

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: STREETWORKS

Report Number: P856340

Luminaire Tested: **FFX-CLB-50-727-U-VM8**

Issue Date: 07/16/2024



Test Information

Test Method: LM-79-08
Report Number: P856340
Test Lab: INNOVATION CENTER(G3)
Issue Date: 07/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: FFX-CLB-50-727-U-VM8
Description: FAIRFAX POST TOP FIXTURE w/ ULA ACORN 8 INCH NECK
Light Source: (6) 2700K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

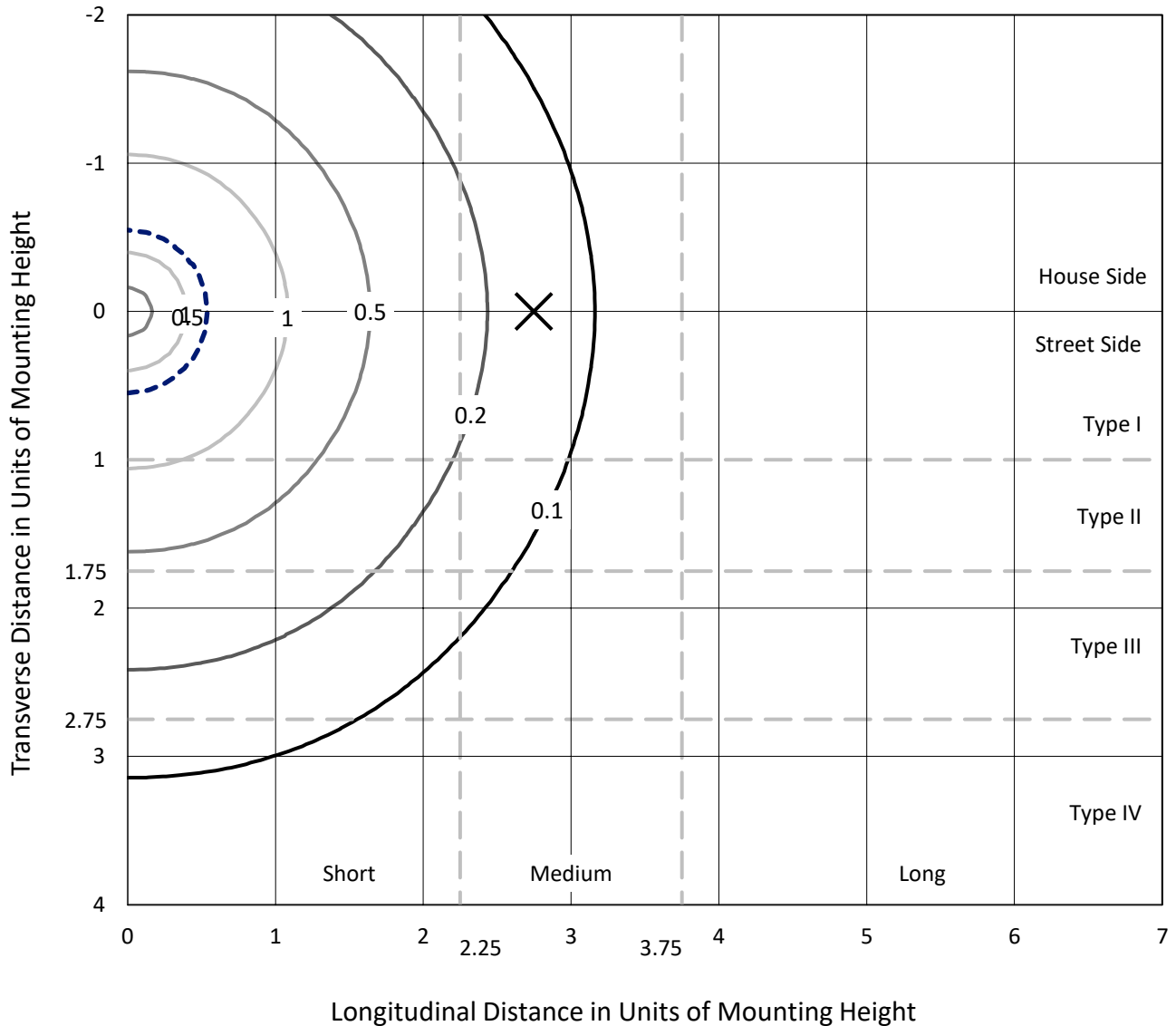
Lumens per Lamp: N/A
Luminaire Lumens: 7572.4 lumens
Efficiency: N/A
Efficacy: 149.9 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 2.08')
IES Classification: Type V - Short
BUG Rating: B2 - U5 - G3

Input Watts (W): 50.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 6.0%%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P856340
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Iso-Footcandle Lines of Horizontal Illumination

