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: P856277

Luminaire Tested: **FFX-CLB-50-750-U-PG**

Issue Date: 07/16/2024

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: | P856277 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 07/16/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | STREETWORKS |
| Catalog Number: | FFX-CLB-50-750-U-PG |
| Description: | FAIRFAX POST TOP FIXTURE w/ PRISMATIC GLOBE |
| Light Source: | (6) 5000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 8271.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 163.8 lumens/watt |
| Luminous Opening: | Vertical Cylinder (Dia: 1.58' x H: 1.5') |
| IES Classification: | Type V - Short |
| BUG Rating: | B3 - U5 - G4 |

| | |
|---|---|
| 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 |

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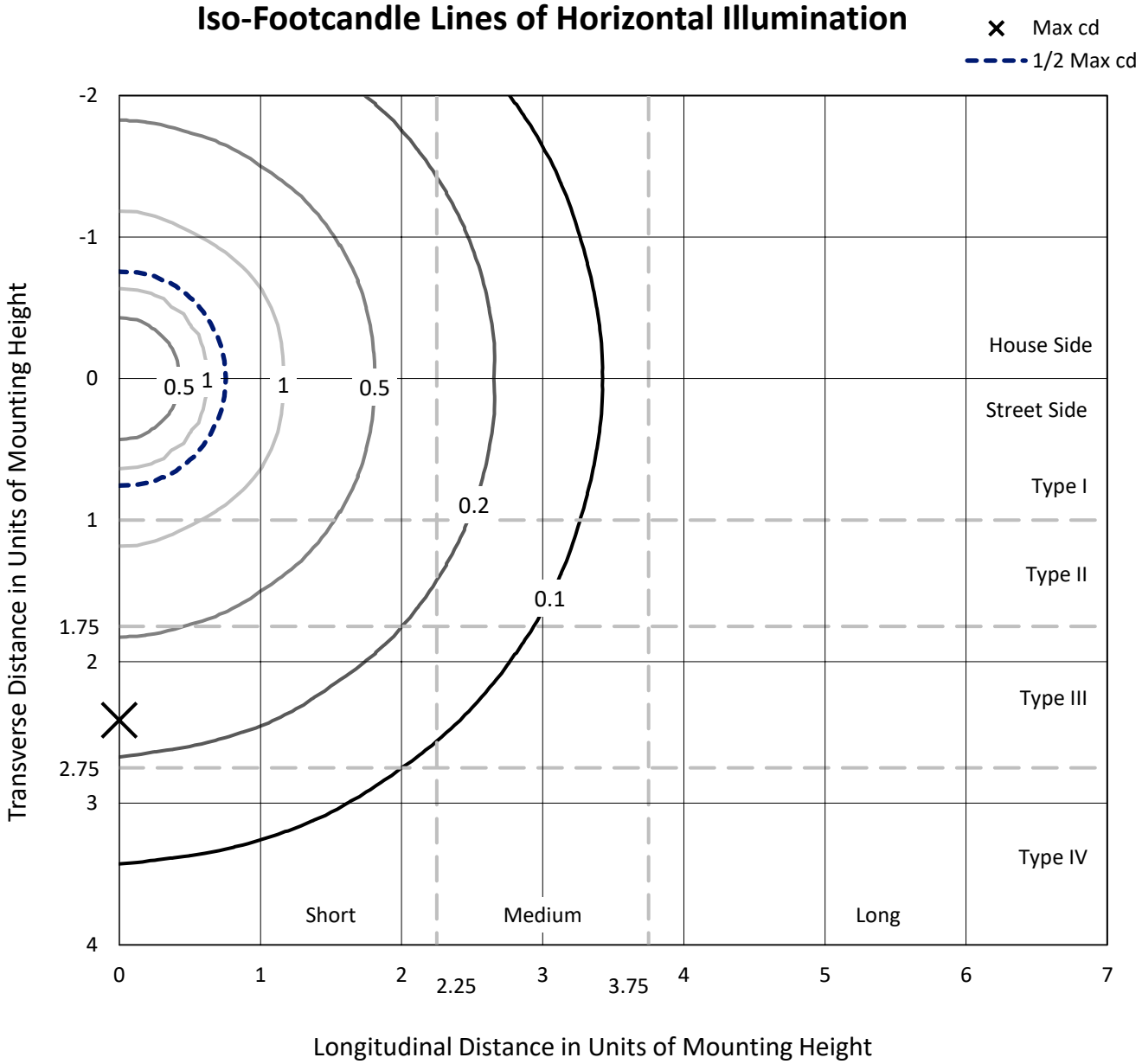
Scaled Data Report

REPORT NUMBER: P856277
CATALOG NUMBER: FFX-CLB-50-750-U-PG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 1.2 fc
Type V - Short - N/A

