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: STREETWORKS

Report Number: P981304

Luminaire Tested: **FFX-CLB-40-740-U-VM9-T5**

Issue Date: 04/15/2025

Report Generated By 670245763

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P981304 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 04/15/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | STREETWORKS |
| Catalog Number: | FFX-CLB-40-740-U-VM9-T5 |
| Description: | FAIRFAX POST TOP FIXTURE w/ ULA ACORN 9 INCH NECK |
| Light Source: | (6) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6896.4 lumens |
| Efficiency: | N/A |
| Efficacy: | 175.0 lumens/watt |
| Luminous Opening: | Vertical Cylinder (Dia: 1.33' x H: 2.08') |
| IES Classification: | Type V - Short |
| BUG Rating: | B2 - U5 - G3 |

| | |
|---|---|
| Input Watts (W): | 39.4 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.99 |
| Total Harmonic Distortion (THDi): | 8.2% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

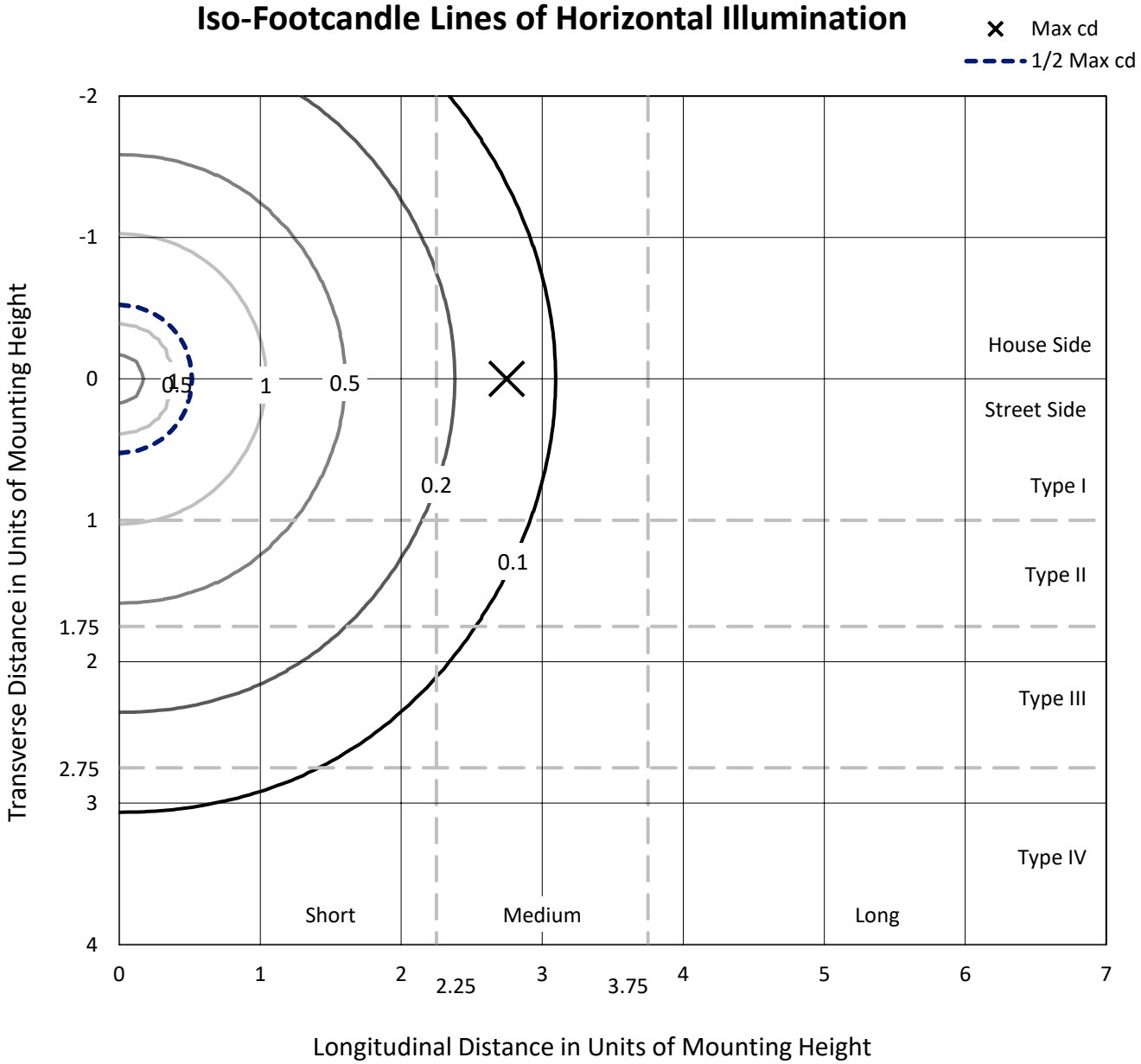


Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P981304
CATALOG NUMBER: FFX-CLB-40-740-U-VM9-T5

## Iso-Footcandle Lines of Horizontal Illumination



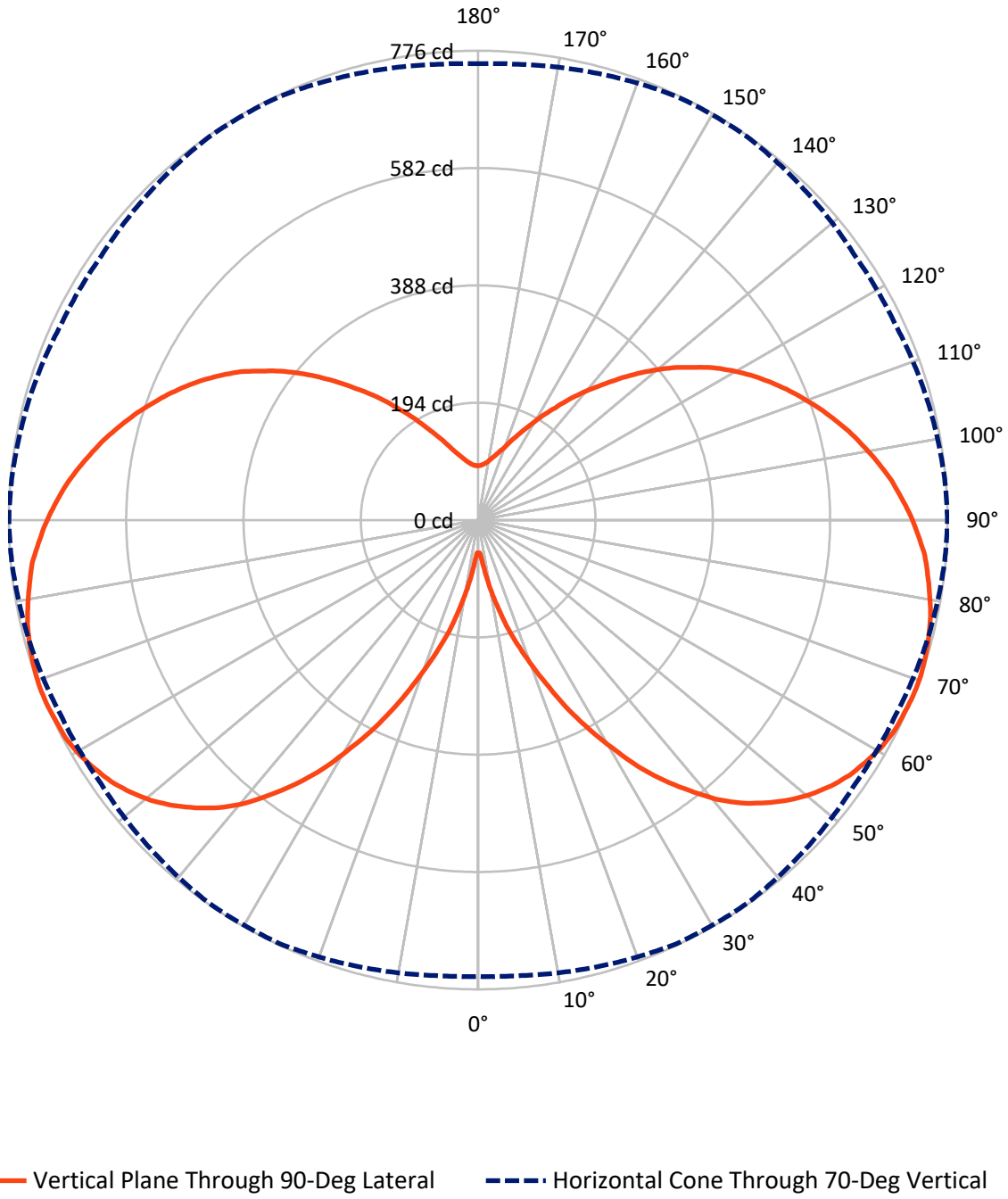

Based on 15 foot mounting height. Maximum calculated value = 1.3 fc
Type V - Short - N/A

Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

REPORT NUMBER: P981304
CATALOG NUMBER: FFX-CLB-40-740-U-VM9-T5

## Luminous Intensity Polar Plot



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Scaled Data Report

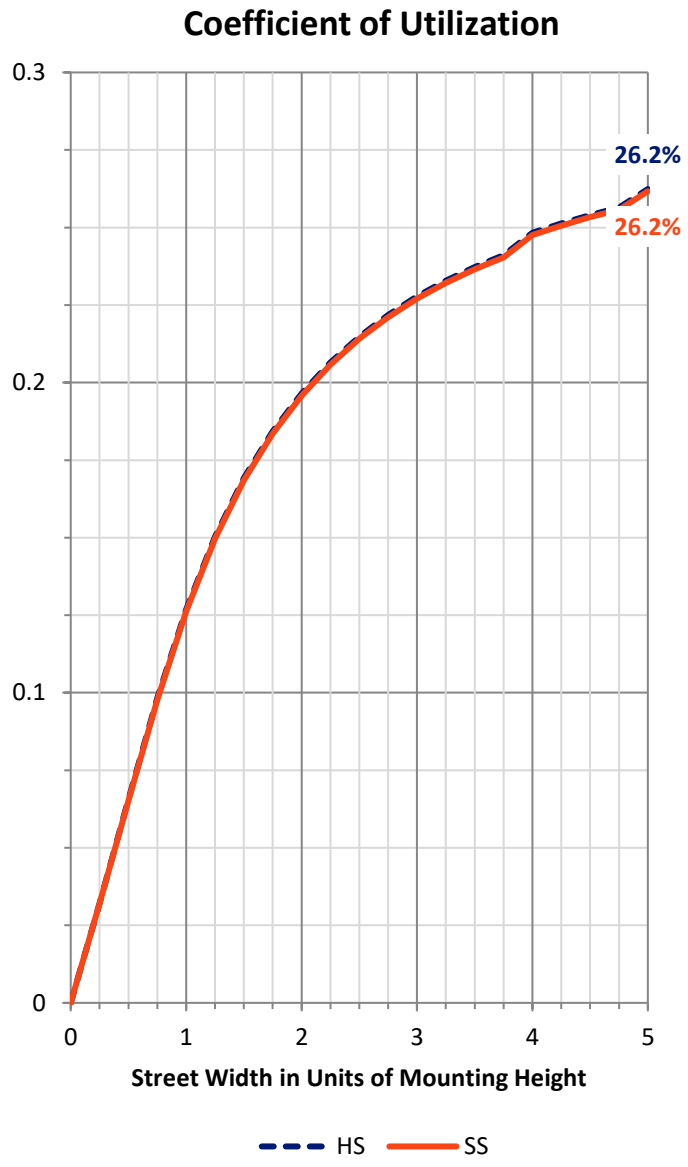
REPORT NUMBER: P981304
CATALOG NUMBER: FFX-CLB-40-740-U-VM9-T5

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2041.5 | 1406.7 | 3448.2 |
| | % Fixture | 29.6 | 20.4 | 50.0 |
| **Street Side** | Lumens | 2041.5 | 1406.7 | 3448.2 |
| | % Fixture | 29.6 | 20.4 | 50.0 |
| **Total** | Lumens | 4083.0 | 2813.3 | 6896.4 |
| | % Fixture | 59.2 | 40.8 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 8.1 | 0.1 |
| 10°-20° | 55.1 | 0.8 |
| 20°-30° | 161.8 | 2.3 |
| 30°-40° | 329.1 | 4.8 |
| 40°-50° | 510.7 | 7.4 |
| 50°-60° | 659.5 | 9.6 |
| 60°-70° | 758.3 | 11.0 |
| 70°-80° | 803.6 | 11.7 |
| 80°-90° | 796.9 | 11.6 |
| 90°-100° | 740.8 | 10.7 |
| 100°-110° | 645.8 | 9.4 |
| 110°-120° | 527.4 | 7.6 |
| 120°-130° | 391.0 | 5.7 |
| 130°-140° | 253.1 | 3.7 |
| 140°-150° | 143.2 | 2.1 |
| 150°-160° | 71.4 | 1.0 |
| 160°-170° | 31.7 | 0.5 |
| 170°-180° | 9.0 | 0.1 |
| 0°-90° | 4083.0 | 59.2 |
| 0°-180° | 6896.4 | 100.0 |



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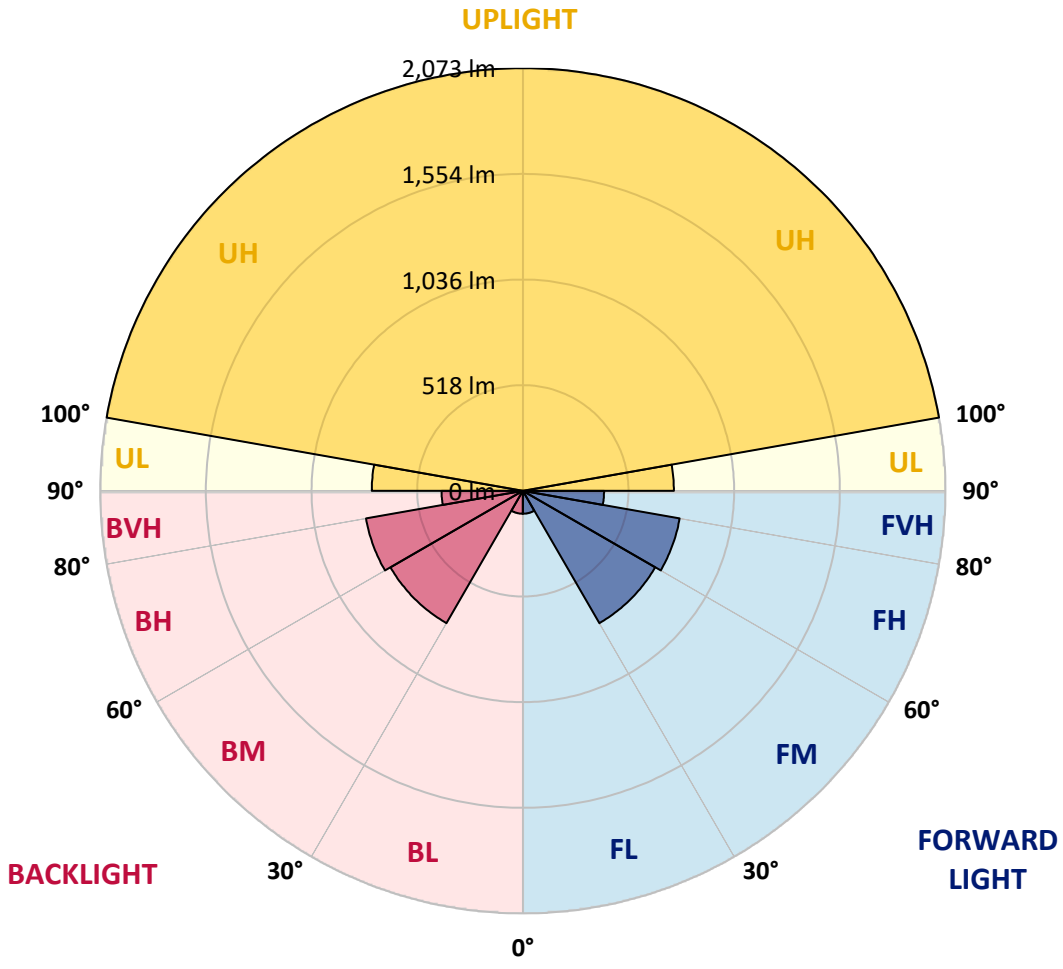
Scaled Data Report

