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: P981082

Luminaire Tested: **FFX-CLB-100-750-U-FR-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: | P981082 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 04/15/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | STREETWORKS |
| Catalog Number: | FFX-CLB-100-750-U-FR-T5 |
| Description: | FAIRFAX POST TOP FIXTURE w/ FAIRFAX REFRACTOR T5 DISTRIBUTION LENS |
| Light Source: | (6) 5000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 15987 lumens |
| Efficiency: | N/A |
| Efficacy: | 164.8 lumens/watt |
| Luminous Opening: | Vertical Cylinder (Dia: 1.17' x H: 1.67') |
| IES Classification: | Type V - Short |
| BUG Rating: | B4 - U5 - G3 |

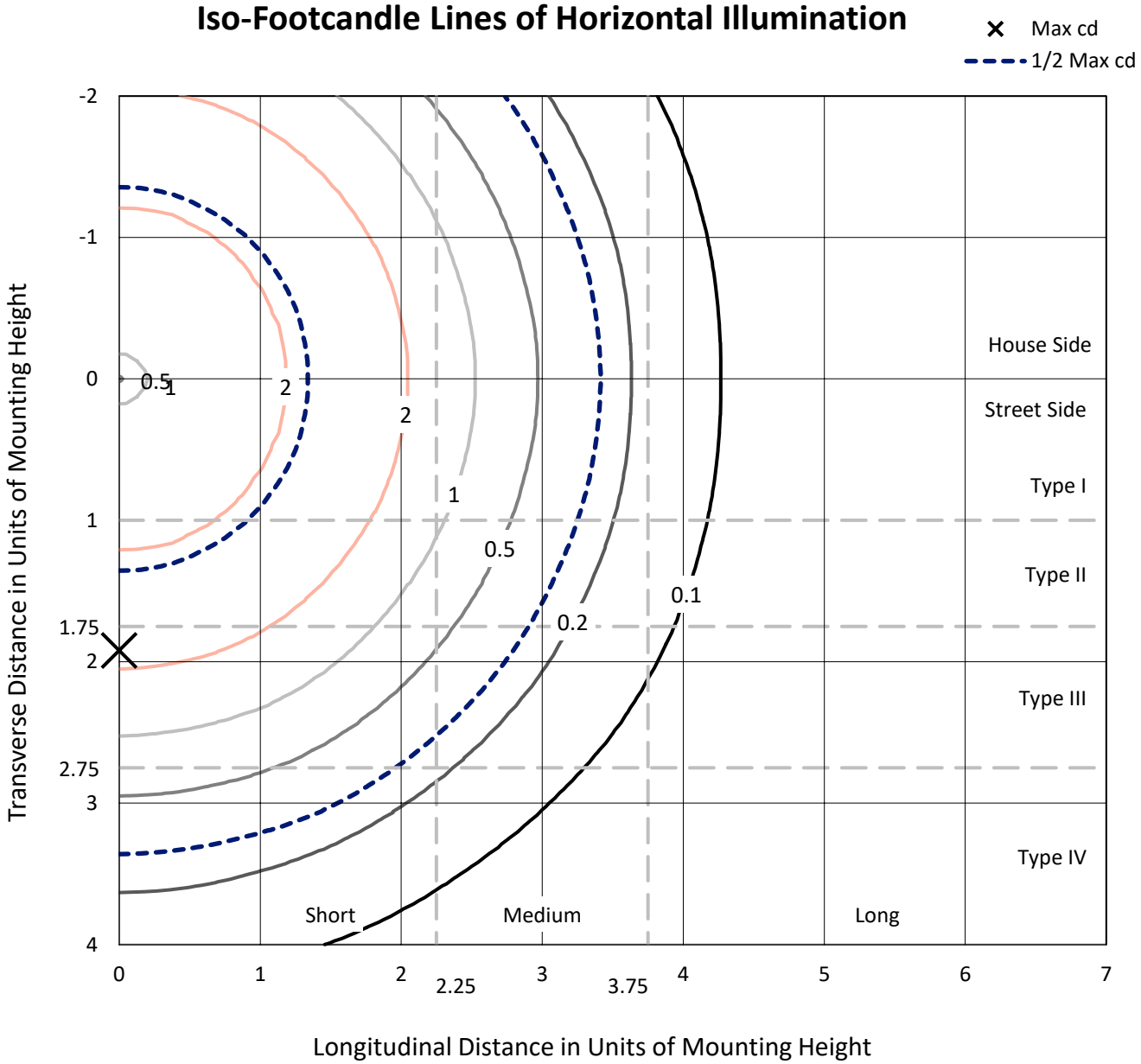
| | |
|---|---|
| Input Watts (W): | 97 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.99 |
| Total Harmonic Distortion (THDi): | 5.42% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

REPORT NUMBER: P981082
CATALOG NUMBER: FFX-CLB-100-750-U-FR-T5

## Iso-Footcandle Lines of Horizontal Illumination



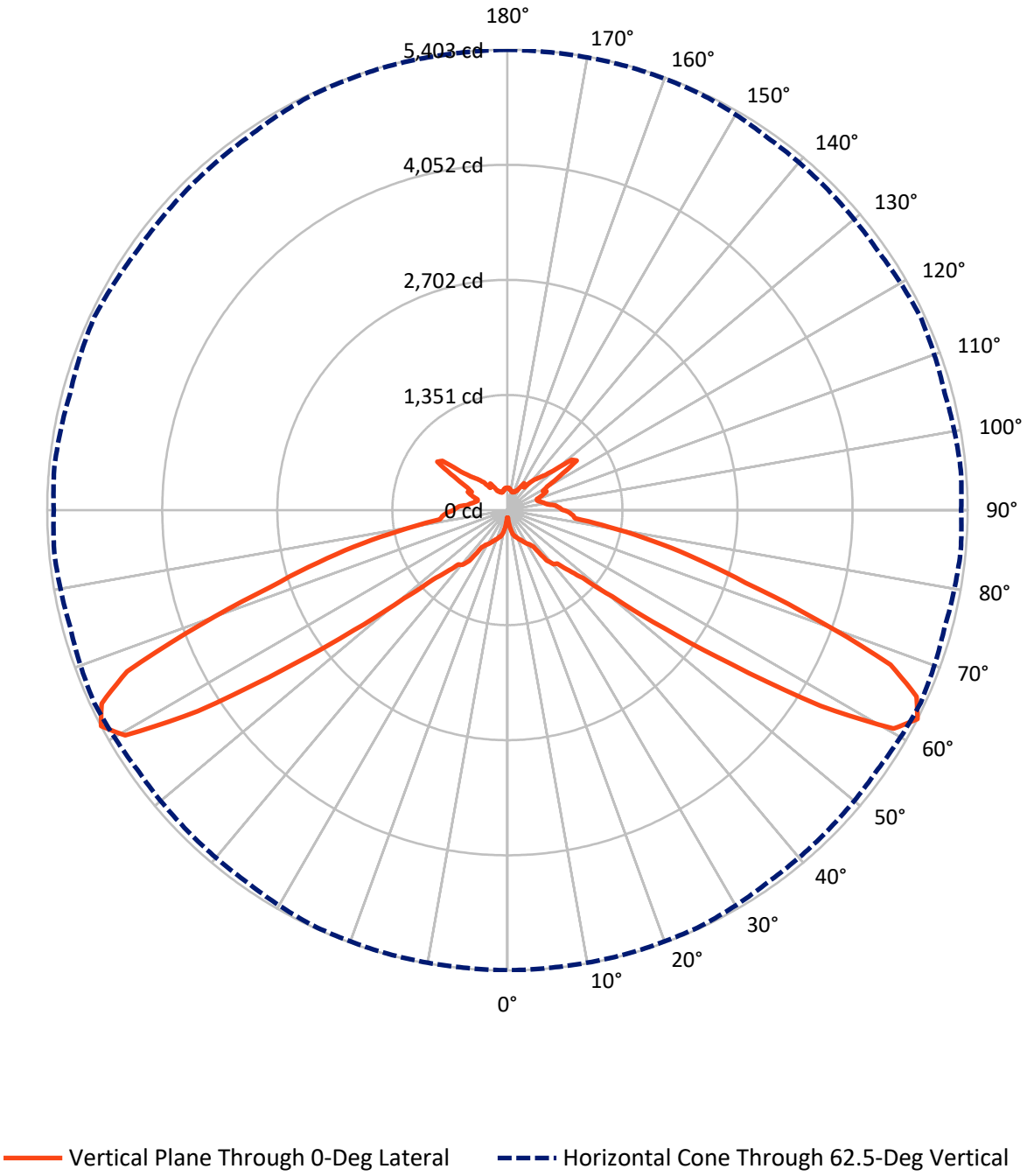

Based on 15 foot mounting height. Maximum calculated value = 3 fc
Type V - Short - N/A