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Peachtree City, GA 30269

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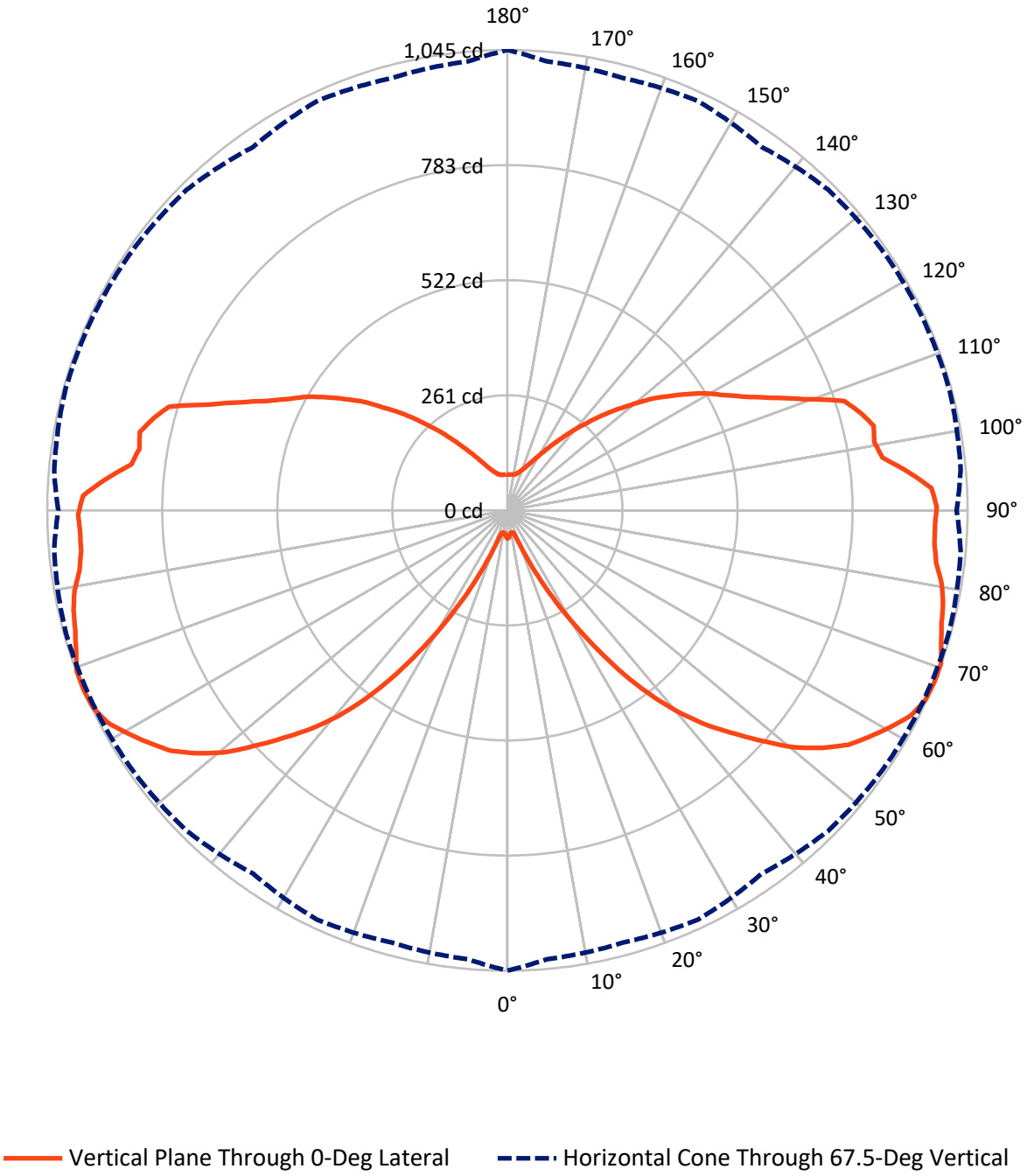
REPORT NUMBER: P856277
CATALOG NUMBER: FFX-CLB-50-750-U-PG

## Luminous Intensity Polar Plot



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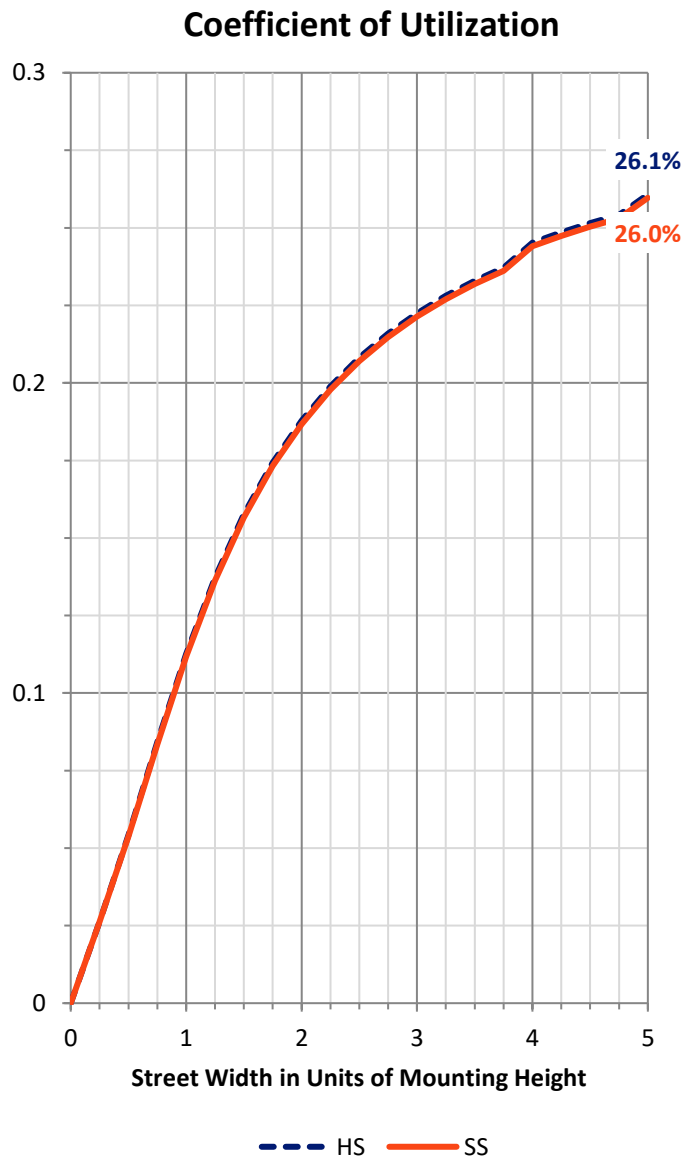
REPORT NUMBER: P856277
CATALOG NUMBER: FFX-CLB-50-750-U-PG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2467.5 | 1668.1 | 4135.6 |
| | % Fixture | 29.8 | 20.2 | 50.0 |
| **Street Side** | Lumens | 2467.5 | 1668.1 | 4135.6 |
| | % Fixture | 29.8 | 20.2 | 50.0 |
| **Total** | Lumens | 4935.0 | 3336.3 | 8271.3 |
| | % Fixture | 59.7 | 40.3 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 5.3 | 0.1 |
| 10°-20° | 17.7 | 0.2 |
| 20°-30° | 88.3 | 1.1 |
| 30°-40° | 290.3 | 3.5 |
| 40°-50° | 561.3 | 6.8 |
| 50°-60° | 830.7 | 10.0 |
| 60°-70° | 1009.9 | 12.2 |
| 70°-80° | 1066.2 | 12.9 |
| 80°-90° | 1065.3 | 12.9 |
| 90°-100° | 996.6 | 12.0 |
| 100°-110° | 886.6 | 10.7 |
| 110°-120° | 606.4 | 7.3 |
| 120°-130° | 407.3 | 4.9 |
| 130°-140° | 236.5 | 2.9 |
| 140°-150° | 116.5 | 1.4 |
| 150°-160° | 53.8 | 0.7 |
| 160°-170° | 24.8 | 0.3 |
| 170°-180° | 7.8 | 0.1 |
| 0°-90° | 4935.0 | 59.7 |
| 0°-180° | 8271.3 | 100.0 |