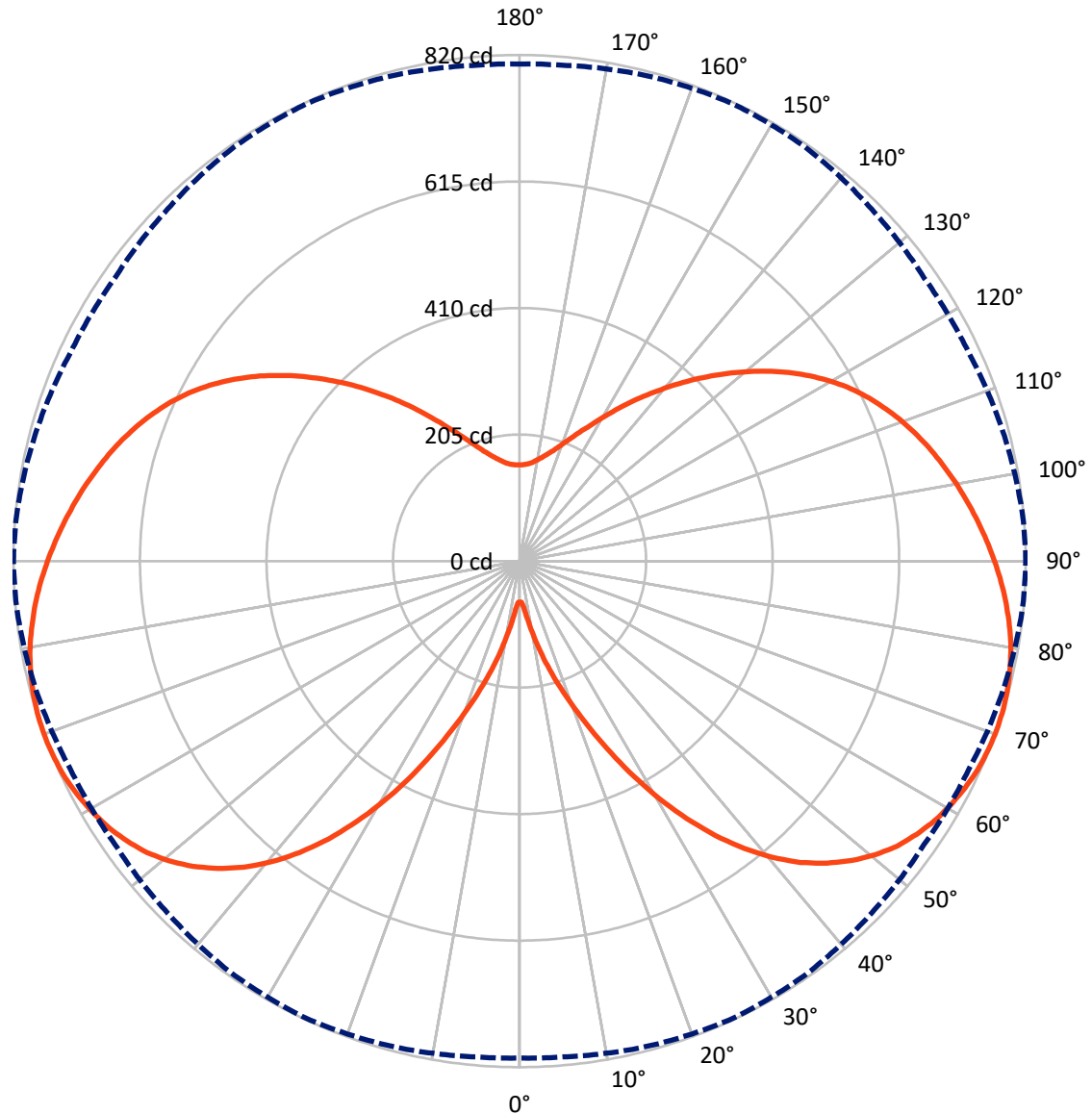
✕ Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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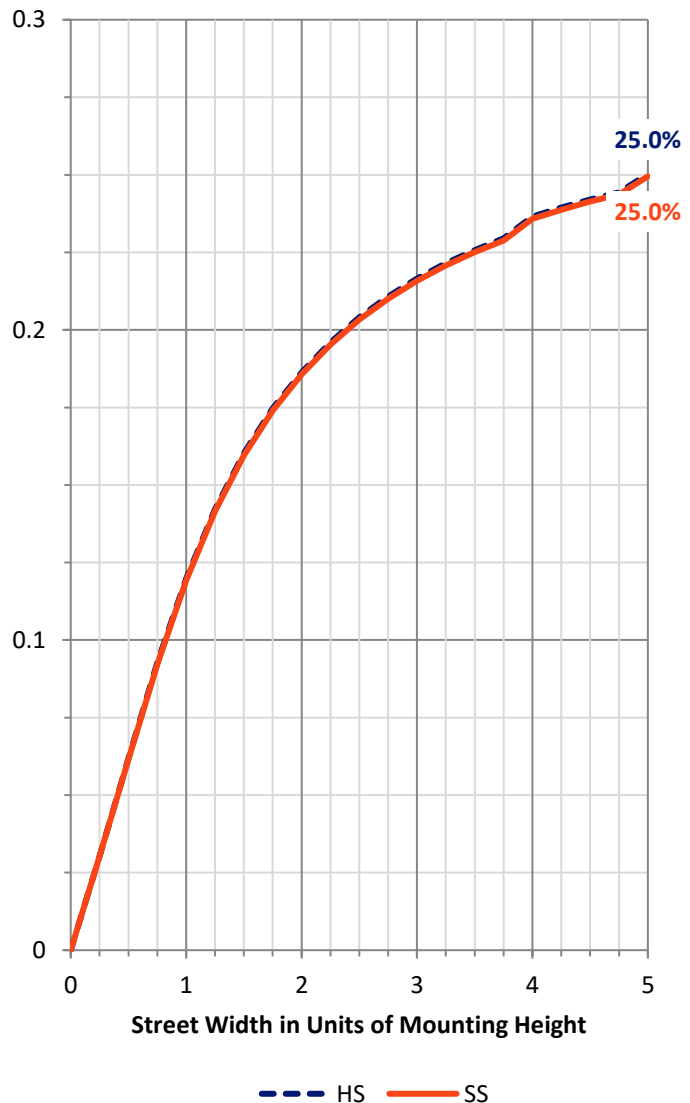
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2144.4 | 1641.8 | 3786.2 |
| | % Fixture | 28.3 | 21.7 | 50.0 |
| Street Side | Lumens | 2144.4 | 1641.8 | 3786.2 |
| | % Fixture | 28.3 | 21.7 | 50.0 |
| Total | Lumens | 4288.9 | 3283.5 | 7572.4 |
| | % Fixture | 56.6 | 43.4 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 8.9 | 0.1 |
| 10°-20° | 54.2 | 0.7 |
| 20°-30° | 161.8 | 2.1 |
| 30°-40° | 338.2 | 4.5 |
| 40°-50° | 530.8 | 7.0 |
| 50°-60° | 689.0 | 9.1 |
| 60°-70° | 797.6 | 10.5 |
| 70°-80° | 853.8 | 11.3 |
| 80°-90° | 854.5 | 11.3 |
| 90°-100° | 805.9 | 10.6 |
| 100°-110° | 721.1 | 9.5 |
| 110°-120° | 606.3 | 8.0 |
| 120°-130° | 465.1 | 6.1 |
| 130°-140° | 318.2 | 4.2 |
| 140°-150° | 194.1 | 2.6 |
| 150°-160° | 106.1 | 1.4 |
| 160°-170° | 51.4 | 0.7 |
| 170°-180° | 15.3 | 0.2 |
| 0°-90° | 4288.9 | 56.6 |
| 0°-180° | 7572.4 | 100.0 |