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P981082
CATALOG NUMBER: FFX-CLB-100-750-U-FR-T5

## Luminous Intensity Polar Plot



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Scaled Data Report

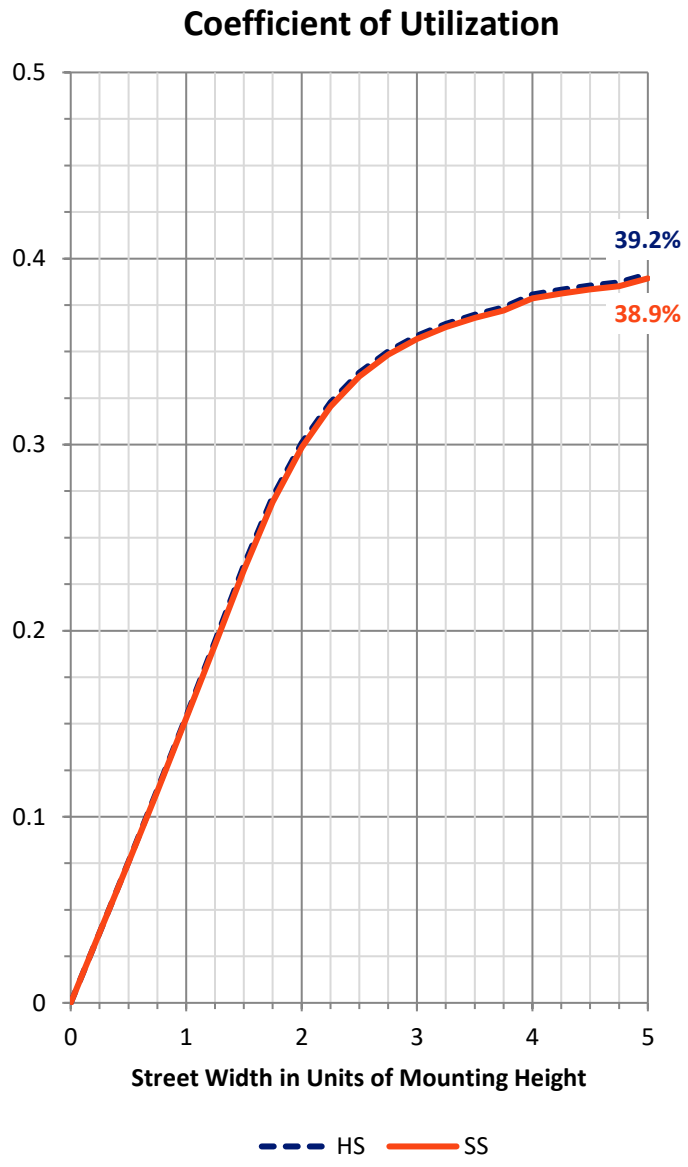
REPORT NUMBER: P981082
CATALOG NUMBER: FFX-CLB-100-750-U-FR-T5

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 6474.2 | 1519.3 | 7993.5 |
| | % Fixture | 40.5 | 9.5 | 50.0 |
| **Street Side** | Lumens | 6474.2 | 1519.3 | 7993.5 |
| | % Fixture | 40.5 | 9.5 | 50.0 |
| **Total** | Lumens | 12948.5 | 3038.5 | 15987.0 |
| | % Fixture | 81.0 | 19.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 16.5 | 0.1 |
| 10°-20° | 88.8 | 0.6 |
| 20°-30° | 188.9 | 1.2 |
| 30°-40° | 381.8 | 2.4 |
| 40°-50° | 853.1 | 5.3 |
| 50°-60° | 3008.8 | 18.8 |
| 60°-70° | 4924.2 | 30.8 |
| 70°-80° | 2533.2 | 15.8 |
| 80°-90° | 953.1 | 6.0 |
| 90°-100° | 613.4 | 3.8 |
| 100°-110° | 409.1 | 2.6 |
| 110°-120° | 439.3 | 2.7 |
| 120°-130° | 718.9 | 4.5 |
| 130°-140° | 430.3 | 2.7 |
| 140°-150° | 223.6 | 1.4 |
| 150°-160° | 116.9 | 0.7 |
| 160°-170° | 63.2 | 0.4 |
| 170°-180° | 23.7 | 0.1 |
| 0°-90° | 12948.5 | 81.0 |
| 0°-180° | 15987.0 | 100.0 |



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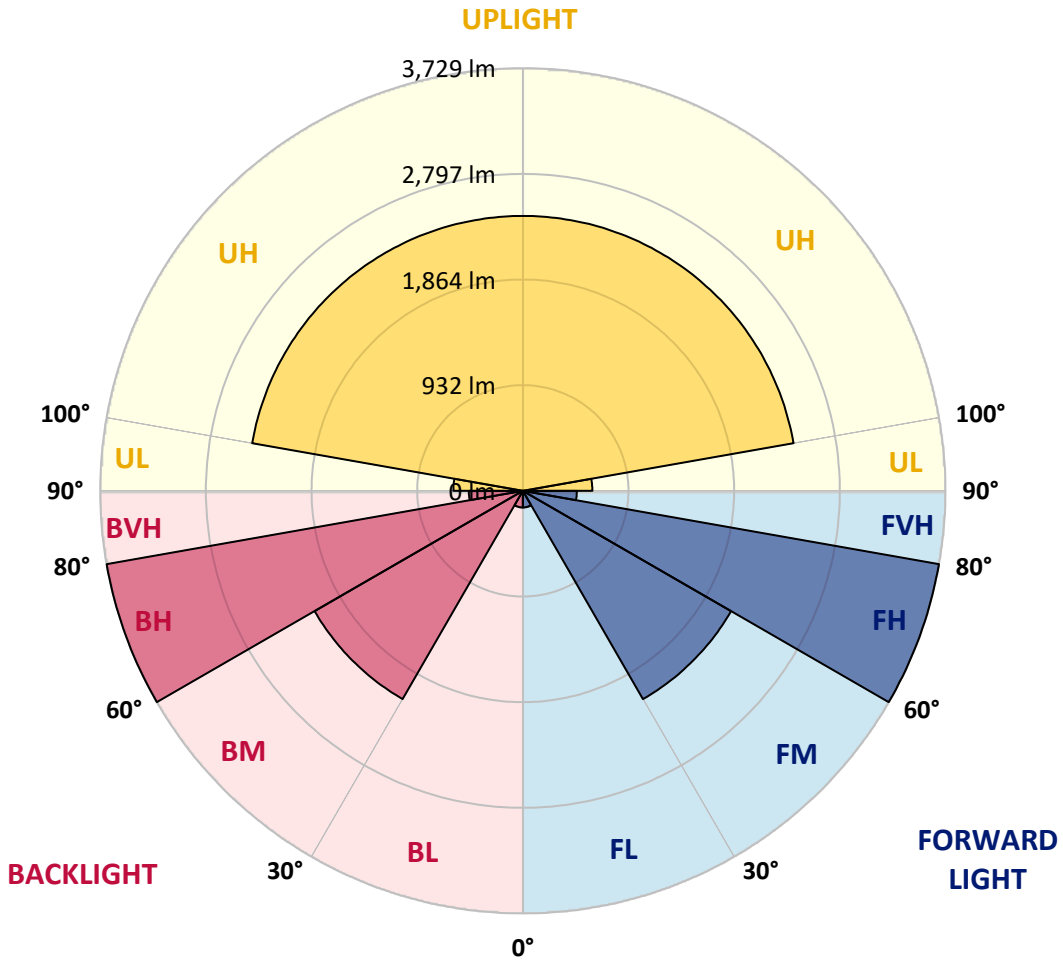
Scaled Data Report