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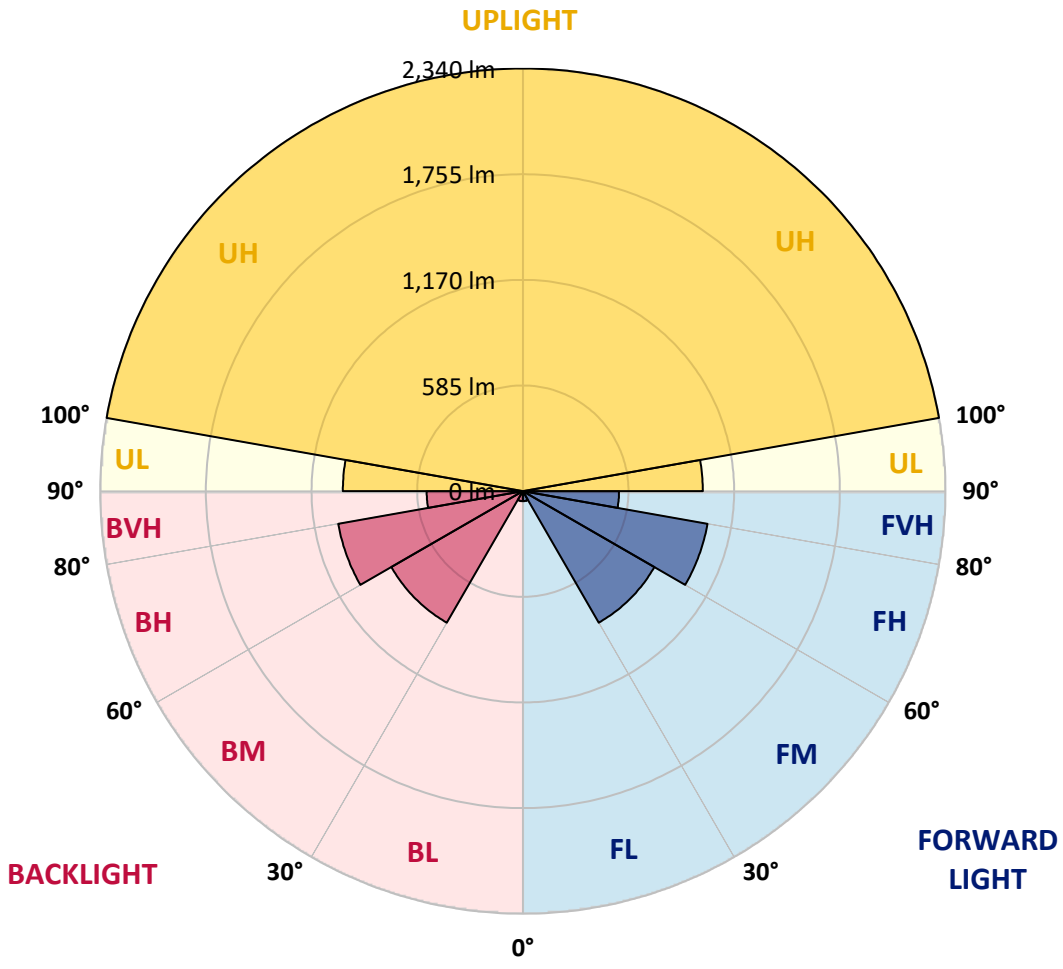
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 55.7 | 0.7 | | | |
| FM | (30°-60°) | 841.1 | 10.2 | | | |
| FH | (60°-80°) | 1038.0 | 12.5 | | | G1/1800 |
| FVH | (80°-90°) | 532.7 | 6.4 | | | G4/750 |
| BL | (0°-30°) | 55.7 | 0.7 | B0/110 | | |
| BM | (30°-60°) | 841.1 | 10.2 | B1/1000 | | |
| BH | (60°-80°) | 1038.0 | 12.5 | B3/2500 | | G1/1800 |
| BVH | (80°-90°) | 532.7 | 6.4 | | | G4/750 |
| UL | (90°-100°) | 996.6 | 12.0 | | U4/1000 | |
| UH | (100°-180°) | 2339.7 | 28.3 | | U5 | |