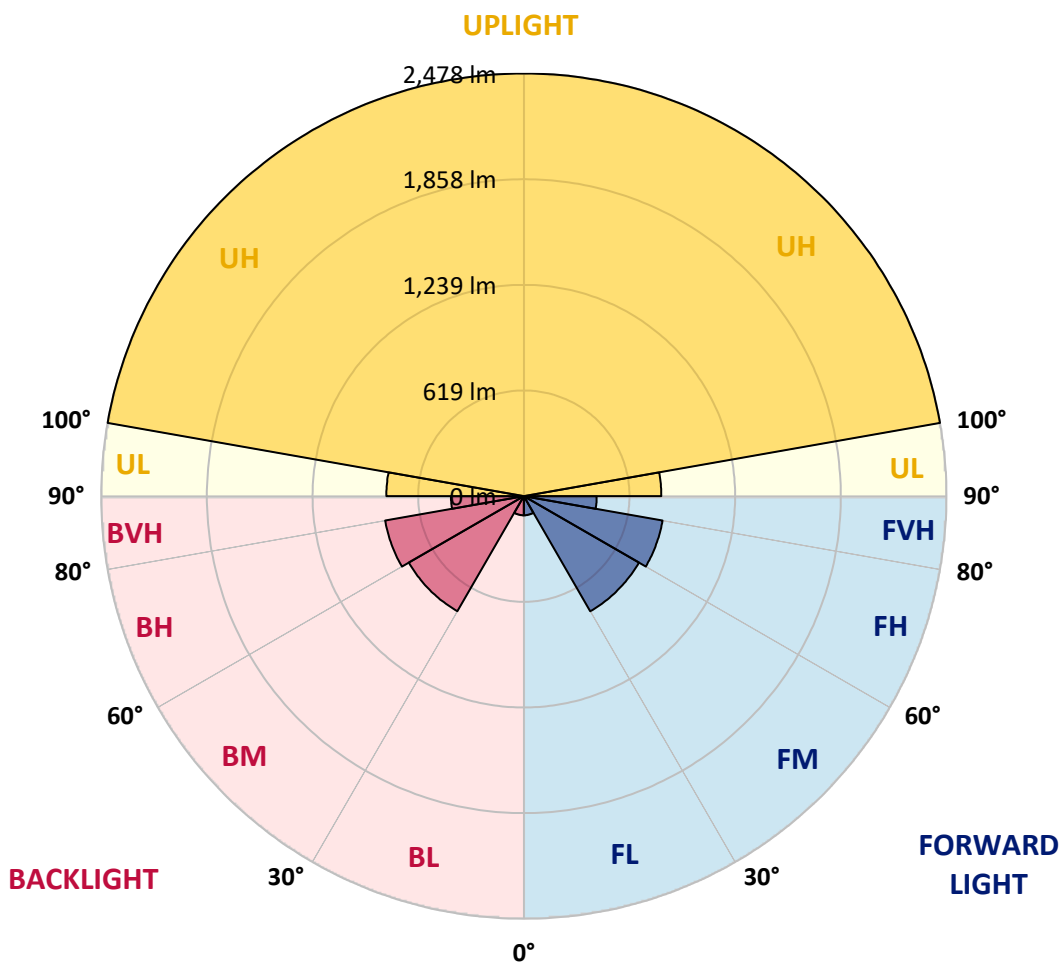


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 CATALOG NUMBER: FFX-CLB-50-727-U-VM8

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|---------|---------|
| | | | B | U | G |
| FL (0°-30°) | 112.4 | 1.5 | | | |
| FM (30°-60°) | 779.0 | 10.3 | | | |
| FH (60°-80°) | 825.7 | 10.9 | | | G1/1800 |
| FVH (80°-90°) | 427.3 | 5.6 | | | G3/500 |
| BL (0°-30°) | 112.4 | 1.5 | B1/500 | | |
| BM (30°-60°) | 779.0 | 10.3 | B1/1000 | | |
| BH (60°-80°) | 825.7 | 10.9 | B2/1000 | | G1/1800 |
| BVH (80°-90°) | 427.3 | 5.6 | | | G3/500 |
| UL (90°-100°) | 805.9 | 10.6 | | U4/1000 | |
| UH (100°-180°) | 2477.7 | 32.7 | | U5 | |

BUG Rating: B2-U5-G3
 Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 | 66.5 |
| 2.5° | 69.4 | 69.4 | 68.9 | 68.9 | 68.4 | 67.9 | 67.9 | 67.9 | 67.5 | 67.5 | 67.0 |
| 5° | 79.1 | 78.6 | 78.6 | 78.1 | 78.6 | 78.1 | 78.1 | 78.1 | 78.1 | 77.2 | 77.2 |
| 7.5° | 98.0 | 97.5 | 97.5 | 97.1 | 98.0 | 97.1 | 97.1 | 97.5 | 97.5 | 97.1 | 97.1 |
| 10° | 122.8 | 122.3 | 122.3 | 121.3 | 122.3 | 121.8 | 121.8 | 120.8 | 121.3 | 120.8 | 121.3 |
| 12.5° | 152.4 | 150.9 | 150.9 | 150.4 | 151.4 | 150.9 | 150.4 | 149.5 | 150.4 | 150.0 | 150.0 |
| 15° | 183.0 | 183.4 | 183.0 | 182.5 | 183.4 | 183.4 | 183.0 | 182.0 | 183.0 | 182.0 | 182.5 |
| 17.5° | 216.9 | 216.9 | 216.9 | 215.5 | 216.9 | 217.4 | 216.9 | 216.0 | 216.4 | 216.9 | 216.9 |
| 20° | 253.8 | 253.8 | 254.3 | 253.3 | 255.8 | 254.3 | 253.8 | 253.3 | 253.8 | 254.3 | 254.8 |
| 22.5° | 294.6 | 294.6 | 295.1 | 294.6 | 296.0 | 296.0 | 295.6 | 295.6 | 296.0 | 297.0 | 297.0 |
| 25° | 339.7 | 340.2 | 340.2 | 338.7 | 342.1 | 343.1 | 342.1 | 342.1 | 343.1 | 344.6 | 344.6 |
| 27.5° | 386.3 | 388.2 | 387.3 | 387.3 | 391.6 | 392.1 | 391.6 | 392.1 | 393.6 | 395.0 | 395.5 |
| 30° | 434.3 | 435.8 | 437.7 | 436.3 | 441.1 | 441.6 | 442.1 | 442.6 | 444.5 | 447.0 | 447.0 |
| 32.5° | 482.4 | 483.9 | 484.8 | 484.8 | 491.1 | 490.6 | 490.2 | 492.1 | 495.0 | 496.0 | 497.4 |
| 35° | 530.4 | 530.4 | 531.4 | 531.9 | 538.2 | 537.7 | 538.7 | 540.1 | 543.1 | 545.0 | 546.0 |
| 37.5° | 573.6 | 572.7 | 575.1 | 576.1 | 580.9 | 581.4 | 581.9 | 584.3 | 587.7 | 590.1 | 591.1 |
| 40° | 612.9 | 612.0 | 614.9 | 616.3 | 620.7 | 620.7 | 621.7 | 624.6 | 628.5 | 630.9 | 631.4 |
| 42.5° | 647.9 | 647.4 | 650.3 | 652.3 | 656.6 | 656.1 | 655.6 | 659.5 | 663.9 | 666.8 | 667.8 |
| 45° | 678.0 | 677.5 | 681.4 | 683.8 | 687.2 | 686.2 | 686.2 | 689.6 | 694.5 | 697.9 | 698.4 |
| 47.5° | 703.7 | 703.7 | 708.1 | 711.0 | 713.9 | 712.4 | 711.5 | 714.9 | 719.7 | 724.6 | 725.0 |
| 50° | 726.5 | 726.0 | 730.9 | 734.3 | 736.7 | 734.8 | 733.3 | 736.7 | 742.0 | 746.9 | 747.9 |
| 52.5° | 744.5 | 745.4 | 750.3 | 754.7 | 756.6 | 753.7 | 751.3 | 754.7 | 760.5 | 765.8 | 766.8 |
| 55° | 760.0 | 760.5 | 765.8 | 771.2 | 772.1 | 768.2 | 765.3 | 768.2 | 774.6 | 780.4 | 781.3 |
| 57.5° | 772.1 | 773.1 | 779.4 | 784.3 | 784.7 | 780.4 | 777.0 | 779.4 | 786.2 | 792.0 | 793.5 |
| 60° | 782.8 | 783.8 | 789.6 | 794.9 | 795.4 | 790.1 | 785.7 | 787.7 | 794.9 | 801.7 | 802.7 |
| 62.5° | 791.1 | 792.5 | 798.8 | 803.7 | 803.7 | 797.4 | 792.0 | 794.0 | 801.7 | 809.0 | 810.0 |
| 65° | 797.8 | 799.3 | 805.6 | 810.5 | 810.0 | 802.7 | 796.9 | 798.8 | 807.1 | 814.3 | 815.8 |
| 67.5° | 802.7 | 803.7 | 810.5 | 815.3 | 813.4 | 805.6 | 799.8 | 801.2 | 810.0 | 817.3 | 818.7 |
| 70° | 805.6 | 806.6 | 813.4 | 817.7 | 814.8 | 806.6 | 800.3 | 802.2 | 810.9 | 818.7 | 820.2 |
| 72.5° | 807.1 | 808.5 | 814.8 | 818.7 | 815.3 | 806.1 | 799.3 | 801.7 | 810.5 | 818.7 | 819.7 |
| 75° | 806.6 | 807.6 | 813.9 | 817.3 | 812.9 | 804.2 | 796.9 | 799.3 | 808.5 | 815.8 | 817.3 |
| 77.5° | 804.2 | 805.1 | 810.9 | 813.9 | 808.5 | 799.8 | 793.0 | 795.4 | 804.2 | 811.4 | 812.9 |
| 80° | 800.3 | 801.2 | 806.6 | 808.5 | 803.2 | 794.4 | 788.1 | 790.6 | 798.8 | 805.6 | 807.1 |
| 82.5° | 794.0 | 795.4 | 800.3 | 801.2 | 795.4 | 787.7 | 781.3 | 783.8 | 791.5 | 797.8 | 798.8 |
| 85° | 786.2 | 787.2 | 791.5 | 792.0 | 786.2 | 779.4 | 774.1 | 776.5 | 783.3 | 788.1 | 789.6 |
| 87.5° | 777.5 | 777.5 | 781.8 | 781.8 | 775.5 | 769.2 | 765.3 | 767.3 | 773.6 | 777.5 | 778.9 |
| 90° | 766.8 | 767.3 | 770.2 | 769.7 | 763.9 | 758.5 | 755.1 | 757.6 | 762.9 | 766.3 | 767.3 |
| 92.5° | 755.1 | 755.6 | 758.0 | 757.1 | 751.3 | 746.9 | 744.0 | 746.9 | 751.7 | 754.2 | 755.1 |
| 95° | 742.5 | 743.0 | 744.9 | 743.0 | 737.7 | 734.3 | 731.8 | 735.2 | 739.1 | 741.5 | 742.5 |
| 97.5° | 729.4 | 729.9 | 731.4 | 729.4 | 723.6 | 720.7 | 719.7 | 722.6 | 726.5 | 728.4 | 729.4 |
| 100° | 715.8 | 715.8 | 716.8 | 713.9 | 709.0 | 706.6 | 706.1 | 709.5 | 713.4 | 715.3 | 716.3 |
| 102.5° | 700.8 | 701.3 | 701.3 | 698.4 | 693.5 | 692.0 | 692.0 | 695.9 | 699.8 | 701.3 | 702.2 |
| 105° | 685.3 | 685.3 | 685.3 | 682.8 | 677.5 | 676.5 | 677.0 | 680.9 | 685.3 | 687.2 | 688.2 |
| 107.5° | 668.3 | 668.8 | 667.8 | 665.4 | 661.0 | 660.0 | 661.0 | 666.3 | 670.2 | 672.2 | 673.1 |
| 110° | 650.3 | 650.8 | 650.3 | 647.4 | 643.5 | 643.0 | 644.5 | 649.8 | 653.7 | 655.6 | 657.1 |



