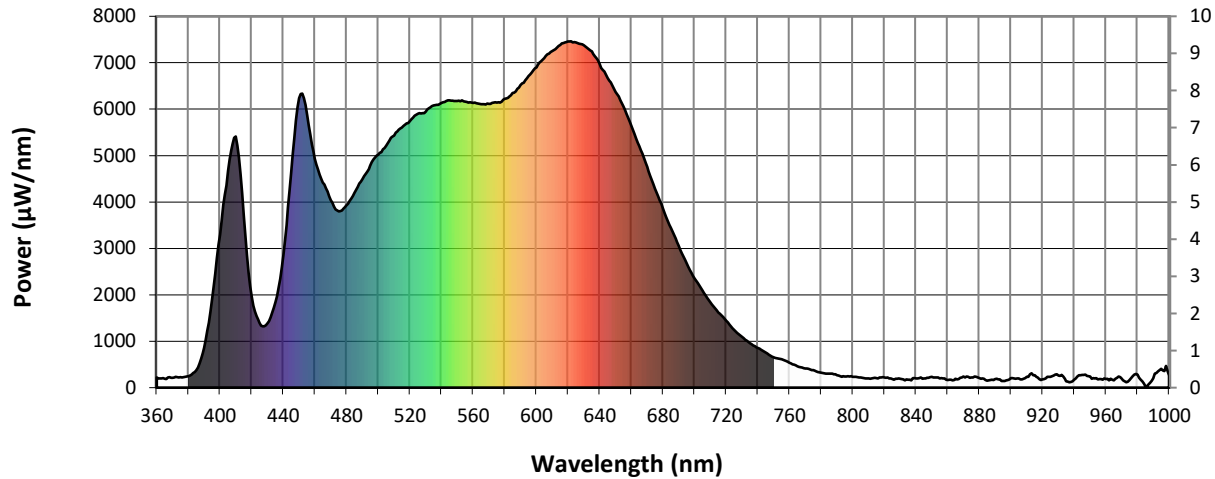


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| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 218 | NR | 490 | 4495 | NR | 620 | 7456 | NR | 750 | 655 | NR | 880 | 208 | NR |
| 365 | 189 | NR | 495 | 4785 | NR | 625 | 7438 | NR | 755 | 610 | NR | 885 | 147 | NR |
| 370 | 210 | NR | 500 | 5021 | NR | 630 | 7376 | NR | 760 | 539 | NR | 890 | 182 | NR |
| 375 | 227 | NR | 505 | 5210 | NR | 635 | 7246 | NR | 765 | 460 | NR | 895 | 144 | NR |
| 380 | 248 | NR | 510 | 5432 | NR | 640 | 6973 | NR | 770 | 414 | NR | 900 | 203 | NR |
| 385 | 374 | NR | 515 | 5607 | NR | 645 | 6672 | NR | 775 | 377 | NR | 905 | 199 | NR |
| 390 | 851 | NR | 520 | 5743 | NR | 650 | 6372 | NR | 780 | 321 | NR | 910 | 230 | NR |
| 395 | 1903 | NR | 525 | 5900 | NR | 655 | 6064 | NR | 785 | 299 | NR | 915 | 265 | NR |
| 400 | 3297 | NR | 530 | 5949 | NR | 660 | 5643 | NR | 790 | 269 | NR | 920 | 179 | NR |
| 405 | 4670 | NR | 535 | 6076 | NR | 665 | 5203 | NR | 795 | 241 | NR | 925 | 235 | NR |
| 410 | 5410 | NR | 540 | 6134 | NR | 670 | 4755 | NR | 800 | 234 | NR | 930 | 262 | NR |
| 415 | 3713 | NR | 545 | 6191 | NR | 675 | 4287 | NR | 805 | 219 | NR | 935 | 135 | NR |
| 420 | 1953 | NR | 550 | 6175 | NR | 680 | 3857 | NR | 810 | 198 | NR | 940 | 169 | NR |
| 425 | 1400 | NR | 555 | 6159 | NR | 685 | 3441 | NR | 815 | 206 | NR | 945 | 272 | NR |
| 430 | 1382 | NR | 560 | 6134 | NR | 690 | 3060 | NR | 820 | 221 | NR | 950 | 238 | NR |
| 435 | 1842 | NR | 565 | 6105 | NR | 695 | 2677 | NR | 825 | 182 | NR | 955 | 177 | NR |
| 440 | 2859 | NR | 570 | 6114 | NR | 700 | 2351 | NR | 830 | 195 | NR | 960 | 186 | NR |
| 445 | 4620 | NR | 575 | 6144 | NR | 705 | 2088 | NR | 835 | 169 | NR | 965 | 157 | NR |
| 450 | 6237 | NR | 580 | 6223 | NR | 710 | 1843 | NR | 840 | 200 | NR | 970 | 196 | NR |
| 455 | 5882 | NR | 585 | 6347 | NR | 715 | 1618 | NR | 845 | 197 | NR | 975 | 166 | NR |
| 460 | 4931 | NR | 590 | 6520 | NR | 720 | 1439 | NR | 850 | 232 | NR | 980 | 283 | NR |
| 465 | 4417 | NR | 595 | 6710 | NR | 725 | 1249 | NR | 855 | 201 | NR | 985 | 28 | NR |
| 470 | 4041 | NR | 600 | 6901 | NR | 730 | 1095 | NR | 860 | 167 | NR | 990 | 197 | NR |
| 475 | 3797 | NR | 605 | 7096 | NR | 735 | 959 | NR | 865 | 191 | NR | 995 | 404 | NR |
| 480 | 3925 | NR | 610 | 7250 | NR | 740 | 852 | NR | 870 | 241 | NR | 1000 | 262 | NR |
| 485 | 4197 | NR | 615 | 7383 | NR | 745 | 755 | NR | 875 | 218 | NR | | | |