**BUG Rating: B3-U5-G4**
Type V Short



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Scaled Data Report

REPORT NUMBER: P856277
CATALOG NUMBER: FFX-CLB-50-750-U-PG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 | 64.2 |
| 2.5° | 61.6 | 61.0 | 60.5 | 60.0 | 60.5 | 61.0 | 62.1 | 62.6 | 62.6 | 62.6 | 62.6 |
| 5° | 55.8 | 56.3 | 56.9 | 57.4 | 57.4 | 57.4 | 57.4 | 57.9 | 58.4 | 58.4 | 58.4 |
| 7.5° | 52.7 | 52.7 | 53.2 | 54.8 | 55.3 | 54.8 | 54.8 | 55.3 | 53.7 | 52.2 | 51.7 |
| 10° | 51.1 | 51.1 | 51.7 | 52.2 | 52.7 | 53.7 | 54.3 | 54.3 | 54.3 | 54.3 | 53.7 |
| 12.5° | 51.7 | 51.1 | 51.7 | 52.2 | 53.2 | 53.7 | 52.7 | 52.7 | 53.7 | 54.8 | 55.3 |
| 15° | 54.3 | 53.7 | 53.7 | 54.8 | 55.3 | 55.3 | 54.3 | 54.3 | 54.8 | 55.8 | 55.8 |
| 17.5° | 65.7 | 64.7 | 64.2 | 64.7 | 64.2 | 64.7 | 64.2 | 65.2 | 65.2 | 64.7 | 64.2 |
| 20° | 89.7 | 88.7 | 87.1 | 86.6 | 87.1 | 88.7 | 89.2 | 90.8 | 89.2 | 88.7 | 86.6 |
| 22.5° | 127.3 | 125.7 | 124.7 | 124.7 | 126.3 | 127.3 | 126.8 | 128.9 | 127.8 | 127.3 | 125.2 |
| 25° | 175.3 | 174.3 | 174.8 | 177.4 | 180.0 | 178.4 | 174.3 | 177.4 | 177.4 | 176.9 | 176.4 |
| 27.5° | 235.3 | 231.7 | 233.2 | 240.0 | 242.1 | 237.9 | 233.2 | 236.9 | 238.4 | 239.0 | 239.0 |
| 30° | 303.7 | 301.0 | 300.5 | 307.8 | 310.4 | 306.8 | 303.7 | 307.8 | 307.8 | 309.4 | 309.4 |
| 32.5° | 377.7 | 376.2 | 373.6 | 377.7 | 381.9 | 380.9 | 380.9 | 384.0 | 383.0 | 384.5 | 385.0 |
| 35° | 459.1 | 456.0 | 450.8 | 451.3 | 456.0 | 456.5 | 460.2 | 462.3 | 461.2 | 460.7 | 460.7 |
| 37.5° | 535.8 | 531.7 | 527.0 | 524.4 | 530.1 | 529.6 | 537.9 | 537.9 | 535.8 | 536.4 | 536.4 |
| 40° | 605.2 | 602.6 | 599.0 | 591.7 | 602.6 | 600.5 | 610.4 | 610.4 | 604.7 | 606.3 | 605.2 |
| 42.5° | 667.3 | 667.3 | 663.1 | 652.2 | 663.7 | 661.6 | 674.6 | 674.6 | 666.8 | 666.3 | 664.7 |
| 45° | 723.1 | 725.7 | 723.7 | 713.7 | 717.9 | 719.5 | 732.0 | 729.4 | 723.1 | 723.1 | 720.5 |
| 47.5° | 783.1 | 785.7 | 778.4 | 768.0 | 772.7 | 775.3 | 786.8 | 785.7 | 782.1 | 777.4 | 777.4 |
| 50° | 845.8 | 846.3 | 831.7 | 819.1 | 823.3 | 836.9 | 845.2 | 847.3 | 839.5 | 828.5 | 828.0 |
| 52.5° | 895.3 | 898.4 | 884.4 | 870.8 | 873.9 | 889.6 | 899.0 | 899.5 | 889.6 | 873.9 | 878.6 |
| 55° | 939.1 | 942.3 | 928.2 | 916.2 | 922.4 | 930.8 | 941.8 | 935.5 | 936.0 | 919.3 | 927.1 |
| 57.5° | 968.9 | 979.3 | 955.8 | 953.2 | 959.0 | 968.9 | 973.6 | 972.0 | 975.1 | 959.5 | 962.1 |
| 60° | 998.6 | 1003.3 | 983.5 | 987.1 | 980.4 | 998.1 | 1001.8 | 1005.4 | 997.1 | 986.1 | 986.1 |
| 62.5° | 1026.8 | 1015.3 | 1001.2 | 1010.1 | 991.8 | 1014.3 | 1018.4 | 1022.6 | 1013.8 | 1003.3 | 1005.4 |
| 65° | 1041.4 | 1020.5 | 1008.5 | 1019.5 | 1001.8 | 1022.1 | 1028.9 | 1030.4 | 1028.9 | 1019.0 | 1014.3 |
| 67.5° | 1044.5 | 1022.6 | 1015.3 | 1024.2 | 1006.4 | 1028.9 | 1035.1 | 1038.3 | 1039.8 | 1032.5 | 1019.5 |
| 70° | 1043.5 | 1020.0 | 1013.8 | 1022.1 | 1010.6 | 1031.5 | 1032.0 | 1036.7 | 1038.8 | 1041.9 | 1027.3 |
| 72.5° | 1029.4 | 1009.1 | 1007.5 | 1014.8 | 1004.4 | 1017.9 | 1018.4 | 1024.2 | 1021.1 | 1031.0 | 1023.7 |
| 75° | 1017.9 | 1004.4 | 1007.0 | 1005.4 | 995.0 | 1002.8 | 1004.9 | 1011.7 | 1000.2 | 1009.6 | 1015.8 |
| 77.5° | 1010.6 | 1003.3 | 1009.6 | 1001.2 | 990.3 | 995.5 | 998.6 | 1006.4 | 989.2 | 997.1 | 1015.3 |
| 80° | 999.1 | 997.1 | 1004.9 | 992.4 | 983.0 | 987.7 | 992.9 | 999.7 | 980.9 | 986.1 | 1012.2 |
| 82.5° | 980.4 | 981.9 | 989.2 | 974.6 | 968.4 | 973.6 | 979.8 | 990.3 | 971.0 | 974.1 | 1001.8 |
| 85° | 972.0 | 978.8 | 982.4 | 967.8 | 960.5 | 963.7 | 970.4 | 981.4 | 961.1 | 965.8 | 993.9 |
| 87.5° | 971.0 | 979.3 | 981.9 | 969.4 | 963.1 | 967.8 | 971.0 | 986.6 | 964.7 | 970.4 | 999.1 |
| 90° | 974.1 | 977.2 | 978.8 | 967.8 | 962.6 | 969.9 | 970.4 | 989.8 | 967.8 | 969.4 | 995.0 |
| 92.5° | 963.7 | 964.2 | 967.3 | 957.4 | 956.9 | 962.1 | 961.1 | 977.2 | 953.2 | 949.6 | 971.5 |
| 95° | 913.1 | 908.9 | 915.7 | 910.4 | 921.4 | 929.2 | 938.1 | 958.4 | 946.4 | 949.6 | 968.4 |
| 97.5° | 859.3 | 860.4 | 862.4 | 854.1 | 852.5 | 855.7 | 859.3 | 869.8 | 866.1 | 869.2 | 887.0 |
| 100° | 846.8 | 850.4 | 849.9 | 845.8 | 828.5 | 824.9 | 817.1 | 806.1 | 791.5 | 793.6 | 796.2 |
| 102.5° | 853.1 | 863.0 | 864.5 | 870.3 | 870.3 | 867.7 | 873.4 | 868.7 | 871.3 | 886.4 | 878.1 |
| 105° | 830.6 | 842.1 | 849.4 | 855.7 | 867.7 | 877.6 | 904.2 | 920.4 | 933.4 | 951.7 | 949.1 |
| 107.5° | 803.5 | 809.2 | 814.4 | 814.4 | 811.3 | 809.8 | 824.4 | 827.0 | 823.3 | 828.0 | 828.5 |
| 110° | 719.0 | 718.4 | 723.7 | 721.6 | 723.1 | 714.8 | 719.0 | 733.1 | 729.9 | 739.3 | 740.9 |