REPORT NUMBER: P981304
CATALOG NUMBER: FFX-CLB-40-740-U-VM9-T5

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 112.5 | 1.6 | | | |
| FM | (30°-60°) | 749.6 | 10.9 | | | |
| FH | (60°-80°) | 780.9 | 11.3 | | | G1/1800 |
| FVH | (80°-90°) | 398.4 | 5.8 | | | G3/500 |
| BL | (0°-30°) | 112.5 | 1.6 | B1/500 | | |
| BM | (30°-60°) | 749.6 | 10.9 | B1/1000 | | |
| BH | (60°-80°) | 780.9 | 11.3 | B2/1000 | | G1/1800 |
| BVH | (80°-90°) | 398.4 | 5.8 | | | G3/500 |
| UL | (90°-100°) | 740.8 | 10.7 | | U4/1000 | |
| UH | (100°-180°) | 2072.5 | 30.1 | | U5 | |

**BUG Rating: B2-U5-G3**
Type V Short



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Scaled Data Report

REPORT NUMBER: P981304
CATALOG NUMBER: FFX-CLB-40-740-U-VM9-T5

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 54.8 | 54.8 | 54.8 | 54.8 | 54.8 | 54.8 | 54.8 | 54.8 | 54.8 | 54.8 | *54.8* |
| 2.5° | 54.8 | 54.8 | 54.8 | 54.8 | 54.4 | 54.4 | 54.4 | 54.4 | 54.4 | 54.4 | *54.4* |
| 5° | 67.7 | 67.3 | 67.3 | 67.7 | 67.7 | 67.7 | 67.3 | 67.7 | 66.8 | 66.4 | *67.3* |
| 7.5° | 90.8 | 90.8 | 90.8 | 90.8 | 90.0 | 90.0 | 91.3 | 90.4 | 90.8 | 90.4 | *91.3* |
| 10° | 118.7 | 118.7 | 118.3 | 119.1 | 119.6 | 119.1 | 118.7 | 120.0 | 119.1 | 119.1 | *120.0* |
| 12.5° | 150.4 | 150.8 | 150.8 | 151.3 | 152.1 | 150.8 | 152.1 | 152.1 | 152.1 | 151.3 | *150.8* |
| 15° | 186.8 | 186.4 | 187.3 | 186.8 | 185.1 | 186.8 | 187.3 | 186.4 | 186.8 | 187.3 | *187.7* |
| 17.5° | 220.7 | 220.3 | 220.7 | 220.3 | 222.0 | 222.4 | 222.0 | 222.0 | 222.0 | 222.4 | *221.5* |
| 20° | 258.0 | 258.4 | 257.1 | 258.4 | 258.4 | 259.2 | 261.0 | 260.5 | 261.0 | 259.7 | *258.4* |
| 22.5° | 298.7 | 299.1 | 297.8 | 297.4 | 300.0 | 299.5 | 299.5 | 300.8 | 301.7 | 301.7 | *300.8* |
| 25° | 342.4 | 341.5 | 341.5 | 342.8 | 342.8 | 342.4 | 344.5 | 345.4 | 344.9 | 346.2 | *347.1* |
| 27.5° | 386.1 | 385.2 | 385.2 | 386.9 | 386.9 | 386.9 | 386.9 | 390.8 | 391.2 | 392.1 | *392.5* |
| 30° | 428.5 | 431.5 | 431.5 | 430.6 | 431.9 | 434.1 | 435.4 | 435.4 | 436.6 | 436.6 | *437.1* |
| 32.5° | 474.8 | 474.8 | 475.6 | 476.9 | 476.9 | 480.8 | 478.6 | 482.1 | 481.2 | 483.8 | *485.5* |
| 35° | 518.5 | 519.3 | 519.3 | 521.9 | 521.9 | 522.8 | 523.2 | 525.3 | 528.3 | 527.9 | *528.3* |
| 37.5° | 559.2 | 558.8 | 557.9 | 561.8 | 562.6 | 562.2 | 562.6 | 566.1 | 566.9 | 568.2 | *567.3* |
| 40° | 596.5 | 595.2 | 597.3 | 599.5 | 599.5 | 600.3 | 601.2 | 602.9 | 604.6 | 605.5 | *606.8* |
| 42.5° | 627.8 | 627.3 | 629.5 | 631.2 | 631.6 | 632.0 | 632.0 | 633.3 | 637.6 | 638.9 | *639.8* |
| 45° | 655.2 | 654.8 | 657.3 | 659.5 | 660.8 | 660.8 | 659.5 | 661.2 | 665.0 | 666.3 | *666.8* |
| 47.5° | 678.8 | 679.2 | 682.6 | 685.2 | 686.0 | 684.8 | 683.9 | 685.6 | 688.6 | 692.0 | *691.6* |
| 50° | 698.5 | 698.9 | 702.7 | 707.0 | 707.5 | 706.2 | 704.0 | 705.3 | 709.6 | 712.2 | *712.6* |
| 52.5° | 715.2 | 715.6 | 720.3 | 724.6 | 725.0 | 722.9 | 720.3 | 722.5 | 726.3 | 729.3 | *730.2* |
| 55° | 728.5 | 729.7 | 734.5 | 739.2 | 740.5 | 737.5 | 734.0 | 735.3 | 739.6 | 744.3 | *744.7* |
| 57.5° | 738.3 | 738.7 | 744.7 | 749.9 | 751.6 | 747.3 | 744.7 | 744.7 | 749.9 | 754.2 | *755.0* |
| 60° | 745.2 | 746.9 | 753.7 | 759.7 | 760.6 | 756.7 | 752.0 | 752.9 | 758.5 | 763.2 | *764.5* |
| 62.5° | 751.2 | 752.9 | 759.3 | 766.6 | 767.5 | 762.3 | 757.6 | 758.0 | 764.5 | 769.2 | *770.9* |
| 65° | 754.2 | 755.5 | 763.2 | 770.5 | 771.3 | 766.2 | 760.6 | 761.0 | 767.0 | 772.6 | *773.0* |
| 67.5° | 755.0 | 756.3 | 764.5 | 773.0 | 773.5 | 767.9 | 761.5 | 762.7 | 768.7 | 774.3 | *775.2* |
| 70° | *754.2* | *755.9* | *764.0* | *773.0* | *773.9* | *767.0* | *760.6* | *761.5* | *768.3* | *773.9* | *775.6* |
| 72.5° | 751.2 | 753.3 | 761.5 | 770.9 | 771.3 | 764.9 | 758.5 | 758.5 | 766.2 | 772.2 | *773.0* |
| 75° | 747.3 | 749.5 | 758.5 | 767.9 | 768.3 | 761.5 | 754.6 | 755.5 | 762.7 | 768.3 | *769.2* |
| 77.5° | 743.0 | 744.3 | 753.3 | 763.2 | 764.0 | 756.7 | 749.9 | 750.7 | 757.6 | 763.6 | *764.5* |
| 80° | 736.2 | 737.5 | 746.9 | 756.3 | 757.2 | 749.9 | 742.6 | 744.3 | 751.2 | 756.7 | *756.7* |
| 82.5° | 728.0 | 728.9 | 738.3 | 748.6 | 749.0 | 741.7 | 735.3 | 736.2 | 743.0 | 748.6 | *748.6* |
| 85° | 718.6 | 719.9 | 729.3 | 739.2 | 739.2 | 732.3 | 725.5 | 727.2 | 733.6 | 738.7 | *740.5* |
| 87.5° | 708.3 | 708.7 | 718.2 | 727.2 | 727.6 | 720.7 | 714.7 | 716.0 | 722.5 | 727.2 | *727.6* |
| 90° | 696.3 | 697.2 | 706.2 | 714.7 | 715.2 | 708.3 | 702.7 | 704.5 | 709.6 | 713.9 | *715.2* |
| 92.5° | 683.0 | 684.3 | 692.9 | 701.0 | 700.6 | 694.6 | 689.9 | 692.0 | 696.3 | 700.6 | *700.6* |
| 95° | 669.3 | 671.0 | 677.9 | 685.6 | 684.8 | 679.6 | 675.8 | 677.5 | 681.8 | 685.2 | *686.0* |
| 97.5° | 654.8 | 655.2 | 662.5 | 668.0 | 668.0 | 663.3 | 660.3 | 661.6 | 665.9 | 668.0 | *668.9* |
| 100° | 638.9 | 639.3 | 644.9 | 650.5 | 650.5 | 646.2 | 644.0 | 645.3 | 648.8 | 650.5 | *650.9* |
| 102.5° | 623.0 | 622.6 | 627.3 | 632.0 | 632.0 | 628.6 | 626.9 | 629.5 | 631.2 | 632.5 | *633.3* |
| 105° | 605.0 | 604.6 | 608.9 | 613.2 | 612.3 | 610.2 | 608.5 | 610.6 | 612.8 | 613.6 | *613.6* |
| 107.5° | 585.3 | 587.1 | 589.6 | 593.1 | 592.6 | 590.9 | 590.9 | 592.2 | 593.5 | 593.9 | *594.3* |
| 110° | 568.6 | 568.2 | 570.8 | 572.5 | 572.9 | 572.1 | 572.9 | 573.3 | 573.8 | 573.8 | *573.8* |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P981304
CATALOG NUMBER: FFX-CLB-40-740-U-VM9-T5