REPORT NUMBER: SP1-2403-332-3

Scotopic Flux vs. Wavelength



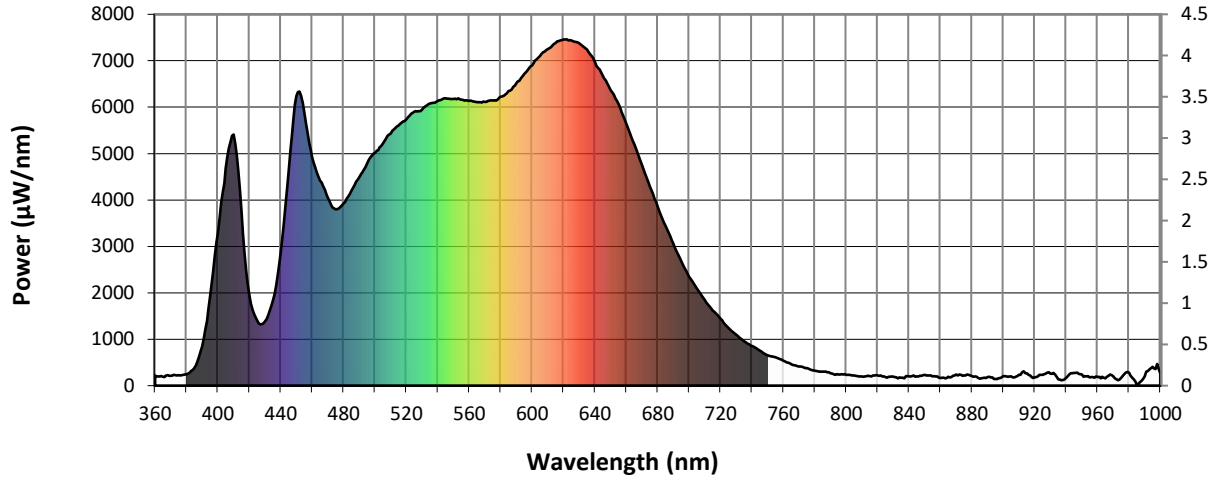
Scotopic Lumens: 843.6

S/P: 1.88

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|
| 360 | 218 | NR | 490 | 4495 | NR | 620 | 7456 | NR | 750 | 655 | NR | 880 | 208 | NR |
| 365 | 189 | NR | 495 | 4785 | NR | 625 | 7438 | NR | 755 | 610 | NR | 885 | 147 | NR |
| 370 | 210 | NR | 500 | 5021 | NR | 630 | 7376 | NR | 760 | 539 | NR | 890 | 182 | NR |
| 375 | 227 | NR | 505 | 5210 | NR | 635 | 7246 | NR | 765 | 460 | NR | 895 | 144 | NR |
| 380 | 248 | NR | 510 | 5432 | NR | 640 | 6973 | NR | 770 | 414 | NR | 900 | 203 | NR |
| 385 | 374 | NR | 515 | 5607 | NR | 645 | 6672 | NR | 775 | 377 | NR | 905 | 199 | NR |
| 390 | 851 | NR | 520 | 5743 | NR | 650 | 6372 | NR | 780 | 321 | NR | 910 | 230 | NR |
| 395 | 1903 | NR | 525 | 5900 | NR | 655 | 6064 | NR | 785 | 299 | NR | 915 | 265 | NR |
| 400 | 3297 | NR | 530 | 5949 | NR | 660 | 5643 | NR | 790 | 269 | NR | 920 | 179 | NR |
| 405 | 4670 | NR | 535 | 6076 | NR | 665 | 5203 | NR | 795 | 241 | NR | 925 | 235 | NR |
| 410 | 5410 | NR | 540 | 6134 | NR | 670 | 4755 | NR | 800 | 234 | NR | 930 | 262 | NR |
| 415 | 3713 | NR | 545 | 6191 | NR | 675 | 4287 | NR | 805 | 219 | NR | 935 | 135 | NR |
| 420 | 1953 | NR | 550 | 6175 | NR | 680 | 3857 | NR | 810 | 198 | NR | 940 | 169 | NR |
| 425 | 1400 | NR | 555 | 6159 | NR | 685 | 3441 | NR | 815 | 206 | NR | 945 | 272 | NR |
| 430 | 1382 | NR | 560 | 6134 | NR | 690 | 3060 | NR | 820 | 221 | NR | 950 | 238 | NR |
| 435 | 1842 | NR | 565 | 6105 | NR | 695 | 2677 | NR | 825 | 182 | NR | 955 | 177 | NR |
| 440 | 2859 | NR | 570 | 6114 | NR | 700 | 2351 | NR | 830 | 195 | NR | 960 | 186 | NR |
| 445 | 4620 | NR | 575 | 6144 | NR | 705 | 2088 | NR | 835 | 169 | NR | 965 | 157 | NR |
| 450 | 6237 | NR | 580 | 6223 | NR | 710 | 1843 | NR | 840 | 200 | NR | 970 | 196 | NR |
| 455 | 5882 | NR | 585 | 6347 | NR | 715 | 1618 | NR | 845 | 197 | NR | 975 | 166 | NR |
| 460 | 4931 | NR | 590 | 6520 | NR | 720 | 1439 | NR | 850 | 232 | NR | 980 | 283 | NR |
| 465 | 4417 | NR | 595 | 6710 | NR | 725 | 1249 | NR | 855 | 201 | NR | 985 | 28 | NR |
| 470 | 4041 | NR | 600 | 6901 | NR | 730 | 1095 | NR | 860 | 167 | NR | 990 | 197 | NR |
| 475 | 3797 | NR | 605 | 7096 | NR | 735 | 959 | NR | 865 | 191 | NR | 995 | 404 | NR |
| 480 | 3925 | NR | 610 | 7250 | NR | 740 | 852 | NR | 870 | 241 | NR | 1000 | 262 | NR |
| 485 | 4197 | NR | 615 | 7383 | NR | 745 | 755 | NR | 875 | 218 | NR | | | |

REPORT NUMBER: SP1-2403-332-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: 351.5 M/P: 0.78