REPORT NUMBER: P856340
 CATALOG NUMBER: FFX-CLB-50-727-U-VM8

CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 112.5° | 631.4 | 631.9 | 631.4 | 629.0 | 625.1 | 625.1 | 627.0 | 632.4 | 636.7 | 638.2 | 639.6 |
| 115° | 611.5 | 612.0 | 611.0 | 609.1 | 605.2 | 606.1 | 608.1 | 613.4 | 617.8 | 619.3 | 621.2 |
| 117.5° | 590.1 | 590.6 | 590.1 | 587.7 | 584.3 | 585.3 | 588.2 | 593.5 | 597.4 | 598.9 | 600.8 |
| 120° | 566.8 | 566.8 | 566.8 | 564.4 | 561.0 | 563.0 | 565.9 | 571.7 | 575.1 | 576.1 | 578.0 |
| 122.5° | 543.1 | 542.1 | 542.1 | 540.6 | 536.7 | 539.2 | 542.1 | 547.9 | 551.3 | 551.8 | 553.3 |
| 125° | 516.9 | 517.3 | 515.9 | 514.9 | 511.5 | 514.4 | 516.9 | 522.7 | 525.6 | 526.1 | 527.5 |
| 127.5° | 488.7 | 490.2 | 488.7 | 487.2 | 484.8 | 487.7 | 490.6 | 496.0 | 498.4 | 498.9 | 499.9 |
| 130° | 462.5 | 462.5 | 461.0 | 460.1 | 457.6 | 460.6 | 463.5 | 468.3 | 470.7 | 470.7 | 471.7 |
| 132.5° | 436.3 | 434.8 | 434.3 | 433.4 | 430.5 | 433.9 | 435.8 | 440.7 | 442.6 | 442.1 | 443.1 |
| 135° | 407.7 | 407.7 | 406.2 | 405.7 | 403.3 | 406.7 | 408.6 | 413.0 | 414.5 | 414.0 | 414.9 |
| 137.5° | 381.0 | 381.0 | 380.0 | 379.0 | 377.6 | 380.5 | 382.4 | 385.8 | 387.3 | 385.8 | 387.3 |
| 140° | 354.8 | 354.8 | 354.3 | 353.3 | 351.8 | 354.8 | 356.2 | 359.1 | 360.6 | 359.1 | 360.1 |
| 142.5° | 330.5 | 329.5 | 329.0 | 328.6 | 326.6 | 329.5 | 330.5 | 333.4 | 333.9 | 332.9 | 334.4 |
| 145° | 304.8 | 305.3 | 304.8 | 304.3 | 302.8 | 305.3 | 306.2 | 308.7 | 309.1 | 308.2 | 309.6 |
| 147.5° | 283.4 | 282.0 | 282.4 | 282.0 | 280.5 | 282.9 | 283.4 | 284.9 | 285.8 | 284.9 | 285.8 |
| 150° | 262.1 | 261.1 | 261.1 | 260.6 | 259.6 | 261.6 | 262.1 | 263.5 | 264.0 | 263.0 | 264.0 |
| 152.5° | 243.1 | 242.7 | 242.7 | 242.2 | 241.2 | 242.7 | 243.1 | 244.1 | 244.6 | 243.6 | 244.1 |
| 155° | 226.2 | 225.7 | 225.7 | 225.2 | 224.2 | 225.7 | 225.7 | 226.6 | 227.1 | 226.6 | 227.1 |
| 157.5° | 211.1 | 210.6 | 210.6 | 210.6 | 209.7 | 210.6 | 210.6 | 211.6 | 211.6 | 211.1 | 211.6 |
| 160° | 199.0 | 198.0 | 198.5 | 198.0 | 197.0 | 198.0 | 198.0 | 198.5 | 198.5 | 198.5 | 198.5 |
| 162.5° | 187.8 | 187.8 | 187.8 | 187.3 | 186.8 | 187.3 | 187.3 | 187.8 | 187.8 | 187.8 | 187.3 |
| 165° | 179.1 | 179.1 | 179.1 | 178.6 | 178.1 | 178.6 | 178.6 | 178.6 | 178.6 | 178.6 | 178.6 |
| 167.5° | 171.8 | 171.3 | 171.8 | 171.3 | 170.8 | 171.3 | 171.3 | 171.3 | 171.3 | 171.3 | 171.3 |
| 170° | 165.5 | 165.5 | 165.5 | 165.5 | 165.0 | 165.5 | 165.5 | 165.5 | 165.5 | 165.5 | 165.5 |
| 172.5° | 161.6 | 161.1 | 161.1 | 161.1 | 160.6 | 161.1 | 160.6 | 161.1 | 160.6 | 161.1 | 160.6 |
| 175° | 158.2 | 158.2 | 158.2 | 158.2 | 157.7 | 157.7 | 157.7 | 157.7 | 157.7 | 157.7 | 157.7 |
| 177.5° | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 | 156.3 |
| 180° | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 | 155.8 |