REPORT NUMBER: P981082
CATALOG NUMBER: FFX-CLB-100-750-U-FR-T5

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 147.1 | 0.9 | | | |
| FM | (30°-60°) | 2121.9 | 13.3 | | | |
| FH | (60°-80°) | 3728.7 | 23.3 | | | G2/5000 |
| FVH | (80°-90°) | 476.6 | 3.0 | | | G3/500 |
| BL | (0°-30°) | 147.1 | 0.9 | B1/500 | | |
| BM | (30°-60°) | 2121.9 | 13.3 | B2/2500 | | |
| BH | (60°-80°) | 3728.7 | 23.3 | B4/5000 | | G2/5000 |
| BVH | (80°-90°) | 476.6 | 3.0 | | | G3/500 |
| UL | (90°-100°) | 613.4 | 3.8 | | U4/1000 | |
| UH | (100°-180°) | 2425.1 | 15.2 | | U5 | |

**BUG Rating: B4-U5-G3**
Type V Short



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Scaled Data Report

REPORT NUMBER: P981082
CATALOG NUMBER: FFX-CLB-100-750-U-FR-T5

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 | 99.3 |
| 2.5° | 91.1 | 92.1 | 95.2 | 97.2 | 98.2 | 96.2 | 97.2 | 99.3 | 99.3 | 100.3 | 100.3 |
| 5° | 135.1 | 136.1 | 135.1 | 134.1 | 133.0 | 135.1 | 136.1 | 135.1 | 132.0 | 133.0 | 132.0 |
| 7.5° | 199.6 | 199.6 | 191.4 | 189.3 | 187.3 | 196.5 | 201.6 | 199.6 | 189.3 | 180.1 | 178.1 |
| 10° | 245.6 | 244.6 | 237.4 | 228.2 | 227.2 | 233.3 | 246.6 | 249.7 | 233.3 | 222.1 | 220.0 |
| 12.5° | 291.7 | 284.5 | 280.4 | 271.2 | 272.2 | 276.3 | 285.5 | 286.5 | 275.3 | 266.1 | 259.9 |
| 15° | 319.3 | 320.3 | 320.3 | 315.2 | 313.1 | 317.2 | 321.3 | 324.4 | 316.2 | 309.0 | 305.0 |
| 17.5° | 331.6 | 332.6 | 335.7 | 338.7 | 338.7 | 336.7 | 336.7 | 337.7 | 337.7 | 337.7 | 336.7 |
| 20° | 357.1 | 358.2 | 357.1 | 359.2 | 362.3 | 360.2 | 357.1 | 358.2 | 357.1 | 358.2 | 357.1 |
| 22.5° | 377.6 | 376.6 | 376.6 | 379.7 | 381.7 | 380.7 | 377.6 | 378.6 | 376.6 | 377.6 | 377.6 |
| 25° | 399.1 | 400.1 | 402.2 | 403.2 | 404.2 | 404.2 | 403.2 | 405.2 | 404.2 | 402.2 | 402.2 |
| 27.5° | 428.8 | 428.8 | 428.8 | 428.8 | 432.9 | 432.9 | 430.8 | 431.8 | 428.8 | 426.7 | 425.7 |
| 30° | 457.4 | 458.5 | 456.4 | 458.5 | 462.5 | 460.5 | 459.5 | 461.5 | 457.4 | 456.4 | 456.4 |
| 32.5° | 484.0 | 484.0 | 483.0 | 489.2 | 490.2 | 488.1 | 491.2 | 493.2 | 495.3 | 494.3 | 499.4 |
| 35° | 529.1 | 531.1 | 548.5 | 563.9 | 569.0 | 568.0 | 572.0 | 574.1 | 570.0 | 570.0 | 566.9 |
| 37.5° | 747.0 | 746.0 | 721.5 | 697.9 | 709.2 | 723.5 | 709.2 | 705.1 | 696.9 | 692.8 | 690.8 |
| 40° | 834.0 | 834.0 | 811.5 | 813.6 | 805.4 | 806.4 | 811.5 | 827.9 | 818.7 | 802.3 | 803.3 |
| 42.5° | 860.6 | 868.8 | 895.4 | 943.5 | 926.1 | 898.5 | 865.7 | 877.0 | 900.5 | 914.9 | 917.9 |
| 45° | 1012.1 | 1023.3 | 1025.4 | 1023.3 | 1015.1 | 1026.4 | 1018.2 | 1024.4 | 1027.4 | 1045.8 | 1054.0 |
| 47.5° | 1190.1 | 1186.0 | 1187.1 | 1212.7 | 1203.4 | 1210.6 | 1226.0 | 1223.9 | 1237.2 | 1235.2 | 1242.3 |
| 50° | 1595.4 | 1606.6 | 1590.3 | 1623.0 | 1631.2 | 1618.9 | 1678.3 | 1678.3 | 1684.4 | 1657.8 | 1660.9 |
| 52.5° | 2293.3 | 2266.7 | 2266.7 | 2274.9 | 2276.9 | 2314.8 | 2356.7 | 2355.7 | 2371.1 | 2356.7 | 2388.5 |
| 55° | 3191.8 | 3185.6 | 3198.9 | 3294.1 | 3304.3 | 3271.6 | 3280.8 | 3238.9 | 3373.9 | 3339.1 | 3364.7 |
| 57.5° | 4334.8 | 4350.2 | 4332.8 | 4333.8 | 4325.6 | 4316.4 | 4367.6 | 4280.6 | 4346.1 | 4272.4 | 4274.5 |
| 60° | 5209.8 | 5189.3 | 5132.0 | 5019.5 | 5010.2 | 5044.0 | 5101.3 | 5104.4 | 5038.9 | 4998.0 | 4963.2 |
| 62.5° | 5403.2 | 5396.0 | 5394.0 | 5384.8 | 5332.6 | 5318.3 | 5307.0 | 5353.1 | 5314.2 | 5343.9 | 5326.5 |
| 65° | 5279.4 | 5248.7 | 5276.3 | 5320.3 | 5286.6 | 5220.0 | 5162.7 | 5242.5 | 5217.0 | 5327.5 | 5270.2 |
| 67.5° | 4850.6 | 4822.0 | 4810.7 | 4897.7 | 4855.7 | 4750.3 | 4711.4 | 4729.9 | 4700.2 | 4822.0 | 4799.4 |
| 70° | 3849.8 | 3850.8 | 3873.3 | 3985.9 | 3943.9 | 3866.2 | 3819.1 | 3831.4 | 3861.0 | 3963.4 | 3934.7 |
| 72.5° | 2920.6 | 2914.5 | 2941.1 | 2969.7 | 2971.8 | 2965.6 | 2953.3 | 2962.6 | 2980.0 | 3036.2 | 3050.6 |
| 75° | 2304.6 | 2302.5 | 2259.5 | 2274.9 | 2268.7 | 2296.4 | 2337.3 | 2331.2 | 2340.4 | 2297.4 | 2285.1 |
| 77.5° | 1743.8 | 1745.8 | 1729.4 | 1722.3 | 1716.1 | 1761.2 | 1826.7 | 1829.7 | 1785.7 | 1754.0 | 1740.7 |
| 80° | 1206.5 | 1214.7 | 1263.8 | 1264.8 | 1274.1 | 1274.1 | 1326.2 | 1320.1 | 1304.8 | 1303.7 | 1303.7 |
| 82.5° | 800.2 | 814.6 | 864.7 | 922.0 | 931.2 | 920.0 | 948.6 | 956.8 | 976.3 | 990.6 | 994.7 |
| 85° | 769.5 | 795.1 | 778.8 | 803.3 | 804.3 | 811.5 | 822.8 | 826.9 | 824.8 | 827.9 | 821.7 |
| 87.5° | 720.4 | 752.2 | 748.1 | 764.4 | 768.5 | 779.8 | 792.1 | 797.2 | 786.9 | 778.8 | 776.7 |
| 90° | 639.6 | 669.3 | 683.6 | 696.9 | 701.0 | 697.9 | 706.1 | 708.1 | 707.1 | 697.9 | 695.9 |
| 92.5° | 605.8 | 617.1 | 625.3 | 635.5 | 647.8 | 640.6 | 645.7 | 640.6 | 648.8 | 646.7 | 648.8 |
| 95° | 562.8 | 566.9 | 561.8 | 568.0 | 570.0 | 562.8 | 561.8 | 561.8 | 557.7 | 552.6 | 554.6 |
| 97.5° | 475.9 | 483.0 | 481.0 | 481.0 | 482.0 | 478.9 | 479.9 | 478.9 | 481.0 | 477.9 | 476.9 |
| 100° | 444.1 | 444.1 | 442.1 | 441.1 | 440.0 | 437.0 | 435.9 | 432.9 | 432.9 | 429.8 | 427.8 |
| 102.5° | 411.4 | 414.5 | 411.4 | 410.4 | 410.4 | 405.2 | 406.3 | 406.3 | 404.2 | 403.2 | 398.1 |
| 105° | 387.8 | 386.8 | 384.8 | 380.7 | 376.6 | 376.6 | 378.6 | 377.6 | 374.5 | 373.5 | 369.4 |
| 107.5° | 366.4 | 364.3 | 361.2 | 355.1 | 353.1 | 354.1 | 357.1 | 358.2 | 357.1 | 353.1 | 350.0 |
| 110° | 370.4 | 367.4 | 362.3 | 360.2 | 363.3 | 365.3 | 366.4 | 368.4 | 374.5 | 376.6 | 372.5 |