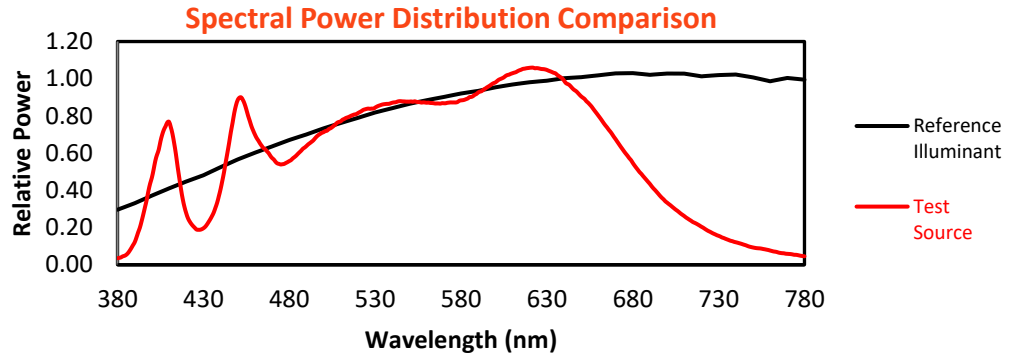
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 218 | NR | 490 | 4495 | NR | 620 | 7456 | NR | 750 | 655 | NR | 880 | 208 | NR |
| 365 | 189 | NR | 495 | 4785 | NR | 625 | 7438 | NR | 755 | 610 | NR | 885 | 147 | NR |
| 370 | 210 | NR | 500 | 5021 | NR | 630 | 7376 | NR | 760 | 539 | NR | 890 | 182 | NR |
| 375 | 227 | NR | 505 | 5210 | NR | 635 | 7246 | NR | 765 | 460 | NR | 895 | 144 | NR |
| 380 | 248 | NR | 510 | 5432 | NR | 640 | 6973 | NR | 770 | 414 | NR | 900 | 203 | NR |
| 385 | 374 | NR | 515 | 5607 | NR | 645 | 6672 | NR | 775 | 377 | NR | 905 | 199 | NR |
| 390 | 851 | NR | 520 | 5743 | NR | 650 | 6372 | NR | 780 | 321 | NR | 910 | 230 | NR |
| 395 | 1903 | NR | 525 | 5900 | NR | 655 | 6064 | NR | 785 | 299 | NR | 915 | 265 | NR |
| 400 | 3297 | NR | 530 | 5949 | NR | 660 | 5643 | NR | 790 | 269 | NR | 920 | 179 | NR |
| 405 | 4670 | NR | 535 | 6076 | NR | 665 | 5203 | NR | 795 | 241 | NR | 925 | 235 | NR |
| 410 | 5410 | NR | 540 | 6134 | NR | 670 | 4755 | NR | 800 | 234 | NR | 930 | 262 | NR |
| 415 | 3713 | NR | 545 | 6191 | NR | 675 | 4287 | NR | 805 | 219 | NR | 935 | 135 | NR |
| 420 | 1953 | NR | 550 | 6175 | NR | 680 | 3857 | NR | 810 | 198 | NR | 940 | 169 | NR |
| 425 | 1400 | NR | 555 | 6159 | NR | 685 | 3441 | NR | 815 | 206 | NR | 945 | 272 | NR |
| 430 | 1382 | NR | 560 | 6134 | NR | 690 | 3060 | NR | 820 | 221 | NR | 950 | 238 | NR |
| 435 | 1842 | NR | 565 | 6105 | NR | 695 | 2677 | NR | 825 | 182 | NR | 955 | 177 | NR |
| 440 | 2859 | NR | 570 | 6114 | NR | 700 | 2351 | NR | 830 | 195 | NR | 960 | 186 | NR |
| 445 | 4620 | NR | 575 | 6144 | NR | 705 | 2088 | NR | 835 | 169 | NR | 965 | 157 | NR |
| 450 | 6237 | NR | 580 | 6223 | NR | 710 | 1843 | NR | 840 | 200 | NR | 970 | 196 | NR |
| 455 | 5882 | NR | 585 | 6347 | NR | 715 | 1618 | NR | 845 | 197 | NR | 975 | 166 | NR |
| 460 | 4931 | NR | 590 | 6520 | NR | 720 | 1439 | NR | 850 | 232 | NR | 980 | 283 | NR |
| 465 | 4417 | NR | 595 | 6710 | NR | 725 | 1249 | NR | 855 | 201 | NR | 985 | 28 | NR |
| 470 | 4041 | NR | 600 | 6901 | NR | 730 | 1095 | NR | 860 | 167 | NR | 990 | 197 | NR |
| 475 | 3797 | NR | 605 | 7096 | NR | 735 | 959 | NR | 865 | 191 | NR | 995 | 404 | NR |
| 480 | 3925 | NR | 610 | 7250 | NR | 740 | 852 | NR | 870 | 241 | NR | 1000 | 262 | NR |
| 485 | 4197 | NR | 615 | 7383 | NR | 745 | 755 | NR | 875 | 218 | NR | | | |