**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 549.3 | 549.3 | 550.2 | 551.5 | 551.9 | 552.3 | 552.8 | 554.5 | 553.6 | 554.1 | *553.2* |
| 115° | 528.3 | 528.8 | 529.6 | 530.1 | 530.9 | 531.3 | 533.5 | 533.5 | 533.9 | 533.1 | *531.8* |
| 117.5° | 507.3 | 508.2 | 507.8 | 507.3 | 509.1 | 510.3 | 511.6 | 512.5 | 512.5 | 510.8 | *509.9* |
| 120° | 484.6 | 483.8 | 483.8 | 483.8 | 485.1 | 487.2 | 488.9 | 489.4 | 488.9 | 486.8 | *486.4* |
| 122.5° | 459.8 | 460.6 | 459.4 | 459.8 | 460.2 | 463.2 | 464.5 | 465.4 | 464.1 | 461.5 | *462.4* |
| 125° | 434.1 | 434.9 | 432.8 | 432.8 | 434.9 | 436.2 | 437.5 | 438.8 | 436.6 | 435.4 | *434.5* |
| 127.5° | 406.7 | 406.7 | 406.2 | 404.9 | 407.5 | 408.8 | 411.4 | 411.4 | 409.7 | 407.9 | *408.8* |
| 130° | 378.8 | 378.4 | 379.2 | 378.4 | 378.8 | 381.4 | 383.5 | 382.7 | 381.8 | 380.9 | *380.9* |
| 132.5° | 350.1 | 350.9 | 350.1 | 349.7 | 351.8 | 352.7 | 354.8 | 355.7 | 353.9 | 351.8 | *352.7* |
| 135° | 323.1 | 322.7 | 322.2 | 322.2 | 323.5 | 325.7 | 326.9 | 326.5 | 326.5 | 325.7 | *324.8* |
| 137.5° | 295.2 | 296.5 | 295.7 | 295.7 | 296.5 | 298.7 | 300.8 | 300.4 | 300.0 | 298.2 | *297.4* |
| 140° | 270.4 | 269.5 | 270.0 | 270.0 | 272.1 | 272.1 | 274.2 | 274.2 | 273.8 | 272.5 | *273.4* |
| 142.5° | 245.5 | 245.1 | 246.8 | 246.0 | 246.8 | 249.0 | 249.8 | 249.4 | 248.5 | 249.0 | *249.4* |
| 145° | 222.8 | 223.3 | 222.8 | 223.3 | 224.5 | 225.8 | 227.5 | 226.7 | 226.7 | 225.4 | *225.0* |
| 147.5° | 201.4 | 201.4 | 201.0 | 202.7 | 203.1 | 204.8 | 205.3 | 205.7 | 204.8 | 204.0 | *205.3* |
| 150° | 182.5 | 182.1 | 182.1 | 182.5 | 183.4 | 184.7 | 185.5 | 185.5 | 186.0 | 185.1 | *184.7* |
| 152.5° | 165.0 | 164.1 | 164.5 | 165.4 | 165.8 | 167.1 | 167.1 | 168.0 | 167.5 | 167.1 | *167.1* |
| 155° | 149.1 | 149.5 | 149.5 | 150.0 | 150.8 | 151.3 | 152.1 | 151.7 | 152.1 | 151.7 | *151.7* |
| 157.5° | 136.3 | 137.1 | 137.1 | 137.6 | 137.1 | 137.6 | 138.0 | 138.4 | 138.4 | 138.4 | *138.4* |
| 160° | 126.0 | 125.6 | 125.6 | 125.6 | 125.6 | 126.0 | 126.8 | 126.4 | 126.8 | 126.4 | *126.0* |
| 162.5° | 116.6 | 116.6 | 116.6 | 116.6 | 117.0 | 117.0 | 117.0 | 117.4 | 117.0 | 117.0 | *117.0* |
| 165° | 108.8 | 109.3 | 108.8 | 108.8 | 108.8 | 109.3 | 109.3 | 109.3 | 109.3 | 109.3 | *109.3* |
| 167.5° | 102.8 | 103.3 | 103.3 | 103.3 | 103.3 | 103.3 | 103.7 | 103.3 | 103.3 | 103.3 | *103.3* |
| 170° | 98.1 | 98.6 | 98.6 | 98.1 | 98.6 | 98.1 | 98.1 | 98.6 | 98.1 | 98.1 | *98.1* |
| 172.5° | 94.7 | 94.7 | 94.7 | 94.7 | 94.7 | 94.7 | 94.7 | 94.7 | 94.7 | 94.3 | *94.3* |
| 175° | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | 91.7 | *91.7* |
| 177.5° | 90.0 | 90.0 | 90.4 | 90.0 | 90.0 | 90.0 | 90.0 | 90.0 | 90.0 | 90.0 | *90.0* |
| 180° | 89.6 | 89.6 | 89.6 | 89.6 | 89.6 | 89.6 | 89.6 | 89.6 | 89.6 | 89.6 | *89.6* |

Cooper Lighting Solutions Photometric Lab
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

Streetworks

Report Number: SP1-2501-332-1

Test Date: 03/20/2025

Luminaire Tested: FFX-CLB-100-740-U-FR-T5

Data in this report applies to families of products including FFX-CLB-100-740-U-FR-T5

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

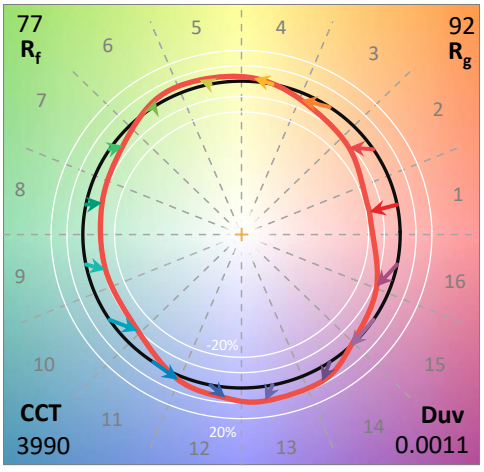
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2501-332-1 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 03/31/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Streetworks |
| Catalog Number: | **FFX-CLB-100-740-U-FR-T5** |
| Description: | FAIRFAX ACORN W/ FAIRFAX REFRACTOR 100W T5 |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3990 | CRI (Ra): | 73.9 | | |
| CIE u': | 0.2247 | R1: | 69.6 | R9: | -36.4 |
| CIE v': | 0.5031 | R2: | 83.0 | R10: | 60.9 |
| Duv: | 0.0011 | R3: | 93.1 | R11: | 66.8 |
| CIE x: | 0.3816 | R4: | 70.6 | R12: | 52.5 |
| CIE y: | 0.3798 | R5: | 70.6 | R13: | 72.5 |
| CIE z: | 0.2386 | R6: | 76.4 | R14: | 96.4 |
| Peak Wavelength (nm): | 450 | R7: | 79.8 | R15: | 61.3 |
| Dominant Wavelength (nm): | 578 | R8: | 48.1 | | |
| Purity: | 28.50862 | | | | |