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P981082
CATALOG NUMBER: FFX-CLB-100-750-U-FR-T5

**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | *446.2* | 441.1 | 438.0 | 424.7 | 434.9 | 437.0 | 434.9 | 435.9 | 439.0 | 434.9 | 437.0 |
| 115° | *509.6* | 514.7 | 515.8 | 474.8 | 475.9 | 469.7 | 463.6 | 461.5 | 452.3 | 459.5 | 483.0 |
| 117.5° | *470.7* | 487.1 | 451.3 | 432.9 | 421.6 | 417.5 | 427.8 | 429.8 | 420.6 | 431.8 | 465.6 |
| 120° | *540.3* | 547.5 | 473.8 | 438.0 | 437.0 | 454.4 | 482.0 | 490.2 | 479.9 | 501.4 | 540.3 |
| 122.5° | *733.7* | 728.6 | 721.5 | 727.6 | 711.2 | 710.2 | 732.7 | 729.6 | 702.0 | 705.1 | 714.3 |
| 125° | *999.8* | 997.8 | 984.4 | 971.1 | 959.9 | 966.0 | 956.8 | 945.6 | 925.1 | 922.0 | 922.0 |
| 127.5° | *956.8* | 956.8 | 947.6 | 940.4 | 929.2 | 930.2 | 929.2 | 908.7 | 900.5 | 901.6 | 901.6 |
| 130° | *704.1* | 705.1 | 733.7 | 759.3 | 752.2 | 755.2 | 736.8 | 730.7 | 757.3 | 781.8 | 781.8 |
| 132.5° | *596.6* | 598.7 | 630.4 | 649.8 | 639.6 | 619.1 | 599.7 | 601.7 | 618.1 | 642.7 | 641.6 |
| 135° | *533.2* | 537.3 | 539.3 | 537.3 | 531.1 | 526.0 | 525.0 | 530.1 | 534.2 | 551.6 | 555.7 |
| 137.5° | *483.0* | 479.9 | 469.7 | 460.5 | 453.3 | 466.6 | 474.8 | 472.8 | 468.7 | 465.6 | 467.7 |
| 140° | *424.7* | 420.6 | 406.3 | 404.2 | 408.3 | 414.5 | 416.5 | 418.5 | 419.6 | 417.5 | 416.5 |
| 142.5° | *331.6* | 334.6 | 347.9 | 364.3 | 365.3 | 355.1 | 356.1 | 356.1 | 360.2 | 365.3 | 363.3 |
| 145° | *332.6* | 334.6 | 339.7 | 352.0 | 352.0 | 343.8 | 340.8 | 343.8 | 353.1 | 363.3 | 363.3 |
| 147.5° | *370.4* | 367.4 | 360.2 | 357.1 | 354.1 | 353.1 | 353.1 | 345.9 | 346.9 | 346.9 | 346.9 |
| 150° | *315.2* | 314.2 | 310.1 | 308.0 | 307.0 | 306.0 | 311.1 | 310.1 | 312.1 | 310.1 | 309.0 |
| 152.5° | *259.9* | 258.9 | 254.8 | 251.7 | 252.8 | 258.9 | 267.1 | 270.2 | 268.1 | 264.0 | 262.0 |
| 155° | *246.6* | 247.6 | 241.5 | 239.5 | 240.5 | 243.6 | 245.6 | 245.6 | 241.5 | 236.4 | 236.4 |
| 157.5° | *233.3* | 234.3 | 231.3 | 229.2 | 230.3 | 232.3 | 235.4 | 236.4 | 233.3 | 229.2 | 228.2 |
| 160° | *223.1* | 222.1 | 221.0 | 221.0 | 221.0 | 221.0 | 222.1 | 223.1 | 222.1 | 221.0 | 220.0 |
| 162.5° | *218.0* | 218.0 | 218.0 | 218.0 | 219.0 | 218.0 | 218.0 | 218.0 | 218.0 | 218.0 | 218.0 |
| 165° | *216.9* | 216.9 | 218.0 | 220.0 | 221.0 | 220.0 | 220.0 | 220.0 | 221.0 | 223.1 | 223.1 |
| 167.5° | *226.2* | 225.1 | 228.2 | 229.2 | 230.3 | 229.2 | 228.2 | 227.2 | 228.2 | 230.3 | 230.3 |
| 170° | *236.4* | 237.4 | 237.4 | 238.4 | 238.4 | 237.4 | 236.4 | 237.4 | 236.4 | 237.4 | 237.4 |
| 172.5° | *246.6* | 246.6 | 246.6 | 245.6 | 245.6 | 245.6 | 245.6 | 245.6 | 245.6 | 244.6 | 244.6 |
| 175° | *254.8* | 254.8 | 254.8 | 254.8 | 253.8 | 254.8 | 255.8 | 255.8 | 254.8 | 254.8 | 252.8 |
| 177.5° | *262.0* | 262.0 | 262.0 | 262.0 | 262.0 | 262.0 | 262.0 | 261.0 | 261.0 | 261.0 | 259.9 |
| 180° | *263.0* | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 |

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: SP1-2501-332-5

Test Date: 03/25/2025

Luminaire Tested: FFX-CLB-100-750-U-FR-T5

Data in this report applies to families of products including FFX-CLB-100-750-U-FR-T5

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

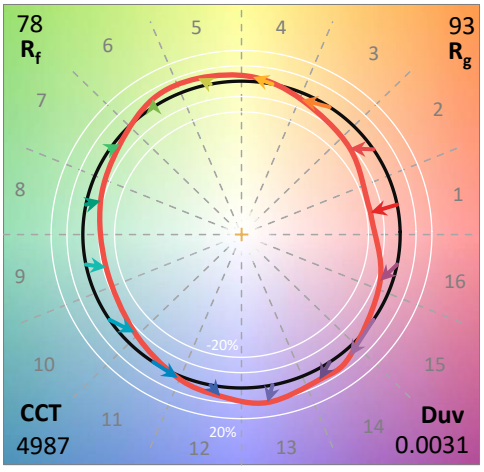
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2501-332-5 |
| 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-100-750-U-FR-T5** |
| Description: | FAIRFAX ACORN W/ FAIRFAX REFRACTOR 100W T5 |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 4987 | CRI (Ra): | 75.8 | | |
| CIE u': | 0.2094 | R1: | 71.6 | R9: | -30.4 |
| CIE v': | 0.4882 | R2: | 82.8 | R10: | 59.9 |
| Duv: | 0.0031 | R3: | 91.2 | R11: | 70.9 |
| CIE x: | 0.3461 | R4: | 73.8 | R12: | 51.2 |
| CIE y: | 0.3586 | R5: | 73.0 | R13: | 74.2 |
| CIE z: | 0.2954 | R6: | 76.1 | R14: | 95.3 |
| Peak Wavelength (nm): | 450 | R7: | 82.9 | R15: | 63.7 |
| Dominant Wavelength (nm): | 570 | R8: | 54.9 | | |
| Purity: | 11.4 | | | | |