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

Scaled Data Report

REPORT NUMBER: P856277
CATALOG NUMBER: FFX-CLB-50-750-U-PG

**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | *653.2* | 653.2 | 656.9 | 651.7 | 652.2 | 645.4 | 648.0 | 657.4 | 657.9 | 665.7 | 669.9 |
| 115° | *597.9* | 596.9 | 602.1 | 597.9 | 593.2 | 591.7 | 594.3 | 600.0 | 601.6 | 606.8 | 615.1 |
| 117.5° | *556.7* | 551.5 | 555.7 | 556.2 | 558.3 | 554.1 | 560.4 | 564.0 | 566.1 | 570.3 | 577.1 |
| 120° | *522.8* | 517.6 | 519.1 | 524.4 | 530.6 | 521.7 | 528.5 | 531.7 | 533.2 | 534.8 | 537.9 |
| 122.5° | *484.2* | 480.5 | 479.0 | 489.4 | 493.1 | 485.2 | 488.9 | 493.6 | 496.2 | 498.8 | 501.4 |
| 125° | *445.0* | 441.9 | 440.4 | 449.7 | 453.4 | 447.1 | 452.4 | 459.1 | 458.1 | 463.8 | 458.6 |
| 127.5° | *409.6* | 408.5 | 406.4 | 411.1 | 413.7 | 413.2 | 417.9 | 426.3 | 422.6 | 427.8 | 422.1 |
| 130° | *367.3* | 371.5 | 368.4 | 374.1 | 374.6 | 378.8 | 380.4 | 388.2 | 384.5 | 385.6 | 381.9 |
| 132.5° | *332.9* | 334.4 | 332.9 | 335.0 | 336.5 | 336.5 | 340.7 | 349.0 | 343.3 | 342.8 | 339.7 |
| 135° | *297.9* | 298.4 | 296.4 | 299.5 | 300.5 | 297.9 | 302.1 | 308.4 | 305.2 | 303.7 | 303.7 |
| 137.5° | *263.5* | 263.0 | 263.5 | 264.5 | 265.6 | 265.0 | 267.1 | 271.8 | 270.8 | 268.7 | 271.3 |
| 140° | *234.3* | 232.7 | 233.2 | 233.7 | 233.2 | 233.2 | 235.3 | 239.5 | 239.5 | 236.9 | 239.5 |
| 142.5° | *205.0* | 204.5 | 204.5 | 204.5 | 204.5 | 205.6 | 207.7 | 208.7 | 209.7 | 207.7 | 207.1 |
| 145° | *180.5* | 180.0 | 179.5 | 179.5 | 179.5 | 180.0 | 182.1 | 181.6 | 183.7 | 181.6 | 180.0 |
| 147.5° | *158.6* | 159.1 | 158.1 | 157.6 | 157.0 | 158.6 | 159.1 | 160.2 | 161.2 | 160.2 | 158.6 |
| 150° | *140.9* | 140.3 | 140.3 | 139.3 | 139.3 | 140.9 | 140.3 | 141.4 | 142.4 | 141.9 | 141.4 |
| 152.5° | *125.2* | 125.2 | 125.2 | 124.2 | 124.7 | 125.7 | 125.7 | 125.7 | 126.8 | 126.8 | 126.3 |
| 155° | *112.7* | 112.7 | 112.7 | 112.2 | 112.2 | 113.2 | 113.2 | 113.2 | 113.7 | 113.7 | 113.7 |
| 157.5° | *103.3* | 103.3 | 102.8 | 102.8 | 102.8 | 103.3 | 102.8 | 102.8 | 103.3 | 103.3 | 103.3 |
| 160° | *96.0* | 96.0 | 95.5 | 95.5 | 95.0 | 95.5 | 95.0 | 95.0 | 95.5 | 95.5 | 95.5 |
| 162.5° | *90.3* | 90.3 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.2 | 89.2 | 89.7 | 89.2 |
| 165° | *86.1* | 86.1 | 86.1 | 86.1 | 86.1 | 86.1 | 86.1 | 85.6 | 85.6 | 85.6 | 85.6 |
| 167.5° | *83.5* | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 |
| 170° | *81.9* | 81.9 | 81.9 | 82.4 | 82.4 | 82.4 | 81.9 | 81.9 | 82.4 | 82.4 | 81.9 |
| 172.5° | *81.4* | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 |
| 175° | *81.4* | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 80.9 | 81.4 | 81.4 | 81.4 | 81.4 |
| 177.5° | *81.4* | 80.9 | 80.9 | 81.4 | 81.4 | 80.9 | 80.9 | 80.9 | 80.9 | 80.9 | 80.9 |
| 180° | *81.4* | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 |

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: SP1-2406-133-5

Test Date: 07/12/2024

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: v7.03

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

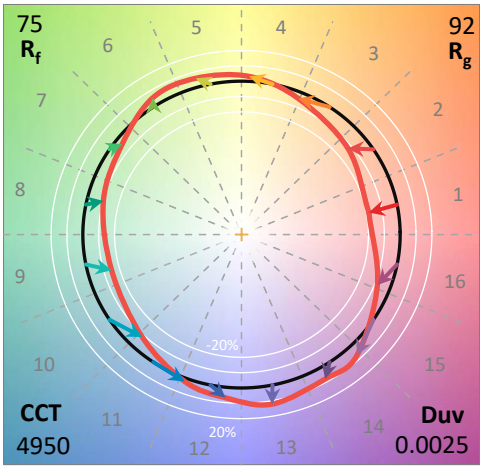
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2406-133-5 |
| 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-100-750-U-FR-T5** |
| Description: | FAIRFAX ACORN W/ FAIRFAX REFRACTOR 100W T5 |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 4950 |
| CIE u': | 0.2102 |
| CIE v': | 0.4882 |
| Duv: | 0.0025 |
| CIE x: | 0.3471 |
| CIE y: | 0.3583 |
| CIE z: | 0.2946 |
| Peak Wavelength (nm): | 452 |
| Dominant Wavelength (nm): | 571 |
| Purity: | 11.64963 |
| Rf: | 74.8 |
| Rg: | 92.4 |

| | |
|---|---|
| CRI (Ra): | 73.0 |
| R1: | 69.1 |
| R2: | 80.1 |
| R3: | 87.3 |
| R4: | 70.6 |
| R5: | 69.4 |
| R6: | 71.2 |
| R7: | 82.5 |
| R8: | 53.6 |
| R9: | -35.4 |
| R10: | 51.9 |
| R11: | 66.1 |
| R12: | 40.1 |
| R13: | 71.5 |
| R14: | 93.0 |
| R15: | 62.2 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 0.803355M |
| Operation Time: | 1H |
| Sphere Temperature (°C): | 24.7 |