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: SP1-2406-133-3

Test Date: 07/12/2024

Luminaire Tested: FFX-CLB-100-727-U-FR-T5

Data in this report applies to families of products including FFX-CLB-100-727-U-FR-T5.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2406-133-3
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 07/12/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **FFX-CLB-100-727-U-FR-T5**
 Description: FAIRFAX ACORN W/ FAIRFAX REFRACTOR 100W T5

Spectral Parameters

CCT (K): 2707
 CIE u': 0.2624
 CIE v': 0.5261
 Duv: -0.0007
 CIE x: 0.4580
 CIE y: 0.4082
 CIE z: 0.1338
 Peak Wavelength (nm): 599
 Dominant Wavelength (nm): 584
 Purity: 59.99901
 Rf: 75.5
 Rg: 92.5

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.3 | | |
| R1: | 67.8 | R9: | -34.9 |
| R2: | 84.5 | R10: | 65.1 |
| R3: | 94.2 | R11: | 59.2 |
| R4: | 64.8 | R12: | 54.2 |
| R5: | 66.9 | R13: | 71.2 |
| R6: | 79.2 | R14: | 97.5 |
| R7: | 74.4 | R15: | 59.4 |
| R8: | 38.8 | | |



Test Conditions

Stabilization Time: 0.813602M
 Operation Time: 1H
 Sphere Temperature (°C): 24.7

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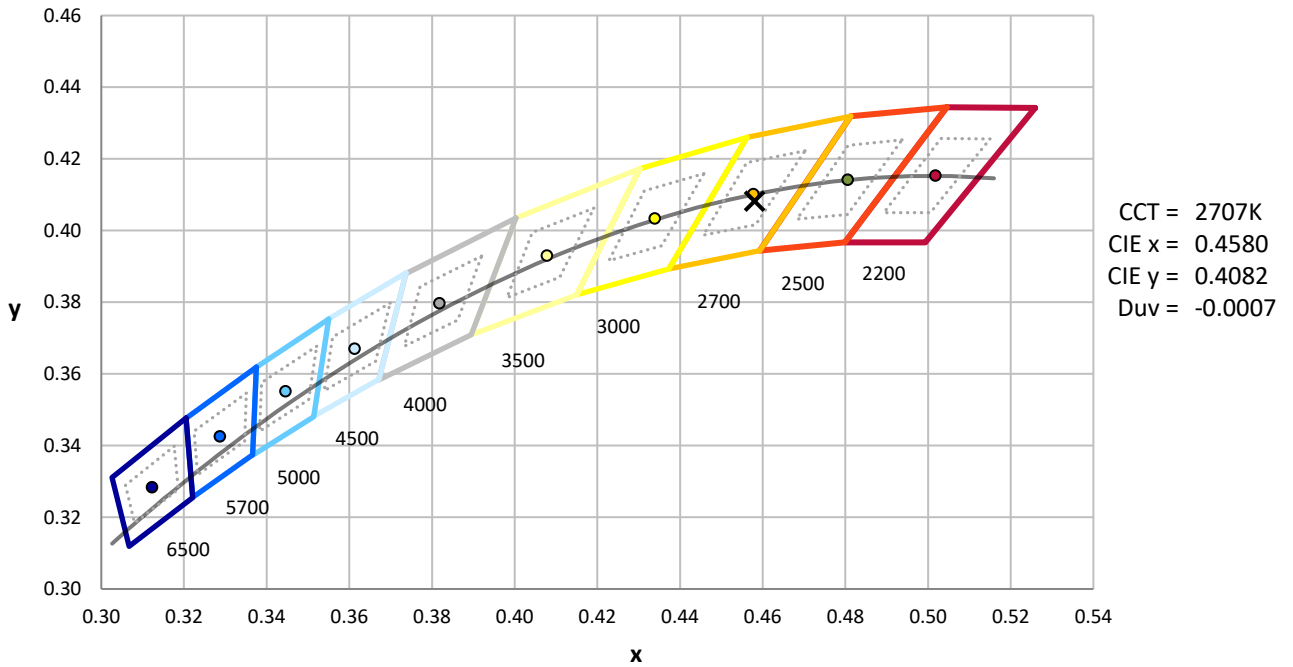
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | 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 2700K 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 | 105 | NR | 620 | 849 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 124 | NR | 625 | 789 | NR | 755 | 20 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 156 | NR | 630 | 727 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 200 | NR | 635 | 659 | NR | 765 | 15 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 245 | NR | 640 | 595 | NR | 770 | 13 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 290 | NR | 645 | 531 | NR | 775 | 11 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 330 | NR | 650 | 472 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 363 | NR | 655 | 417 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 395 | NR | 660 | 364 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 424 | NR | 665 | 317 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 454 | NR | 670 | 274 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 490 | NR | 675 | 237 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 21 | NR | 550 | 530 | NR | 680 | 206 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 579 | NR | 685 | 176 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 63 | NR | 560 | 635 | NR | 690 | 152 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 99 | NR | 565 | 697 | NR | 695 | 129 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 150 | NR | 570 | 765 | NR | 700 | 111 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 233 | NR | 575 | 834 | NR | 705 | 95 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 372 | NR | 580 | 897 | NR | 710 | 81 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 454 | NR | 585 | 948 | NR | 715 | 69 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 345 | NR | 590 | 982 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 235 | NR | 595 | 998 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 187 | NR | 600 | 1000 | NR | 730 | 43 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 141 | NR | 605 | 980 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 107 | NR | 610 | 949 | NR | 740 | 31 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 99 | NR | 615 | 902 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