| | |
|---|---|
| Rf: | 78.3 |
| Rg: | 93.4 |




## Test Conditions

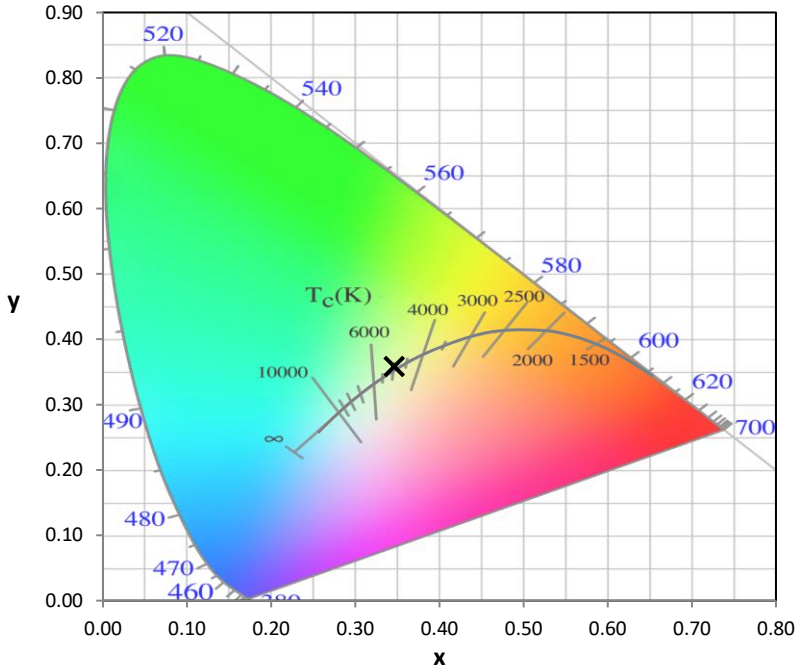
| | |
|---|---|
| Stabilization Time: | 67M |
| Operation Time: | 2H 7M |
| Sphere Temperature (°C): | 24.9 |

REPORT NUMBER: SP1-2501-332-5

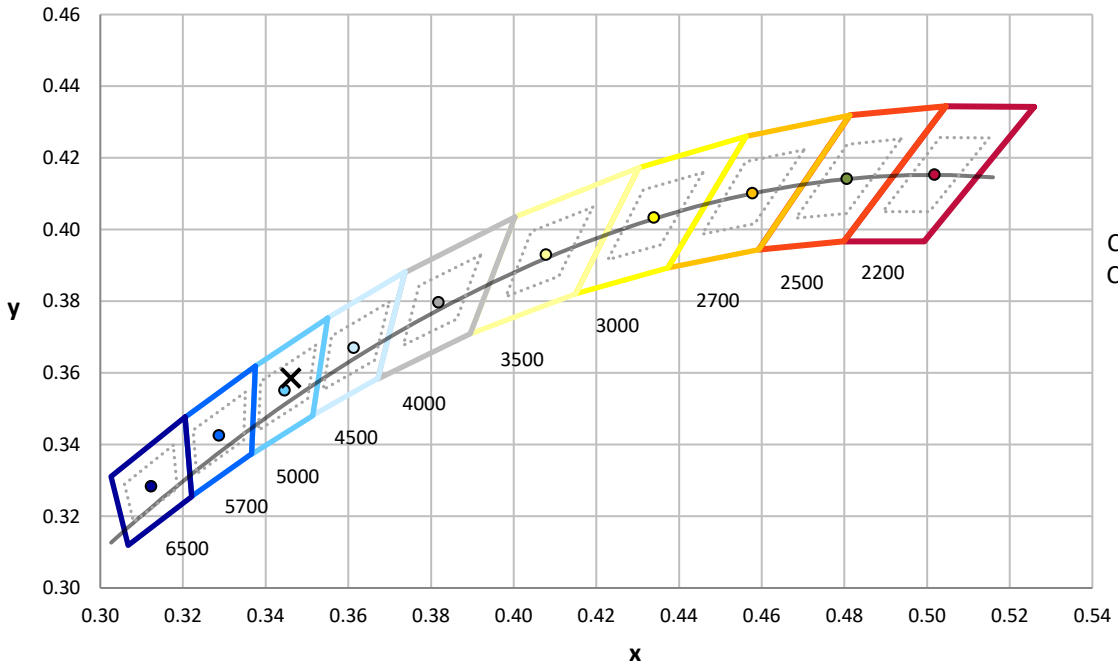
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 12/16/2024 | 6/16/2025 |
| Power Meter | INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | IN0063 | 10/22/2024 | 10/22/2025 |
| DC 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: SP1-2501-332-5

**CIE 1931 Chromaticity Diagram**




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

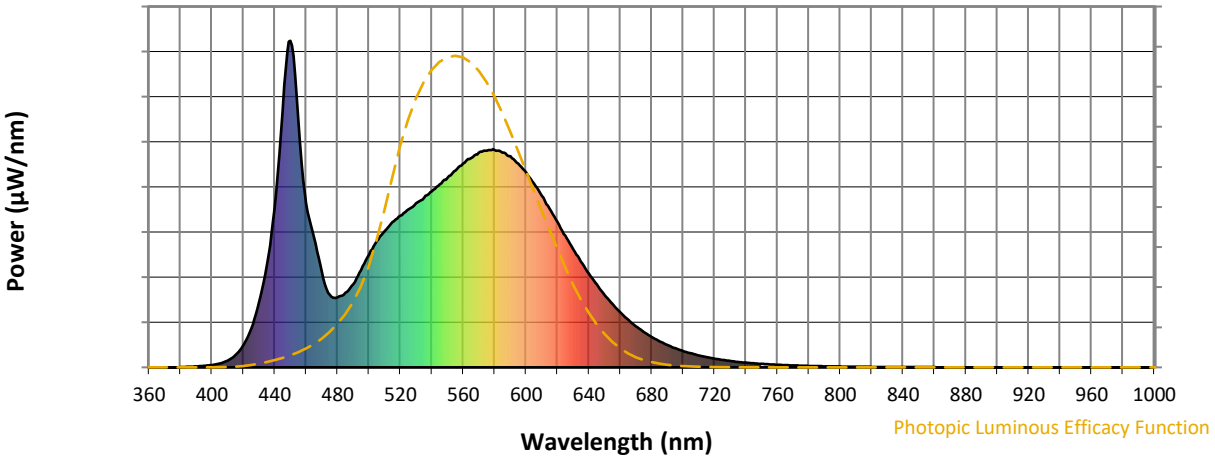



CCT = 4987K
CIE x = 0.3461
CIE y = 0.3586
Duv = 0.0031

Point lies inside the ANSI 5000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