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

REPORT NUMBER: SP1-2406-133-5

| 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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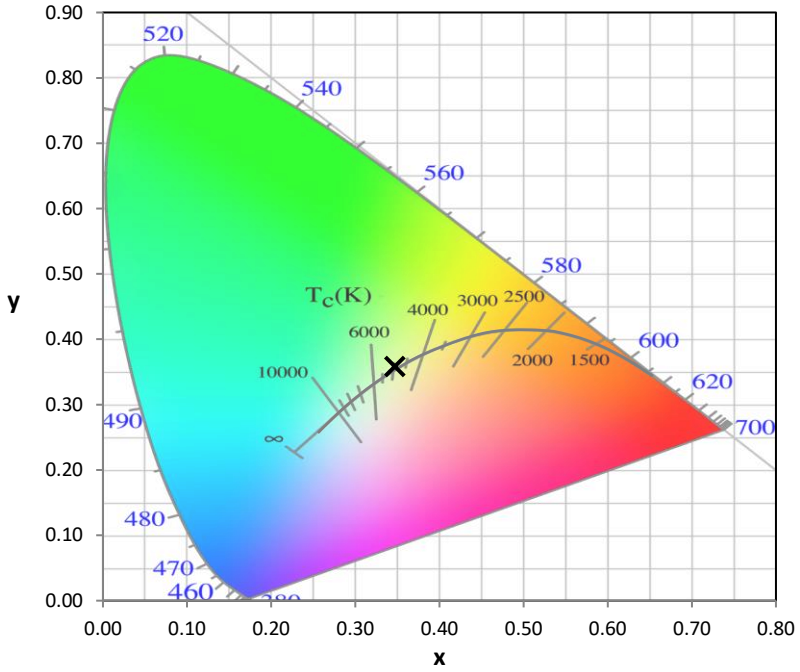
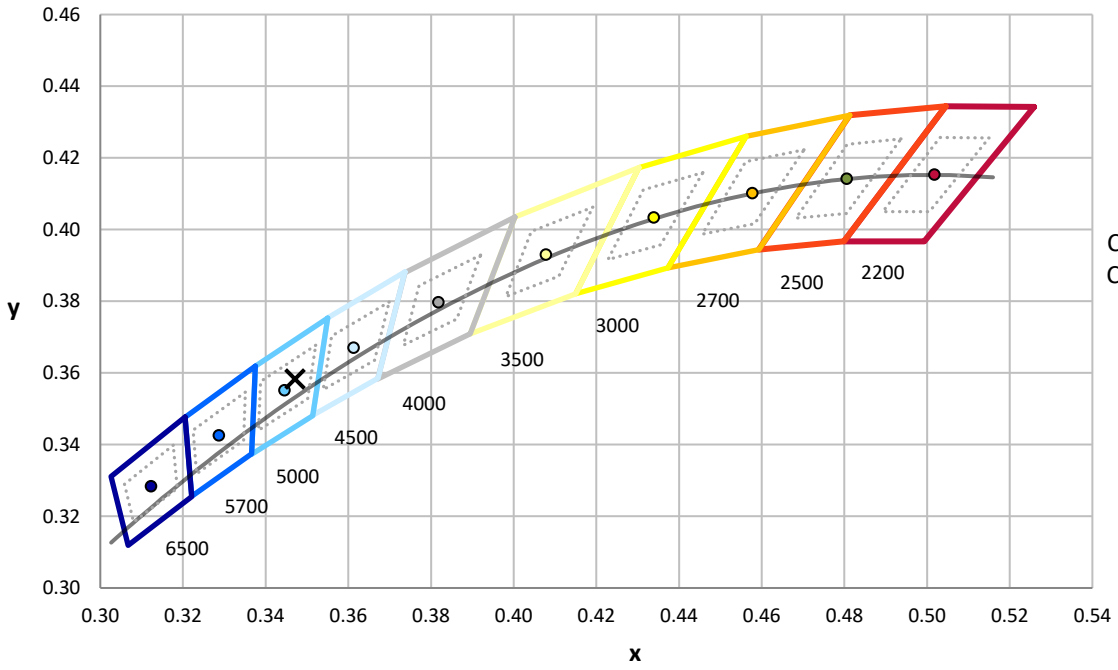
REPORT NUMBER: SP1-2406-133-5

## CIE 1931 Chromaticity Diagram




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




CCT = 4950K
CIE x = 0.3471
CIE y = 0.3583
Duv = 0.0025

Point lies inside the ANSI 5000K 4-step quadrangle

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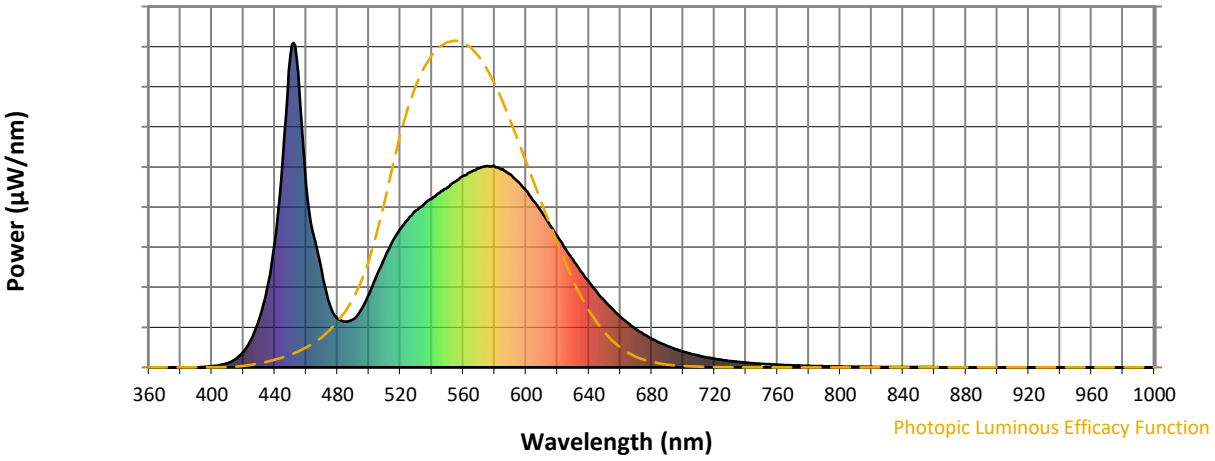
## Photopic Flux vs. Wavelength