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Scotopic Flux vs. Wavelength



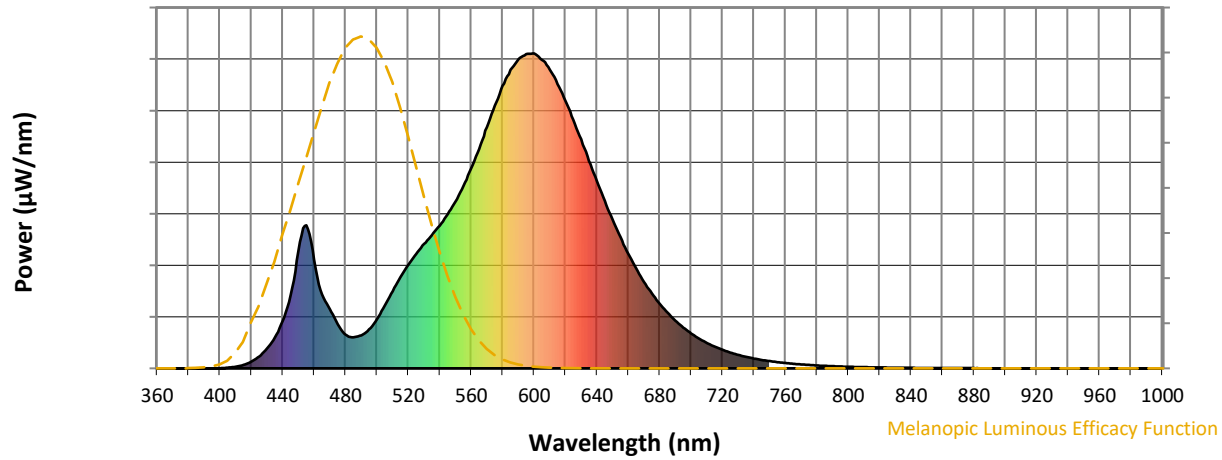
Scotopic Lumens: NR

S/P: 1.12

| 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 | 105 | NR | 620 | 849 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 124 | NR | 625 | 789 | NR | 755 | 20 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 156 | NR | 630 | 727 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 200 | NR | 635 | 659 | NR | 765 | 15 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 245 | NR | 640 | 595 | NR | 770 | 13 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 290 | NR | 645 | 531 | NR | 775 | 11 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 330 | NR | 650 | 472 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 363 | NR | 655 | 417 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 395 | NR | 660 | 364 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 424 | NR | 665 | 317 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 454 | NR | 670 | 274 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 490 | NR | 675 | 237 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 21 | NR | 550 | 530 | NR | 680 | 206 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 579 | NR | 685 | 176 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 63 | NR | 560 | 635 | NR | 690 | 152 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 99 | NR | 565 | 697 | NR | 695 | 129 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 150 | NR | 570 | 765 | NR | 700 | 111 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 233 | NR | 575 | 834 | NR | 705 | 95 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 372 | NR | 580 | 897 | NR | 710 | 81 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 454 | NR | 585 | 948 | NR | 715 | 69 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 345 | NR | 590 | 982 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 235 | NR | 595 | 998 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 187 | NR | 600 | 1000 | NR | 730 | 43 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 141 | NR | 605 | 980 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 107 | NR | 610 | 949 | NR | 740 | 31 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 99 | NR | 615 | 902 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2406-133-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.03

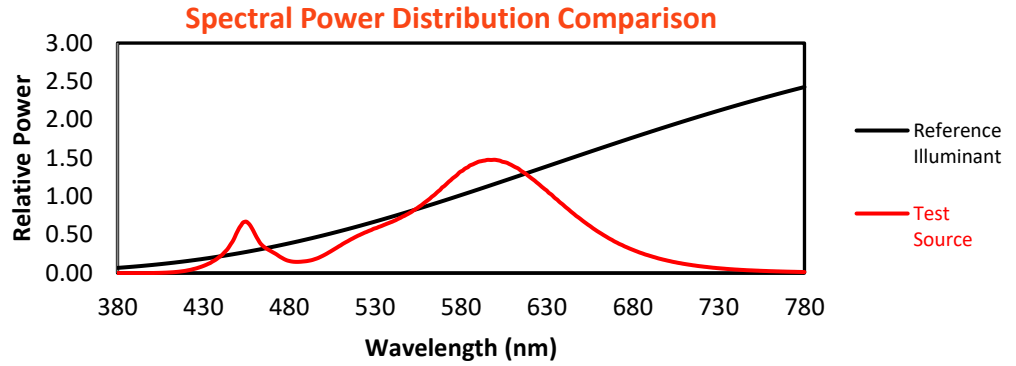
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 105 | NR | 620 | 849 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 124 | NR | 625 | 789 | NR | 755 | 20 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 156 | NR | 630 | 727 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 200 | NR | 635 | 659 | NR | 765 | 15 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 245 | NR | 640 | 595 | NR | 770 | 13 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 290 | NR | 645 | 531 | NR | 775 | 11 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 330 | NR | 650 | 472 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 363 | NR | 655 | 417 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 395 | NR | 660 | 364 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 424 | NR | 665 | 317 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 454 | NR | 670 | 274 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 490 | NR | 675 | 237 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 21 | NR | 550 | 530 | NR | 680 | 206 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 579 | NR | 685 | 176 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 63 | NR | 560 | 635 | NR | 690 | 152 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 99 | NR | 565 | 697 | NR | 695 | 129 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 150 | NR | 570 | 765 | NR | 700 | 111 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 233 | NR | 575 | 834 | NR | 705 | 95 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 372 | NR | 580 | 897 | NR | 710 | 81 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 454 | NR | 585 | 948 | NR | 715 | 69 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 345 | NR | 590 | 982 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 235 | NR | 595 | 998 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 187 | NR | 600 | 1000 | NR | 730 | 43 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 141 | NR | 605 | 980 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 107 | NR | 610 | 949 | NR | 740 | 31 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 99 | NR | 615 | 902 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2406-133-3