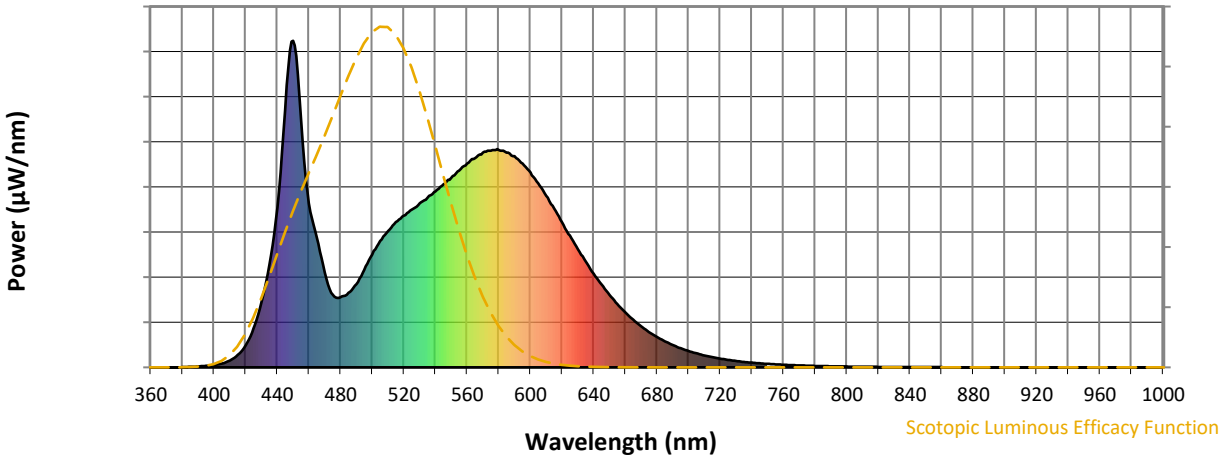



## Photopic Lumens: NR

| 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 | 255 | NR | 620 | 445 | NR | 750 | 11 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 298 | NR | 625 | 403 | NR | 755 | 9 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 345 | NR | 630 | 362 | NR | 760 | 8 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 387 | NR | 635 | 323 | NR | 765 | 7 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 417 | NR | 640 | 287 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 445 | NR | 645 | 254 | NR | 775 | 5 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 464 | NR | 650 | 222 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 483 | NR | 655 | 194 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 503 | NR | 660 | 168 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 12 | NR | 535 | 519 | NR | 665 | 146 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 21 | NR | 540 | 539 | NR | 670 | 126 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 38 | NR | 545 | 561 | NR | 675 | 108 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 580 | NR | 680 | 93 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 119 | NR | 555 | 602 | NR | 685 | 80 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 199 | NR | 560 | 624 | NR | 690 | 69 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 315 | NR | 565 | 641 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 489 | NR | 570 | 657 | NR | 700 | 50 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 787 | NR | 575 | 663 | NR | 705 | 43 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 666 | NR | 710 | 36 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 757 | NR | 585 | 657 | NR | 715 | 31 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 503 | NR | 590 | 646 | NR | 720 | 27 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 398 | NR | 595 | 624 | NR | 725 | 23 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 290 | NR | 600 | 597 | NR | 730 | 20 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 222 | NR | 605 | 564 | NR | 735 | 17 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 215 | NR | 610 | 525 | NR | 740 | 14 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 228 | NR | 615 | 486 | NR | 745 | 12 | NR | 875 | 0 | NR | | | |

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## Scotopic Flux vs. Wavelength

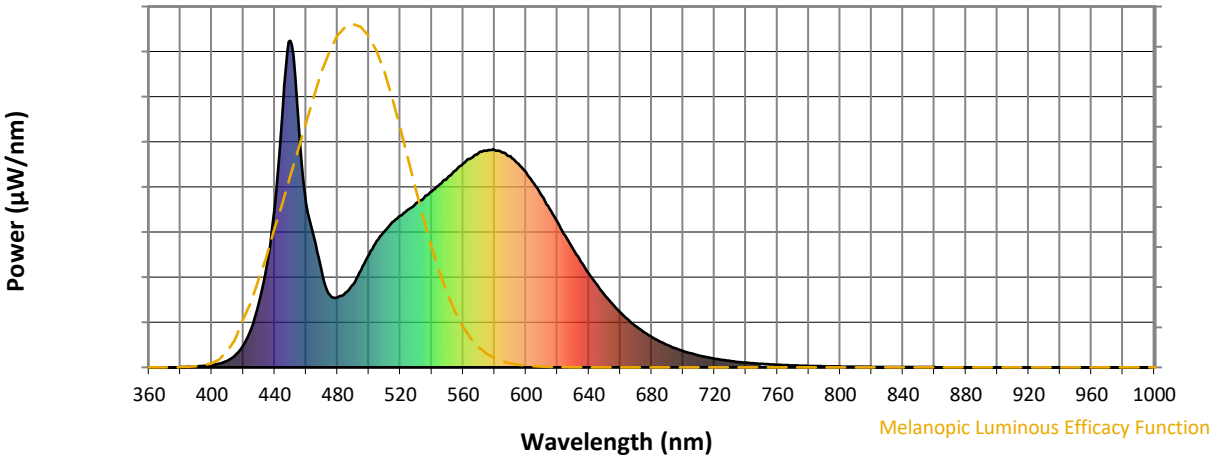



**Scotopic Lumens: NR** **S/P: 1.87**

| 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 | 255 | NR | 620 | 445 | NR | 750 | 11 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 298 | NR | 625 | 403 | NR | 755 | 9 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 345 | NR | 630 | 362 | NR | 760 | 8 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 387 | NR | 635 | 323 | NR | 765 | 7 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 417 | NR | 640 | 287 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 445 | NR | 645 | 254 | NR | 775 | 5 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 464 | NR | 650 | 222 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 483 | NR | 655 | 194 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 503 | NR | 660 | 168 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 12 | NR | 535 | 519 | NR | 665 | 146 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 21 | NR | 540 | 539 | NR | 670 | 126 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 38 | NR | 545 | 561 | NR | 675 | 108 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 580 | NR | 680 | 93 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 119 | NR | 555 | 602 | NR | 685 | 80 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 199 | NR | 560 | 624 | NR | 690 | 69 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 315 | NR | 565 | 641 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 489 | NR | 570 | 657 | NR | 700 | 50 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 787 | NR | 575 | 663 | NR | 705 | 43 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 666 | NR | 710 | 36 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 757 | NR | 585 | 657 | NR | 715 | 31 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 503 | NR | 590 | 646 | NR | 720 | 27 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 398 | NR | 595 | 624 | NR | 725 | 23 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 290 | NR | 600 | 597 | NR | 730 | 20 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 222 | NR | 605 | 564 | NR | 735 | 17 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 215 | NR | 610 | 525 | NR | 740 | 14 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 228 | NR | 615 | 486 | NR | 745 | 12 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.92**

| 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 | 255 | NR | 620 | 445 | NR | 750 | 11 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 298 | NR | 625 | 403 | NR | 755 | 9 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 345 | NR | 630 | 362 | NR | 760 | 8 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 387 | NR | 635 | 323 | NR | 765 | 7 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 417 | NR | 640 | 287 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 445 | NR | 645 | 254 | NR | 775 | 5 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 464 | NR | 650 | 222 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 483 | NR | 655 | 194 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 503 | NR | 660 | 168 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 12 | NR | 535 | 519 | NR | 665 | 146 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 21 | NR | 540 | 539 | NR | 670 | 126 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 38 | NR | 545 | 561 | NR | 675 | 108 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 580 | NR | 680 | 93 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 119 | NR | 555 | 602 | NR | 685 | 80 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 199 | NR | 560 | 624 | NR | 690 | 69 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 315 | NR | 565 | 641 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 489 | NR | 570 | 657 | NR | 700 | 50 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 787 | NR | 575 | 663 | NR | 705 | 43 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 666 | NR | 710 | 36 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 757 | NR | 585 | 657 | NR | 715 | 31 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 503 | NR | 590 | 646 | NR | 720 | 27 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 398 | NR | 595 | 624 | NR | 725 | 23 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 290 | NR | 600 | 597 | NR | 730 | 20 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 222 | NR | 605 | 564 | NR | 735 | 17 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 215 | NR | 610 | 525 | NR | 740 | 14 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 228 | NR | 615 | 486 | NR | 745 | 12 | NR | 875 | 0 | NR | | | |

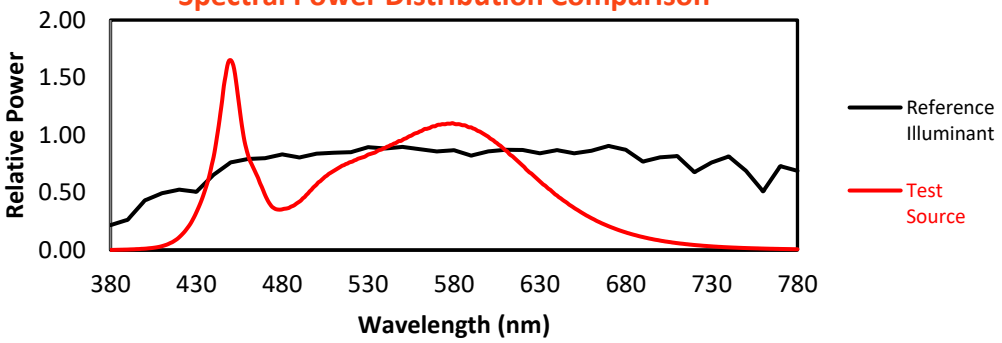
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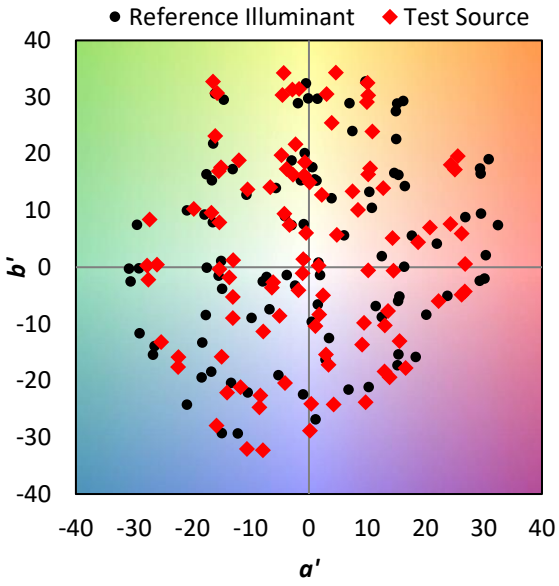
## Summary