| | |
|---|---|
| Rf: | 77.5 |
| Rg: | 91.9 |



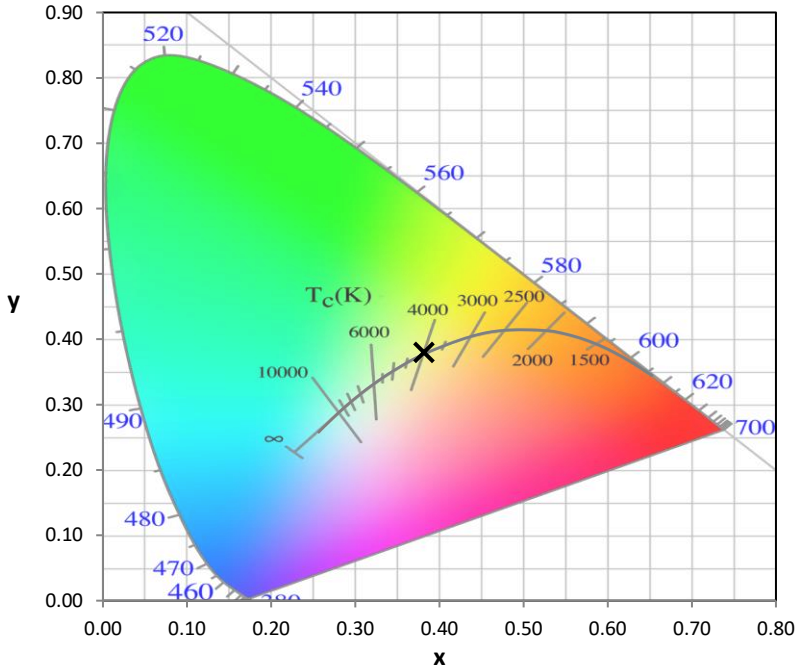

## Test Conditions

| | |
|---|---|
| Stabilization Time: | 70M |
| Operation Time: | 2H 10M |
| Sphere Temperature (°C): | 25.0 |

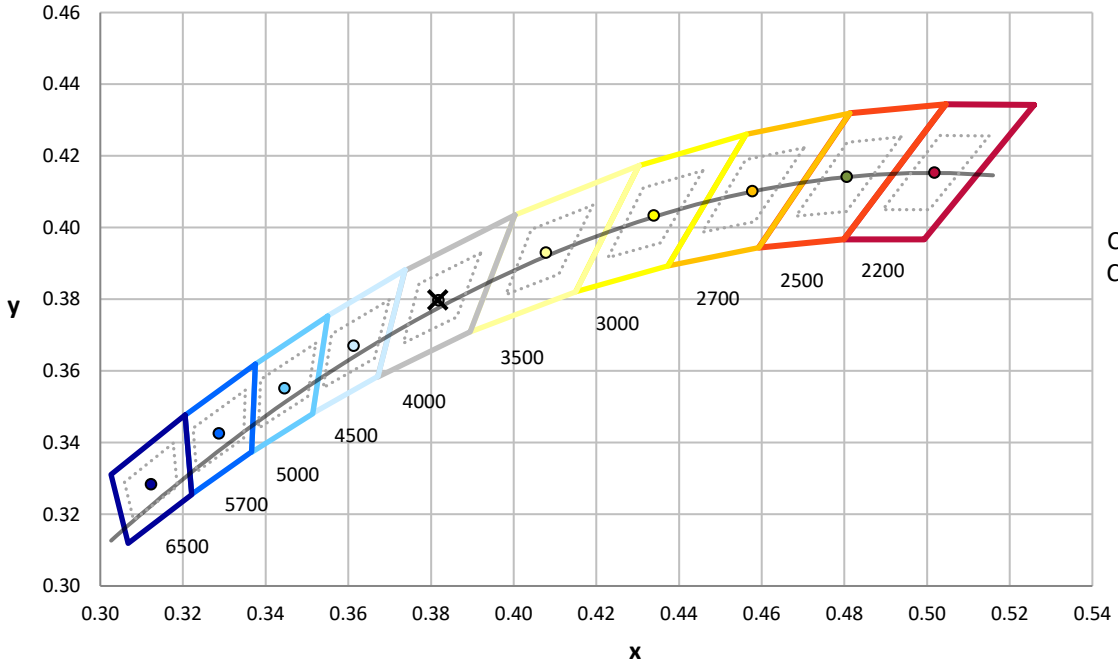
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 12/16/2024 | 6/16/2025 |
| Power Meter | INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | IN0063 | 10/22/2024 | 10/22/2025 |
| DC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

REPORT NUMBER: SP1-2501-332-1

## CIE 1931 Chromaticity Diagram




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

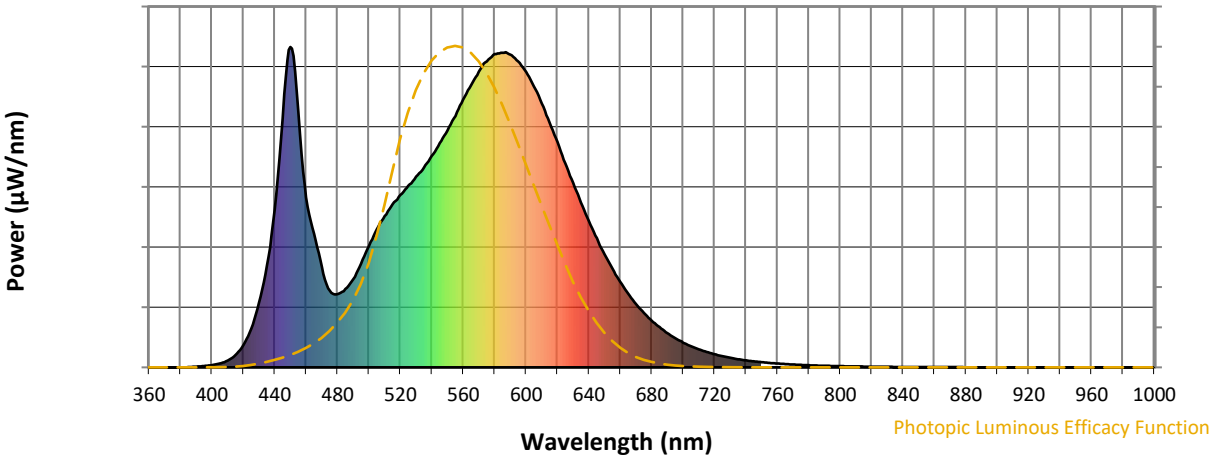



CCT = 3990K
CIE x = 0.3816
CIE y = 0.3798
Duv = 0.0011

Point lies inside the ANSI 4000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