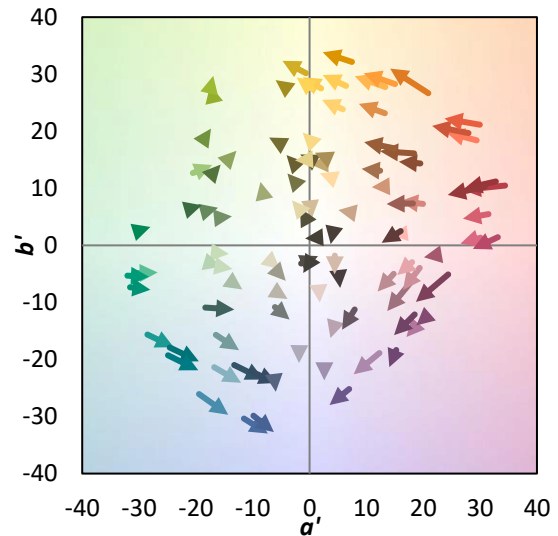
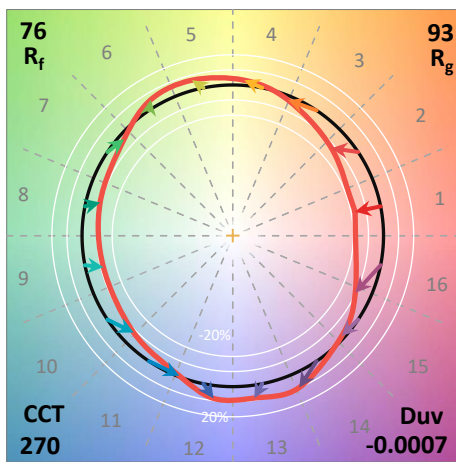
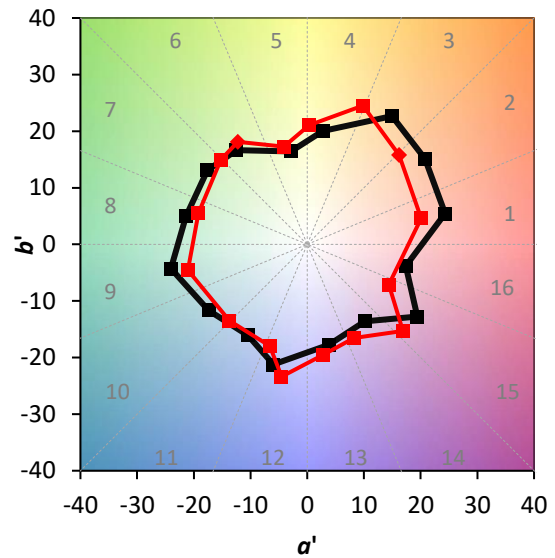
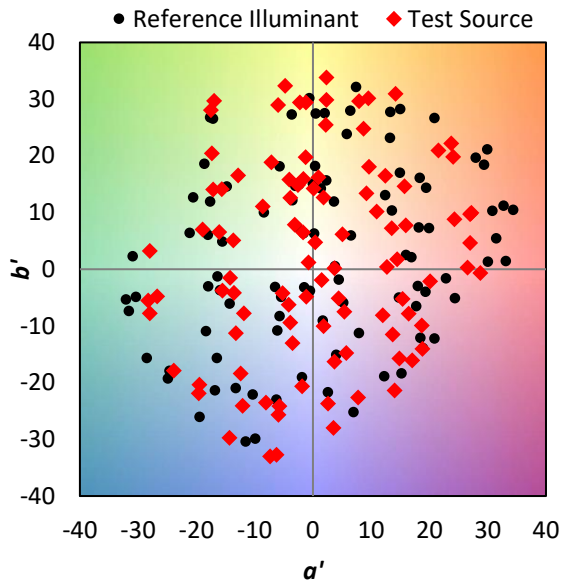
TM-30-18

Summary

$R_f = 75.5$
 $R_g = 92.5$
 CIE $R_a = 71.3$
 $R_9 = -34.9$



Color Vector Graphics



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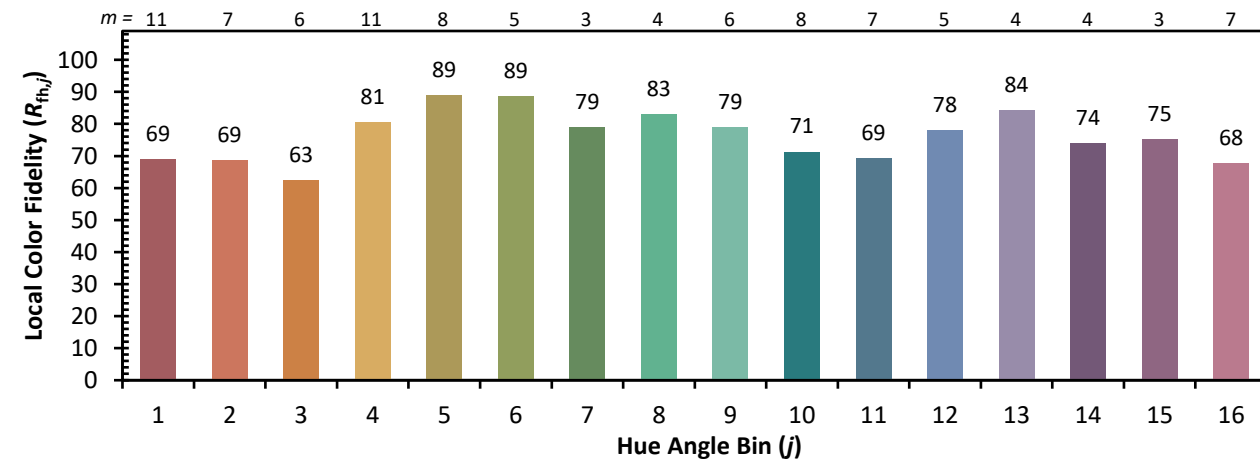
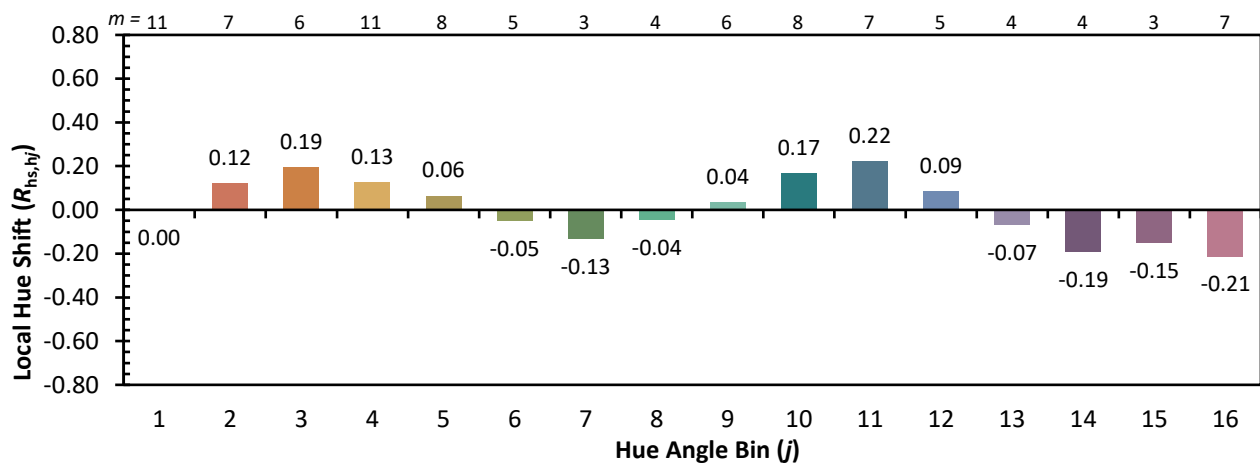
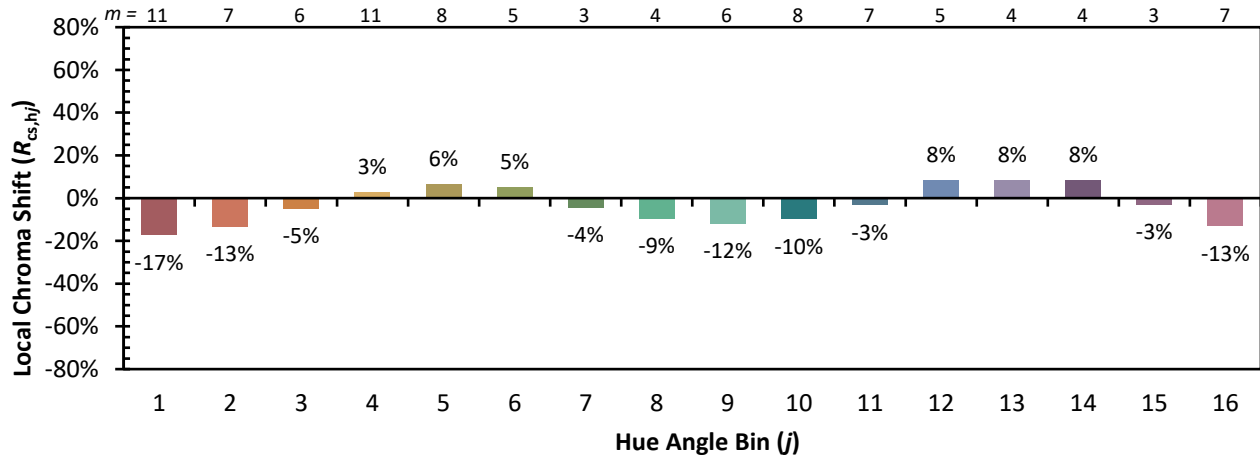
TM-30-18