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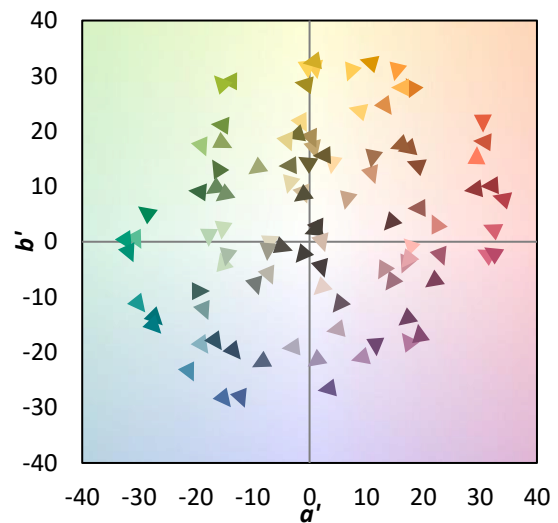
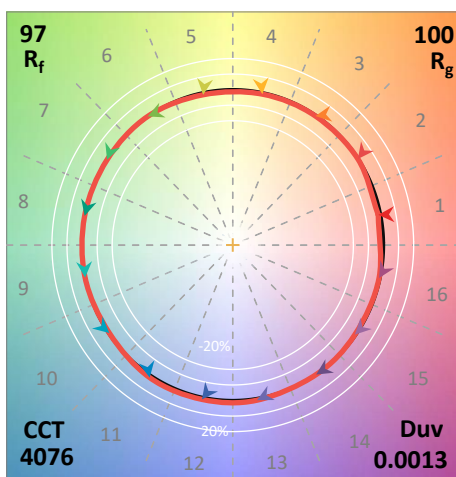
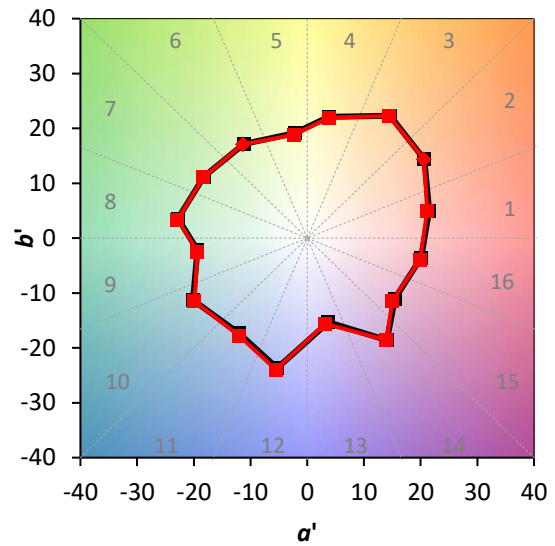
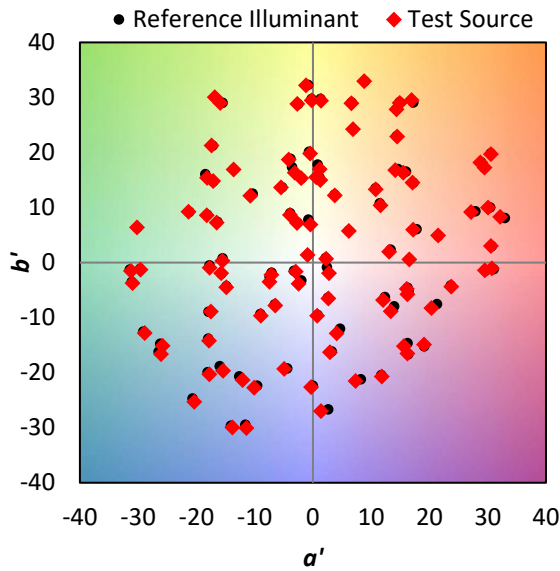
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Summary