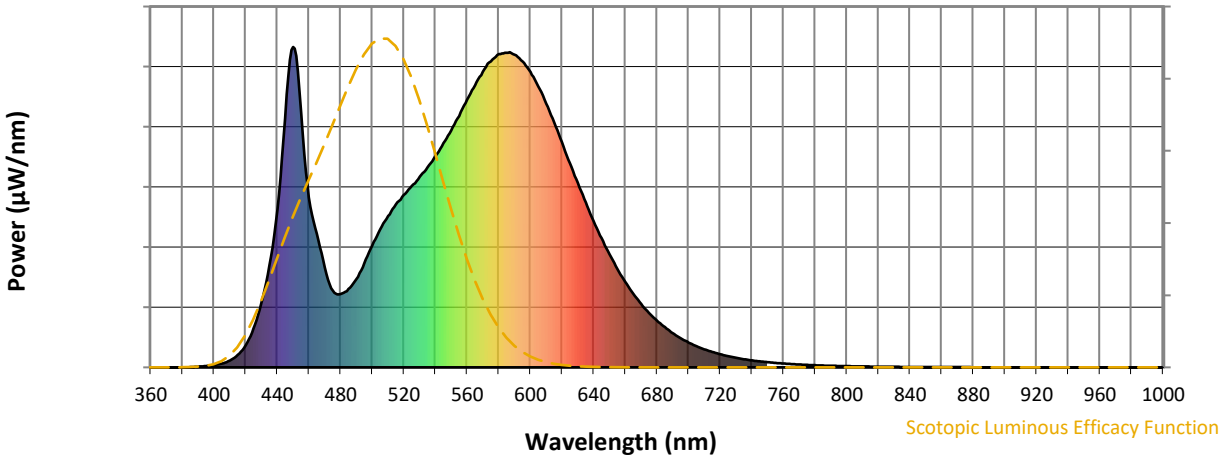



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 275 | NR | 620 | 703 | NR | 750 | 16 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 324 | NR | 625 | 637 | NR | 755 | 14 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 380 | NR | 630 | 576 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 431 | NR | 635 | 514 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 472 | NR | 640 | 456 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 508 | NR | 645 | 403 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 538 | NR | 650 | 353 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 567 | NR | 655 | 307 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 595 | NR | 660 | 266 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 12 | NR | 535 | 624 | NR | 665 | 230 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 21 | NR | 540 | 660 | NR | 670 | 198 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 39 | NR | 545 | 700 | NR | 675 | 170 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 739 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 121 | NR | 555 | 784 | NR | 685 | 125 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 202 | NR | 560 | 836 | NR | 690 | 107 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 319 | NR | 565 | 881 | NR | 695 | 91 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 492 | NR | 570 | 923 | NR | 700 | 77 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 777 | NR | 575 | 955 | NR | 705 | 66 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 978 | NR | 710 | 56 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 797 | NR | 585 | 982 | NR | 715 | 48 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 530 | NR | 590 | 976 | NR | 720 | 41 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 418 | NR | 595 | 955 | NR | 725 | 35 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 311 | NR | 600 | 922 | NR | 730 | 30 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 239 | NR | 605 | 877 | NR | 735 | 25 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 229 | NR | 610 | 823 | NR | 740 | 22 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 245 | NR | 615 | 764 | NR | 745 | 19 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

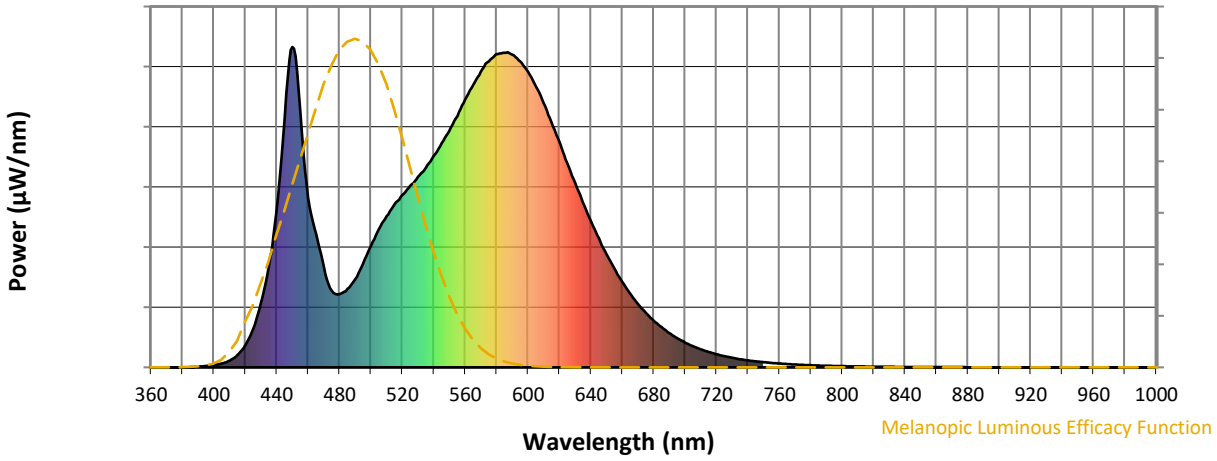



**Scotopic Lumens: NR** **S/P: 1.59**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 275 | NR | 620 | 703 | NR | 750 | 16 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 324 | NR | 625 | 637 | NR | 755 | 14 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 380 | NR | 630 | 576 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 431 | NR | 635 | 514 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 472 | NR | 640 | 456 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 508 | NR | 645 | 403 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 538 | NR | 650 | 353 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 567 | NR | 655 | 307 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 595 | NR | 660 | 266 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 12 | NR | 535 | 624 | NR | 665 | 230 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 21 | NR | 540 | 660 | NR | 670 | 198 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 39 | NR | 545 | 700 | NR | 675 | 170 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 739 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 121 | NR | 555 | 784 | NR | 685 | 125 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 202 | NR | 560 | 836 | NR | 690 | 107 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 319 | NR | 565 | 881 | NR | 695 | 91 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 492 | NR | 570 | 923 | NR | 700 | 77 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 777 | NR | 575 | 955 | NR | 705 | 66 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 978 | NR | 710 | 56 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 797 | NR | 585 | 982 | NR | 715 | 48 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 530 | NR | 590 | 976 | NR | 720 | 41 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 418 | NR | 595 | 955 | NR | 725 | 35 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 311 | NR | 600 | 922 | NR | 730 | 30 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 239 | NR | 605 | 877 | NR | 735 | 25 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 229 | NR | 610 | 823 | NR | 740 | 22 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 245 | NR | 615 | 764 | NR | 745 | 19 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.21**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 275 | NR | 620 | 703 | NR | 750 | 16 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 324 | NR | 625 | 637 | NR | 755 | 14 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 380 | NR | 630 | 576 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 431 | NR | 635 | 514 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 472 | NR | 640 | 456 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 508 | NR | 645 | 403 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 538 | NR | 650 | 353 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 567 | NR | 655 | 307 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 595 | NR | 660 | 266 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 12 | NR | 535 | 624 | NR | 665 | 230 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 21 | NR | 540 | 660 | NR | 670 | 198 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 39 | NR | 545 | 700 | NR | 675 | 170 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 739 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 121 | NR | 555 | 784 | NR | 685 | 125 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 202 | NR | 560 | 836 | NR | 690 | 107 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 319 | NR | 565 | 881 | NR | 695 | 91 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 492 | NR | 570 | 923 | NR | 700 | 77 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 777 | NR | 575 | 955 | NR | 705 | 66 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 978 | NR | 710 | 56 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 797 | NR | 585 | 982 | NR | 715 | 48 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 530 | NR | 590 | 976 | NR | 720 | 41 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 418 | NR | 595 | 955 | NR | 725 | 35 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 311 | NR | 600 | 922 | NR | 730 | 30 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 239 | NR | 605 | 877 | NR | 735 | 25 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 229 | NR | 610 | 823 | NR | 740 | 22 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 245 | NR | 615 | 764 | NR | 745 | 19 | NR | 875 | 1 | NR | | | |

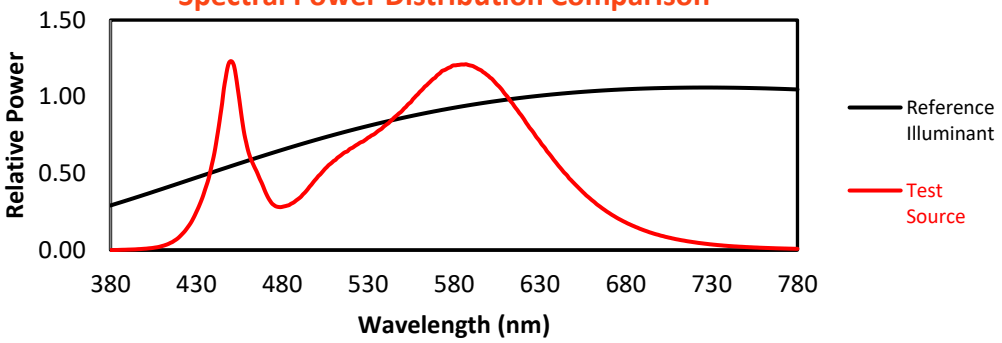
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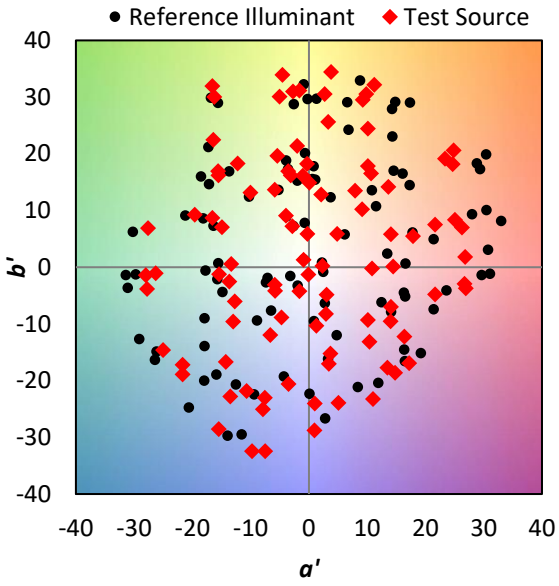
## Summary