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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 69 | CES51 = 86 | CES76 = 64 |
| CES02 = 63 | CES27 = 91 | CES52 = 83 | CES77 = 79 |
| CES03 = 31 | CES28 = 87 | CES53 = 77 | CES78 = 68 |
| CES04 = 71 | CES29 = 75 | CES54 = 85 | CES79 = 87 |
| CES05 = 50 | CES30 = 90 | CES55 = 83 | CES80 = 85 |
| CES06 = 52 | CES31 = 77 | CES56 = 75 | CES81 = 67 |
| CES07 = 42 | CES32 = 68 | CES57 = 73 | CES82 = 93 |
| CES08 = 41 | CES33 = 85 | CES58 = 74 | CES83 = 91 |
| CES09 = 29 | CES34 = 80 | CES59 = 84 | CES84 = 89 |
| CES10 = 77 | CES35 = 89 | CES60 = 89 | CES85 = 71 |
| CES11 = 60 | CES36 = 90 | CES61 = 80 | CES86 = 59 |
| CES12 = 66 | CES37 = 88 | CES62 = 87 | CES87 = 77 |
| CES13 = 43 | CES38 = 99 | CES63 = 78 | CES88 = 80 |
| CES14 = 74 | CES39 = 97 | CES64 = 64 | CES89 = 65 |
| CES15 = 72 | CES40 = 94 | CES65 = 66 | CES90 = 81 |
| CES16 = 48 | CES41 = 96 | CES66 = 60 | CES91 = 78 |
| CES17 = 51 | CES42 = 90 | CES67 = 58 | CES92 = 54 |
| CES18 = 57 | CES43 = 80 | CES68 = 66 | CES93 = 71 |
| CES19 = 73 | CES44 = 99 | CES69 = 76 | CES94 = 48 |
| CES20 = 67 | CES45 = 85 | CES70 = 63 | CES95 = 66 |
| CES21 = 88 | CES46 = 82 | CES71 = 60 | CES96 = 76 |
| CES22 = 80 | CES47 = 90 | CES72 = 86 | CES97 = 80 |
| CES23 = 92 | CES48 = 75 | CES73 = 57 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 92 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 66 | |



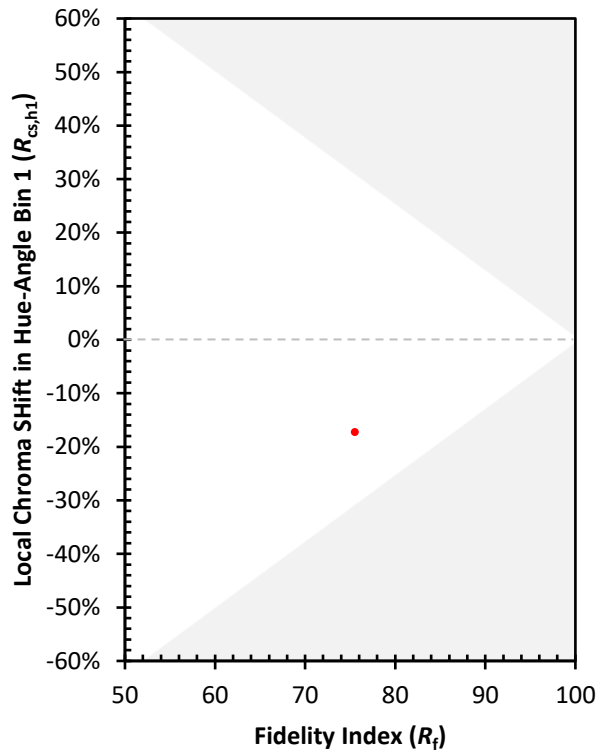
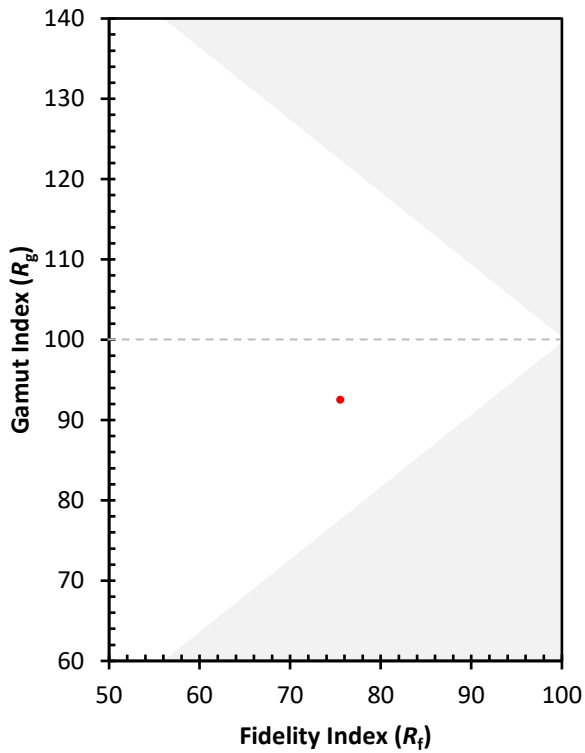
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)