$R_f = 97.3$
 $R_g = 99.6$
 $CIE R_a = 98.6$
 $R_9 = 88.5$



Color Vector Graphics

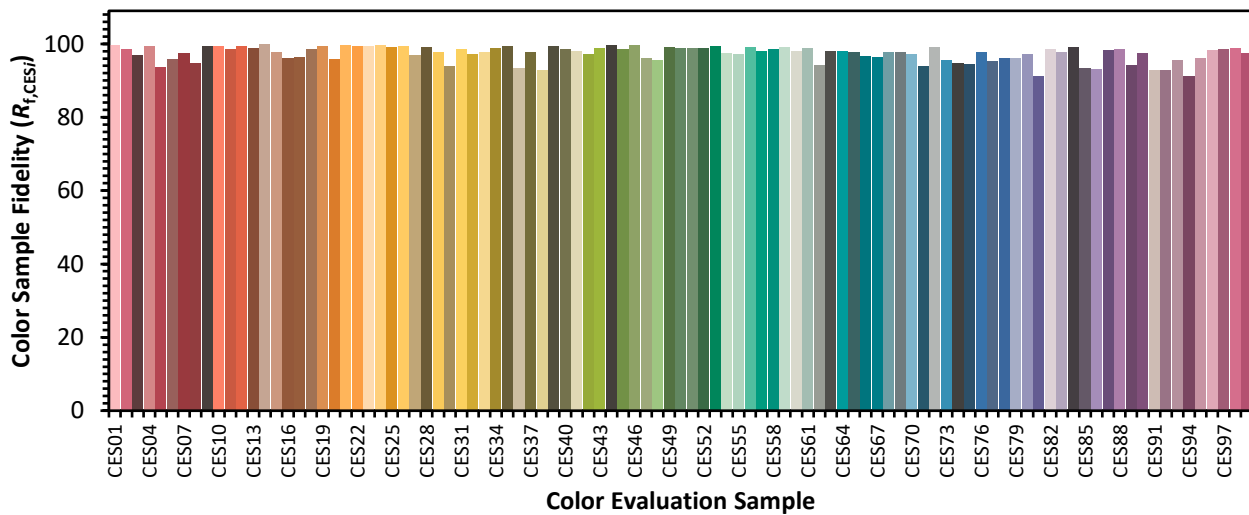


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Individual Sample Fidelity Index ($R_{f,i}$)