## 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 | 148 | NR | 620 | 403 | NR | 750 | 11 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 178 | NR | 625 | 366 | NR | 755 | 9 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 226 | NR | 630 | 331 | NR | 760 | 8 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 283 | NR | 635 | 295 | NR | 765 | 7 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 338 | NR | 640 | 263 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 387 | NR | 645 | 232 | NR | 775 | 5 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 428 | NR | 650 | 205 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 457 | NR | 655 | 179 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 484 | NR | 660 | 156 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 503 | NR | 665 | 136 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 520 | NR | 670 | 118 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 538 | NR | 675 | 102 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 48 | NR | 550 | 555 | NR | 680 | 89 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 87 | NR | 555 | 573 | NR | 685 | 76 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 590 | NR | 690 | 66 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 603 | NR | 695 | 56 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 384 | NR | 570 | 614 | NR | 700 | 49 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 638 | NR | 575 | 621 | NR | 705 | 42 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 960 | NR | 580 | 619 | NR | 710 | 36 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 902 | NR | 585 | 611 | NR | 715 | 31 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 564 | NR | 590 | 594 | NR | 720 | 27 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 402 | NR | 595 | 572 | NR | 725 | 23 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 293 | NR | 600 | 546 | NR | 730 | 20 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 194 | NR | 605 | 511 | NR | 735 | 17 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 150 | NR | 610 | 478 | NR | 740 | 14 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 141 | NR | 615 | 440 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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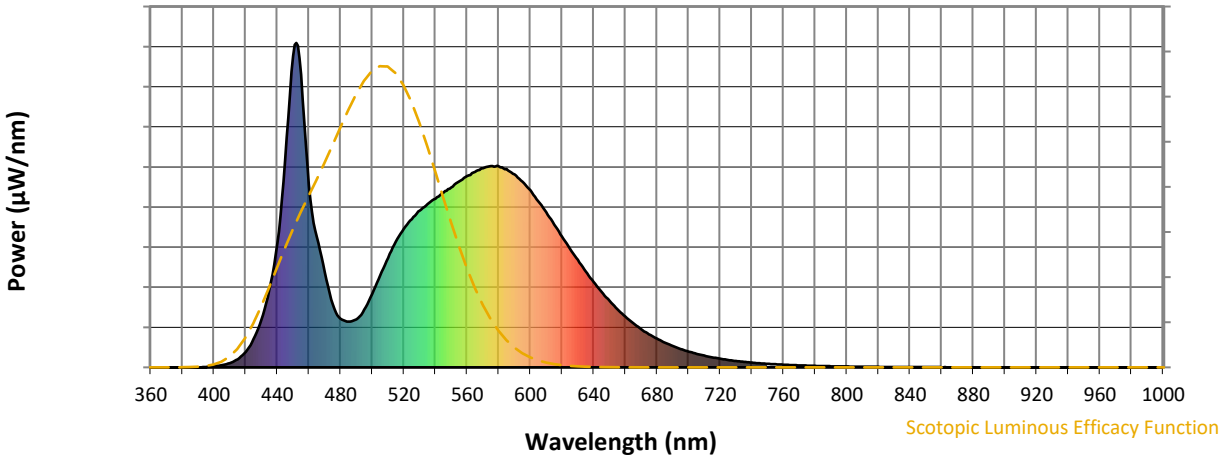
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.8**

| 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 | 148 | NR | 620 | 403 | NR | 750 | 11 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 178 | NR | 625 | 366 | NR | 755 | 9 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 226 | NR | 630 | 331 | NR | 760 | 8 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 283 | NR | 635 | 295 | NR | 765 | 7 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 338 | NR | 640 | 263 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 387 | NR | 645 | 232 | NR | 775 | 5 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 428 | NR | 650 | 205 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 457 | NR | 655 | 179 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 484 | NR | 660 | 156 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 503 | NR | 665 | 136 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 520 | NR | 670 | 118 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 538 | NR | 675 | 102 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 48 | NR | 550 | 555 | NR | 680 | 89 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 87 | NR | 555 | 573 | NR | 685 | 76 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 590 | NR | 690 | 66 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 603 | NR | 695 | 56 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 384 | NR | 570 | 614 | NR | 700 | 49 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 638 | NR | 575 | 621 | NR | 705 | 42 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 960 | NR | 580 | 619 | NR | 710 | 36 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 902 | NR | 585 | 611 | NR | 715 | 31 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 564 | NR | 590 | 594 | NR | 720 | 27 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 402 | NR | 595 | 572 | NR | 725 | 23 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 293 | NR | 600 | 546 | NR | 730 | 20 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 194 | NR | 605 | 511 | NR | 735 | 17 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 150 | NR | 610 | 478 | NR | 740 | 14 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 141 | NR | 615 | 440 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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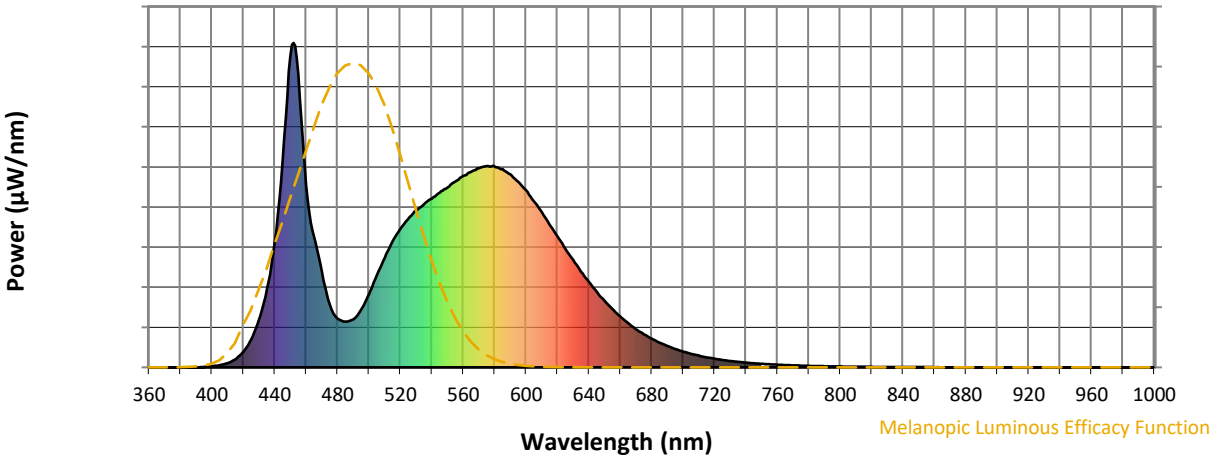
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.74**