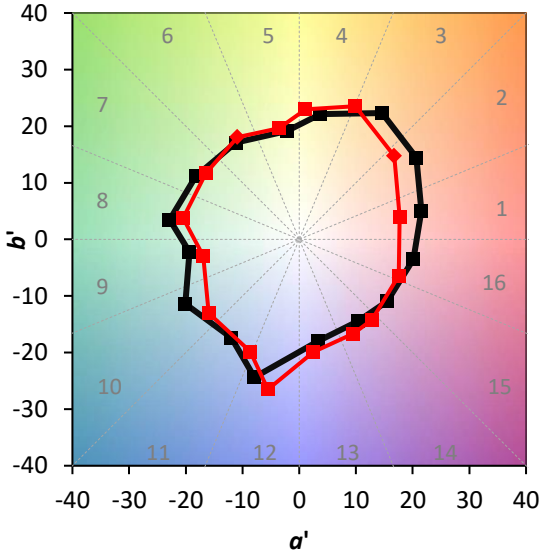
$R_f$ = 77.5
$R_g$ = 91.9
CIE $R_a$ = 73.9
$R_9$ = -36.4

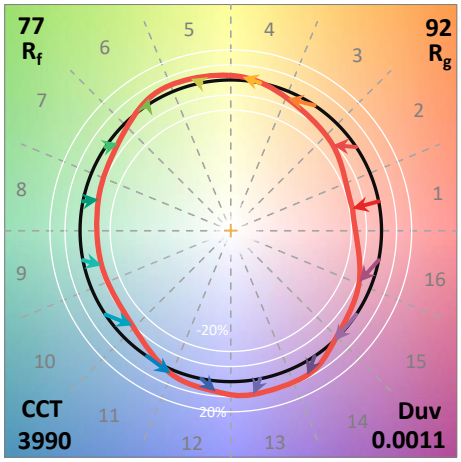
## Spectral Power Distribution Comparison

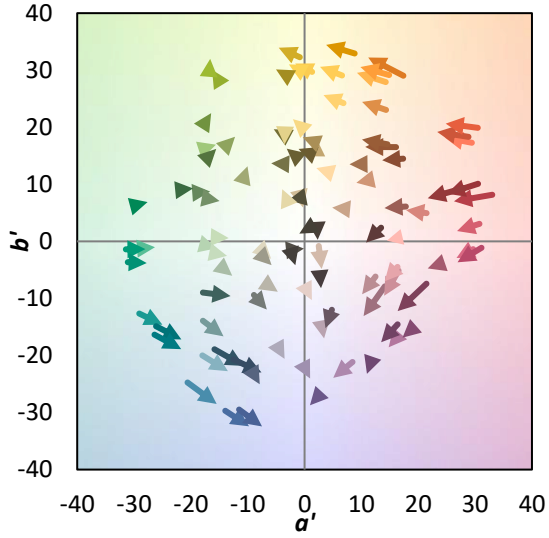



## Color Vector Graphics



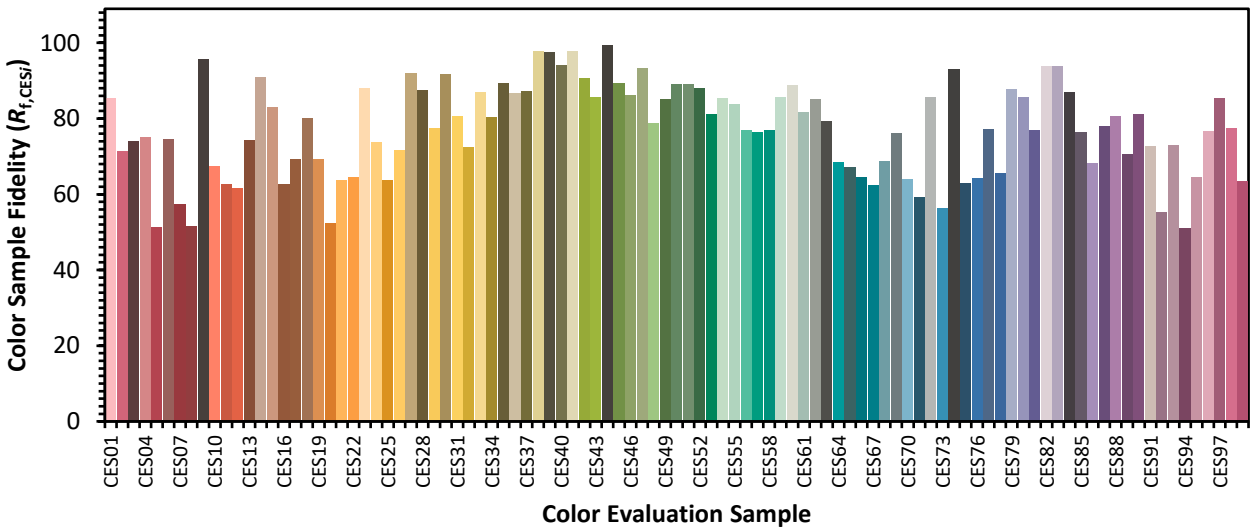



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**Individual Sample Fidelity Index ($R_{f,i}$)**

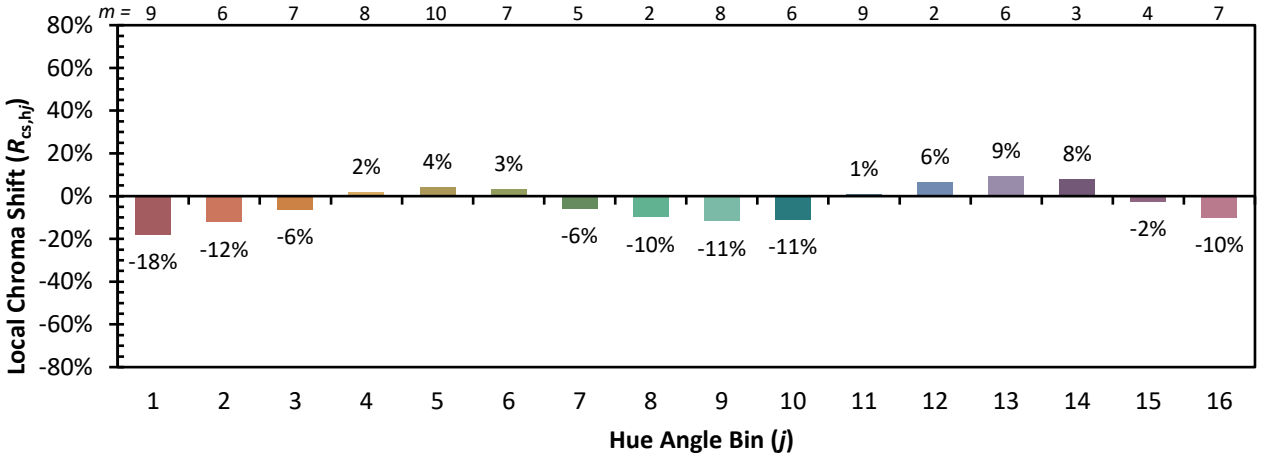
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 72 | CES51 = 89 | CES76 = 64 |
| CES02 = 61 | CES27 = 92 | CES52 = 88 | CES77 = 77 |
| CES03 = 30 | CES28 = 88 | CES53 = 81 | CES78 = 65 |
| CES04 = 70 | CES29 = 78 | CES54 = 85 | CES79 = 88 |
| CES05 = 47 | CES30 = 92 | CES55 = 84 | CES80 = 86 |
| CES06 = 50 | CES31 = 81 | CES56 = 77 | CES81 = 77 |
| CES07 = 40 | CES32 = 72 | CES57 = 76 | CES82 = 94 |
| CES08 = 39 | CES33 = 87 | CES58 = 77 | CES83 = 94 |
| CES09 = 29 | CES34 = 80 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 89 | CES60 = 89 | CES85 = 76 |
| CES11 = 57 | CES36 = 87 | CES61 = 82 | CES86 = 68 |
| CES12 = 63 | CES37 = 87 | CES62 = 85 | CES87 = 78 |
| CES13 = 42 | CES38 = 98 | CES63 = 79 | CES88 = 81 |
| CES14 = 74 | CES39 = 98 | CES64 = 68 | CES89 = 71 |
| CES15 = 71 | CES40 = 94 | CES65 = 67 | CES90 = 81 |
| CES16 = 46 | CES41 = 98 | CES66 = 65 | CES91 = 73 |
| CES17 = 49 | CES42 = 91 | CES67 = 62 | CES92 = 55 |
| CES18 = 56 | CES43 = 86 | CES68 = 69 | CES93 = 73 |
| CES19 = 72 | CES44 = 99 | CES69 = 76 | CES94 = 51 |
| CES20 = 65 | CES45 = 89 | CES70 = 64 | CES95 = 65 |
| CES21 = 86 | CES46 = 86 | CES71 = 59 | CES96 = 77 |
| CES22 = 78 | CES47 = 93 | CES72 = 86 | CES97 = 85 |
| CES23 = 92 | CES48 = 79 | CES73 = 56 | CES98 = 77 |
| CES24 = 91 | CES49 = 85 | CES74 = 93 | CES99 = 63 |
| CES25 = 72 | CES50 = 89 | CES75 = 63 | |