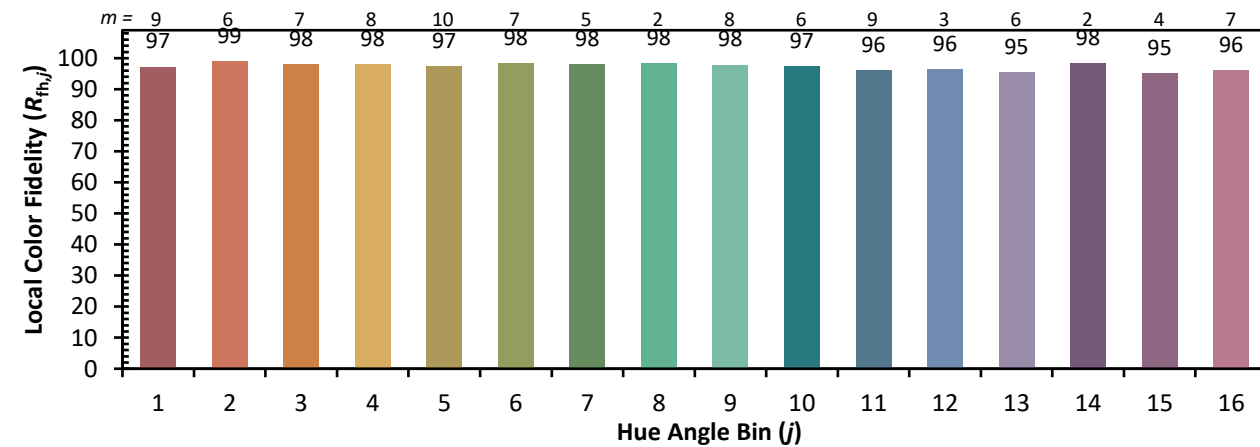
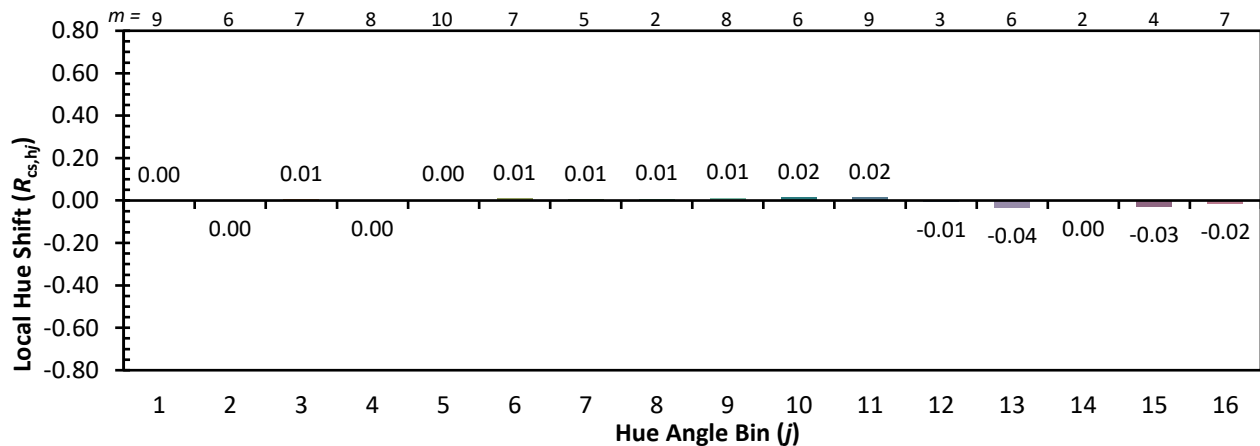
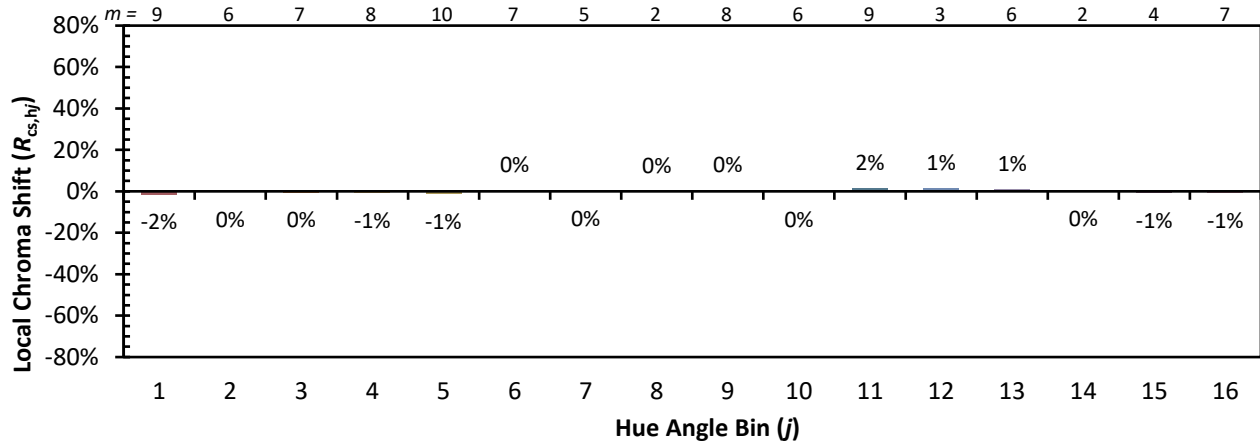
| | | | |
|------------|-------------|------------|------------|
| CES01 = 85 | CES26 = 99 | CES51 = 99 | CES76 = 98 |
| CES02 = 62 | CES27 = 97 | CES52 = 99 | CES77 = 95 |
| CES03 = 31 | CES28 = 99 | CES53 = 99 | CES78 = 96 |
| CES04 = 69 | CES29 = 98 | CES54 = 97 | CES79 = 96 |
| CES05 = 49 | CES30 = 94 | CES55 = 97 | CES80 = 97 |
| CES06 = 50 | CES31 = 98 | CES56 = 99 | CES81 = 91 |
| CES07 = 42 | CES32 = 97 | CES57 = 98 | CES82 = 99 |
| CES08 = 41 | CES33 = 98 | CES58 = 99 | CES83 = 98 |
| CES09 = 29 | CES34 = 99 | CES59 = 99 | CES84 = 99 |
| CES10 = 74 | CES35 = 99 | CES60 = 98 | CES85 = 93 |
| CES11 = 57 | CES36 = 93 | CES61 = 99 | CES86 = 93 |