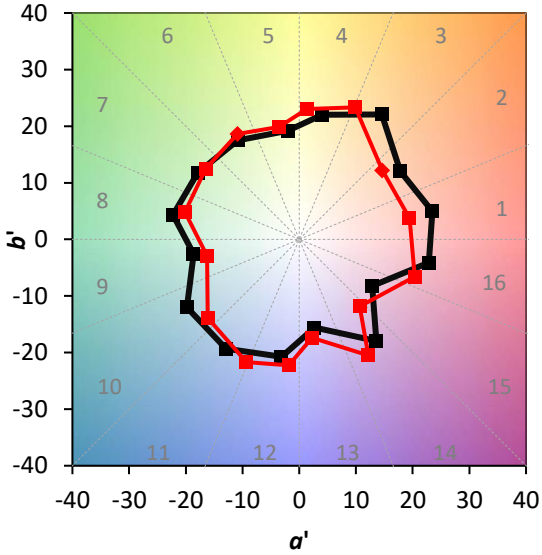
$R_f$ = 78.3
$R_g$ = 93.4
CIE $R_a$ = 75.8
$R_9$ = -30.4

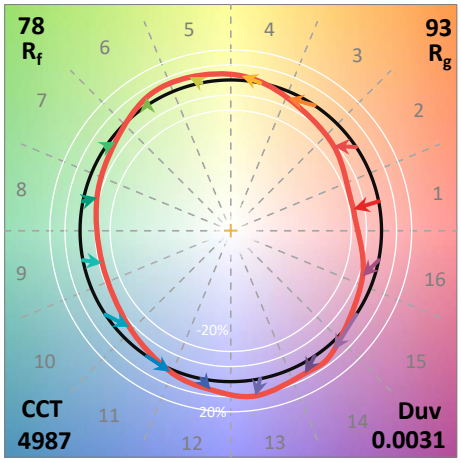
## Spectral Power Distribution Comparison

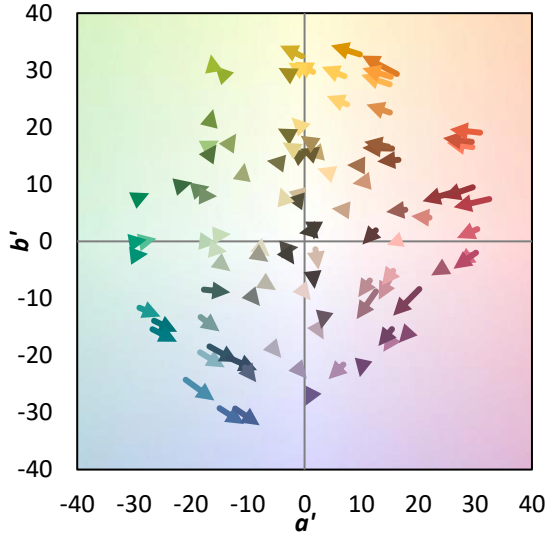



## Color Vector Graphics



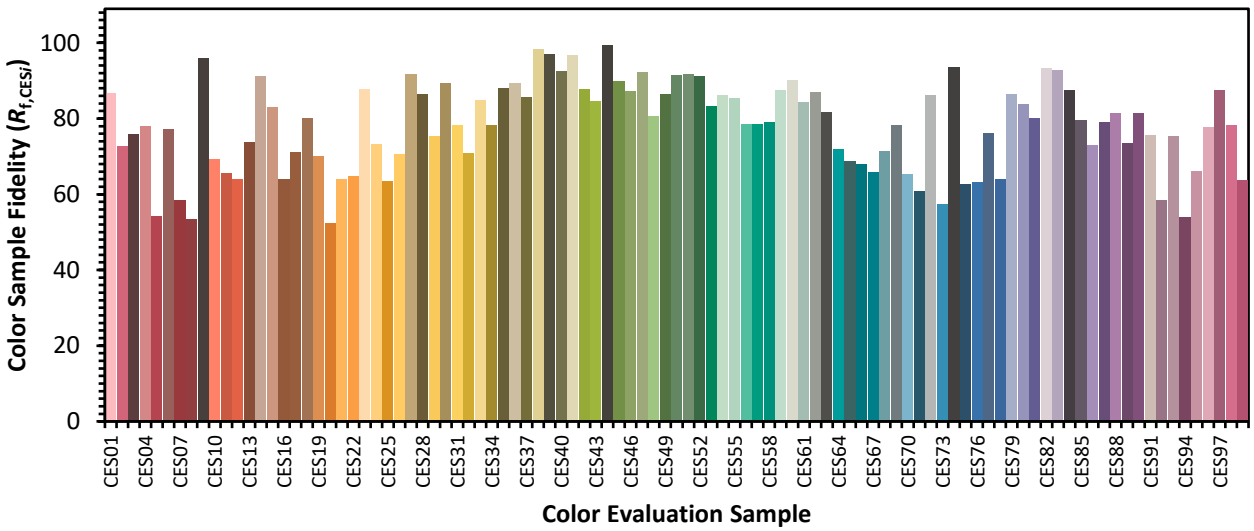



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**Individual Sample Fidelity Index ($R_{f,i}$)**

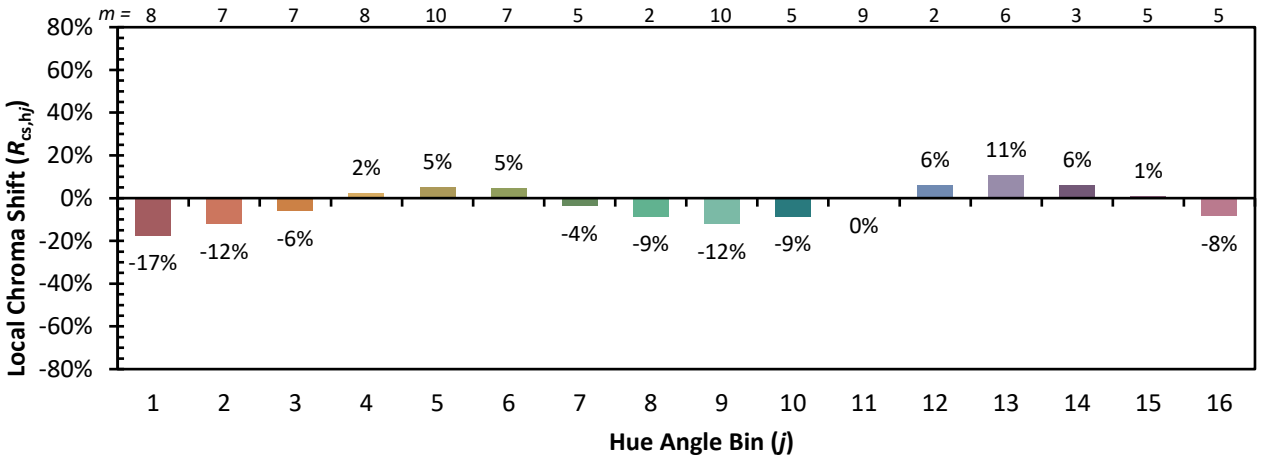
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 71 | CES51 = 92 | CES76 = 63 |
| CES02 = 60 | CES27 = 92 | CES52 = 91 | CES77 = 76 |
| CES03 = 30 | CES28 = 86 | CES53 = 83 | CES78 = 64 |
| CES04 = 69 | CES29 = 75 | CES54 = 86 | CES79 = 86 |
| CES05 = 46 | CES30 = 89 | CES55 = 85 | CES80 = 84 |
| CES06 = 50 | CES31 = 78 | CES56 = 79 | CES81 = 80 |
| CES07 = 39 | CES32 = 71 | CES57 = 78 | CES82 = 93 |
| CES08 = 38 | CES33 = 85 | CES58 = 79 | CES83 = 93 |
| CES09 = 29 | CES34 = 78 | CES59 = 88 | CES84 = 87 |
| CES10 = 73 | CES35 = 88 | CES60 = 90 | CES85 = 80 |
| CES11 = 56 | CES36 = 89 | CES61 = 84 | CES86 = 73 |
| CES12 = 61 | CES37 = 86 | CES62 = 87 | CES87 = 79 |
| CES13 = 41 | CES38 = 98 | CES63 = 82 | CES88 = 81 |
| CES14 = 74 | CES39 = 97 | CES64 = 72 | CES89 = 74 |
| CES15 = 70 | CES40 = 93 | CES65 = 69 | CES90 = 81 |
| CES16 = 46 | CES41 = 97 | CES66 = 68 | CES91 = 76 |
| CES17 = 49 | CES42 = 88 | CES67 = 66 | CES92 = 58 |
| CES18 = 55 | CES43 = 85 | CES68 = 71 | CES93 = 75 |
| CES19 = 71 | CES44 = 99 | CES69 = 78 | CES94 = 54 |
| CES20 = 64 | CES45 = 90 | CES70 = 65 | CES95 = 66 |
| CES21 = 85 | CES46 = 87 | CES71 = 61 | CES96 = 78 |
| CES22 = 77 | CES47 = 92 | CES72 = 86 | CES97 = 88 |
| CES23 = 91 | CES48 = 81 | CES73 = 57 | CES98 = 78 |
| CES24 = 90 | CES49 = 86 | CES74 = 93 | CES99 = 64 |
| CES25 = 71 | CES50 = 91 | CES75 = 63 | |