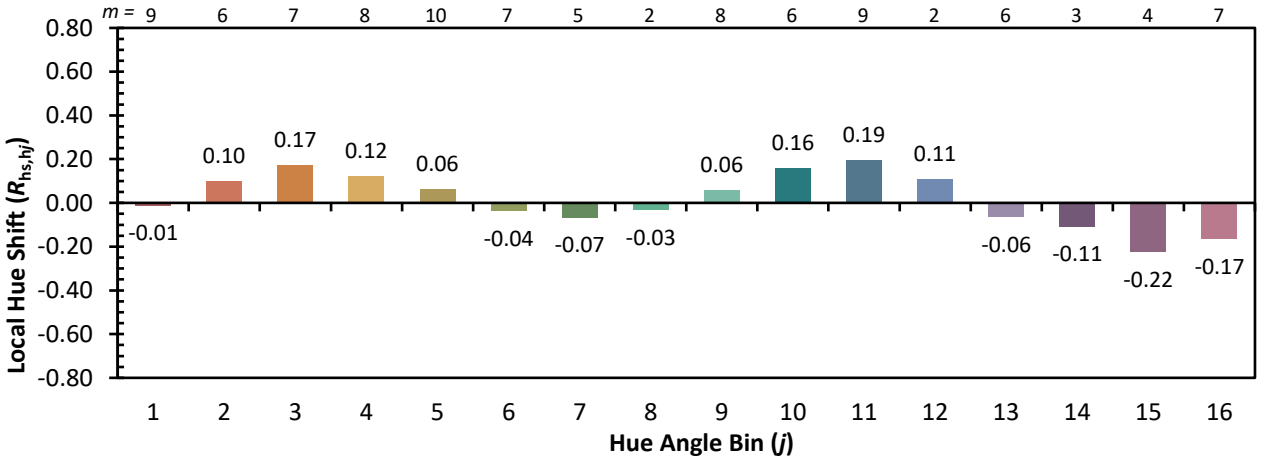


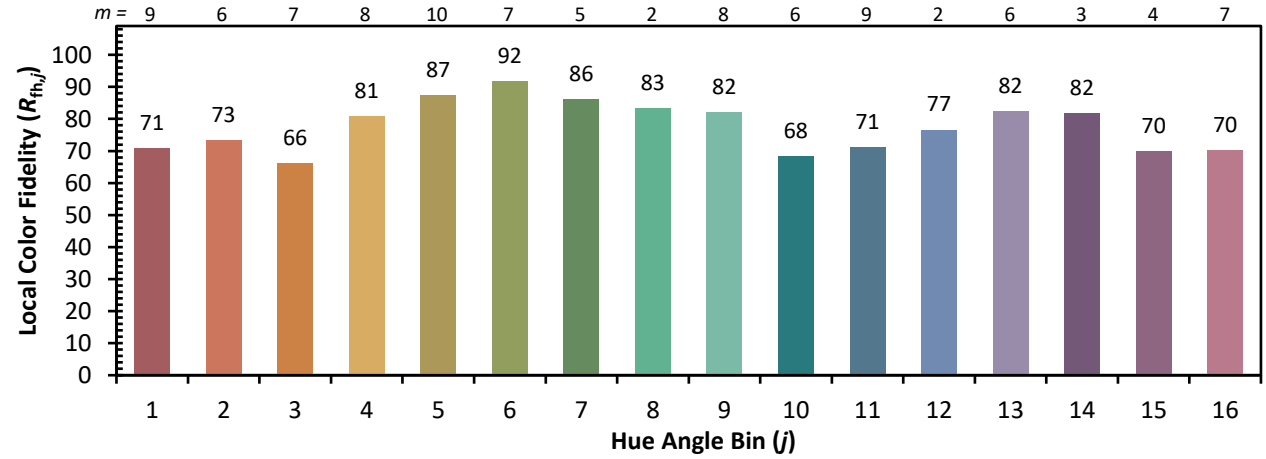
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## Color Rendition by Hue-Angle Bin



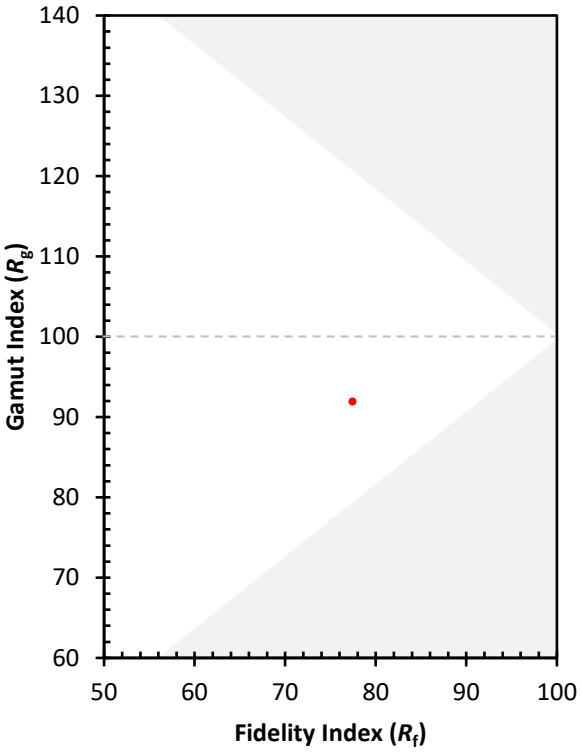



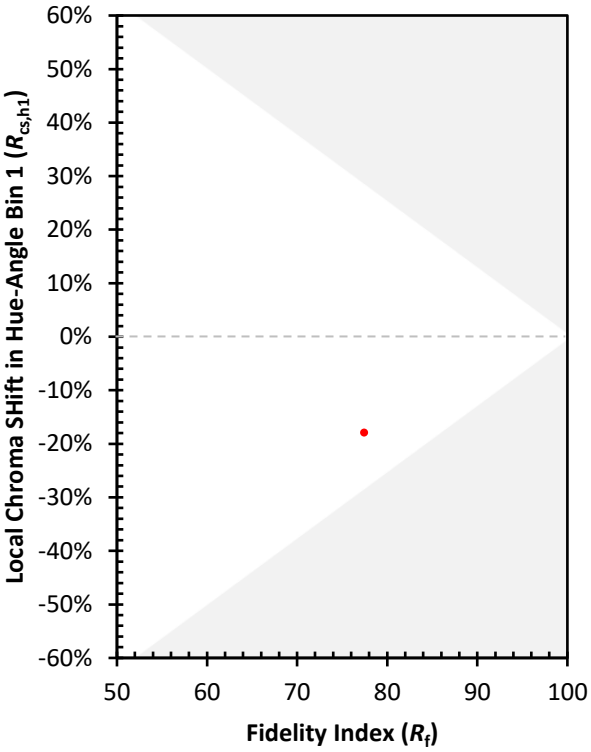



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## Measure Comparisons




(END OF REPORT)