| CES12 = 63 | CES37 = 98 | CES62 = 94 | CES87 = 98 |
| CES13 = 43 | CES38 = 93 | CES63 = 98 | CES88 = 99 |
| CES14 = 74 | CES39 = 99 | CES64 = 98 | CES89 = 94 |
| CES15 = 71 | CES40 = 99 | CES65 = 98 | CES90 = 97 |
| CES16 = 47 | CES41 = 98 | CES66 = 97 | CES91 = 93 |
| CES17 = 49 | CES42 = 97 | CES67 = 96 | CES92 = 93 |
| CES18 = 56 | CES43 = 99 | CES68 = 98 | CES93 = 96 |
| CES19 = 70 | CES44 = 100 | CES69 = 98 | CES94 = 91 |
| CES20 = 66 | CES45 = 99 | CES70 = 97 | CES95 = 96 |
| CES21 = 85 | CES46 = 100 | CES71 = 94 | CES96 = 98 |
| CES22 = 77 | CES47 = 96 | CES72 = 99 | CES97 = 99 |
| CES23 = 91 | CES48 = 95 | CES73 = 96 | CES98 = 99 |
| CES24 = 90 | CES49 = 99 | CES74 = 95 | CES99 = 97 |
| CES25 = 70 | CES50 = 99 | CES75 = 94 | |