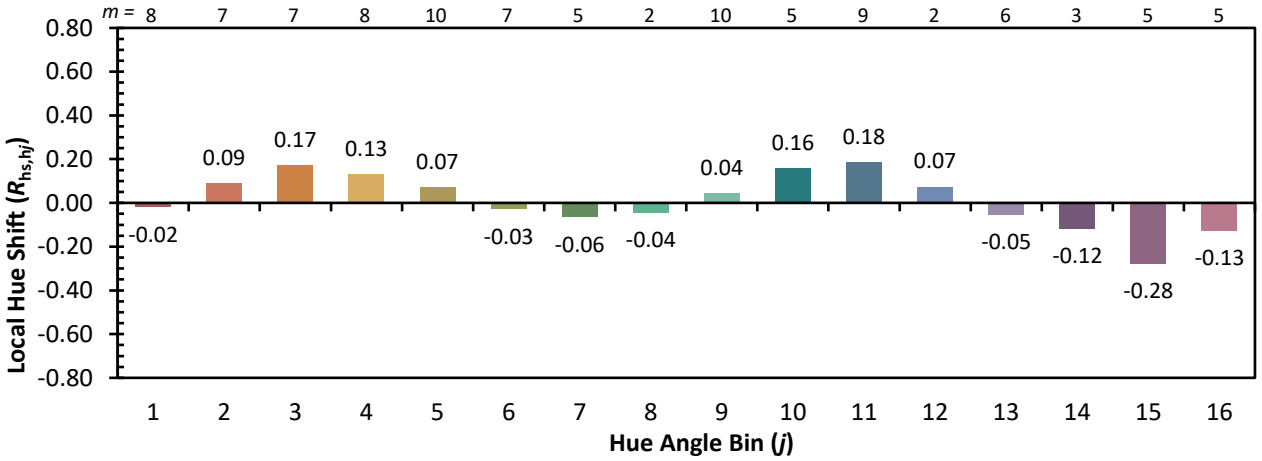


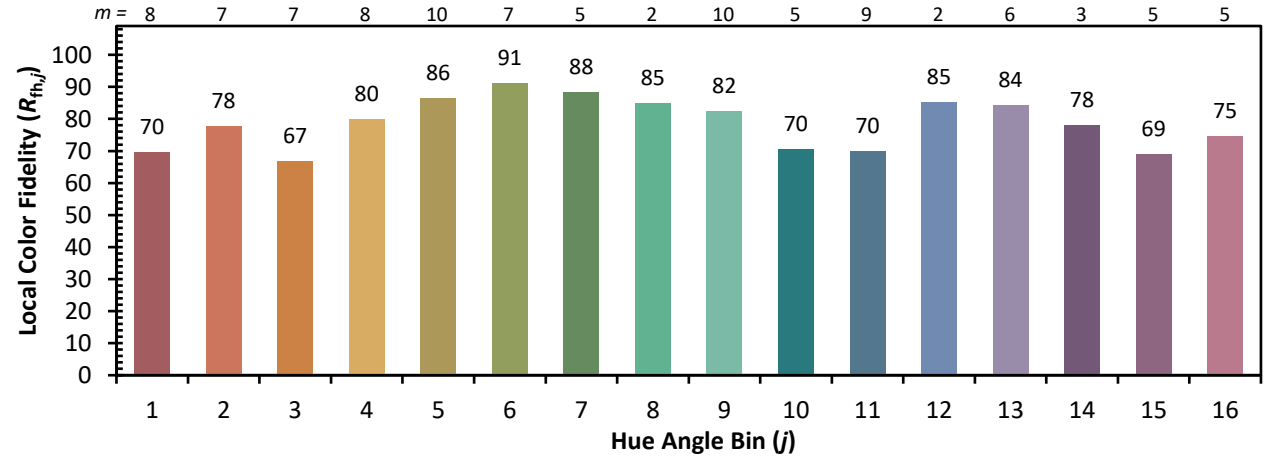
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## Color Rendition by Hue-Angle Bin



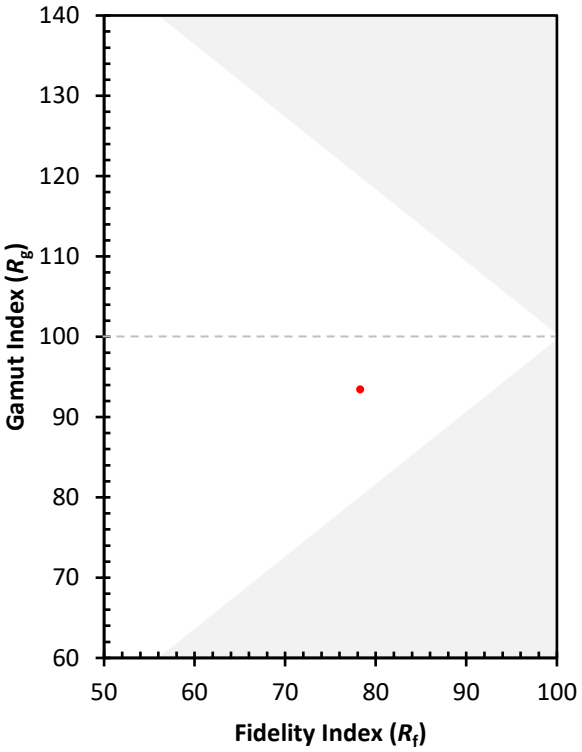



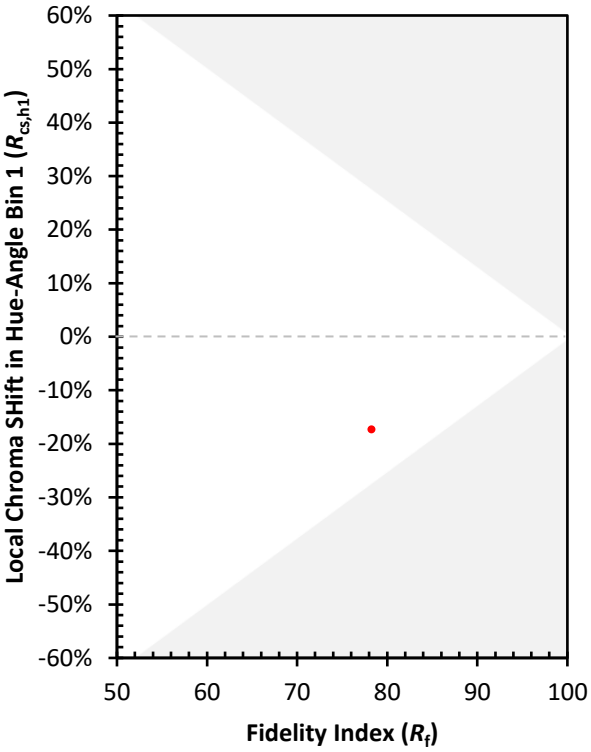



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## Measure Comparisons




(END OF REPORT)