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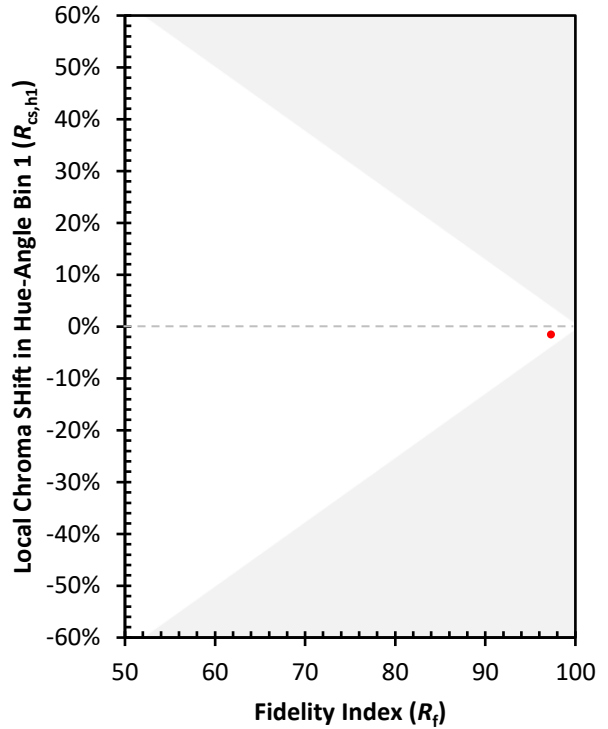
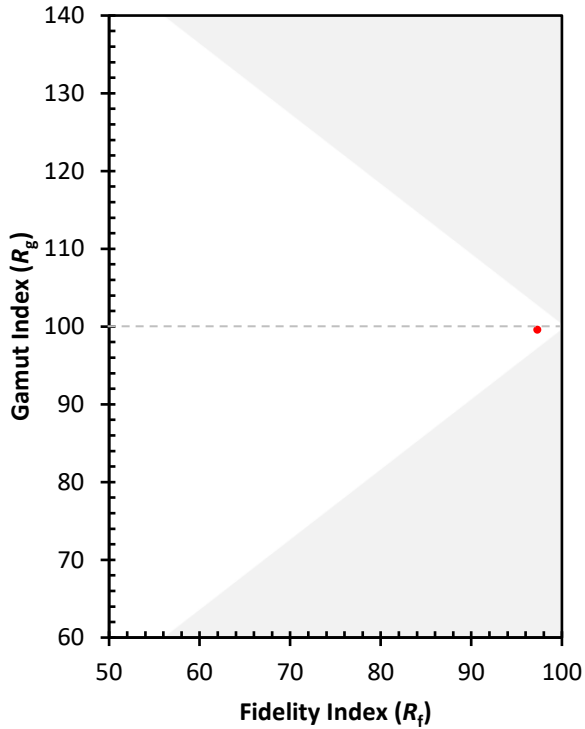
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)