| 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 | 148 | NR | 620 | 403 | NR | 750 | 11 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 178 | NR | 625 | 366 | NR | 755 | 9 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 226 | NR | 630 | 331 | NR | 760 | 8 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 283 | NR | 635 | 295 | NR | 765 | 7 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 338 | NR | 640 | 263 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 387 | NR | 645 | 232 | NR | 775 | 5 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 428 | NR | 650 | 205 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 457 | NR | 655 | 179 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 484 | NR | 660 | 156 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 503 | NR | 665 | 136 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 520 | NR | 670 | 118 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 538 | NR | 675 | 102 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 48 | NR | 550 | 555 | NR | 680 | 89 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 87 | NR | 555 | 573 | NR | 685 | 76 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 590 | NR | 690 | 66 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 603 | NR | 695 | 56 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 384 | NR | 570 | 614 | NR | 700 | 49 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 638 | NR | 575 | 621 | NR | 705 | 42 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 960 | NR | 580 | 619 | NR | 710 | 36 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 902 | NR | 585 | 611 | NR | 715 | 31 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 564 | NR | 590 | 594 | NR | 720 | 27 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 402 | NR | 595 | 572 | NR | 725 | 23 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 293 | NR | 600 | 546 | NR | 730 | 20 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 194 | NR | 605 | 511 | NR | 735 | 17 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 150 | NR | 610 | 478 | NR | 740 | 14 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 141 | NR | 615 | 440 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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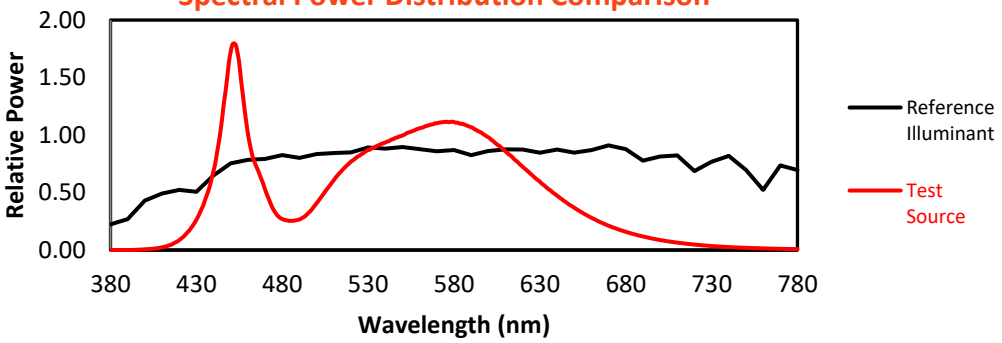
# TM-30-18

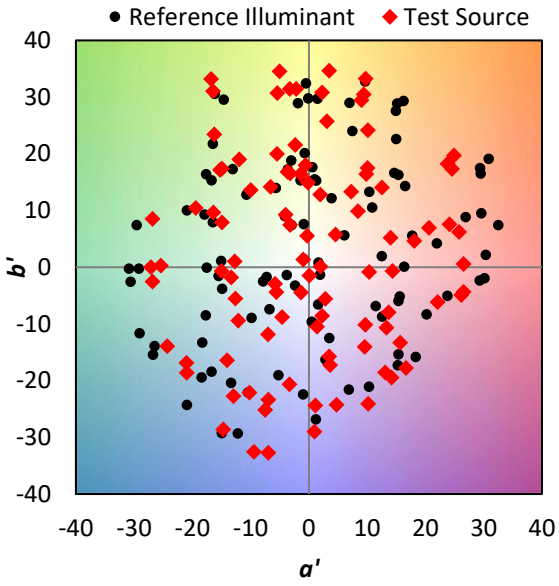
## Summary

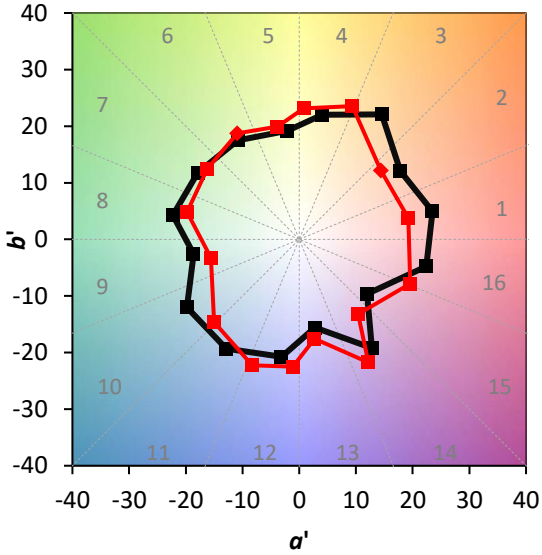
$R_f$ = 74.8
$R_g$ = 92.4
CIE $R_a$ = 73.0
$R_9$ = -35.4

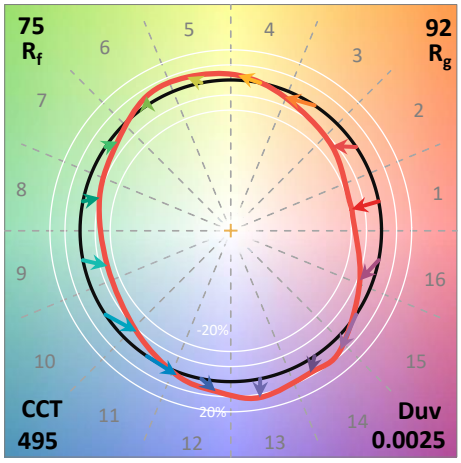
## Spectral Power Distribution Comparison

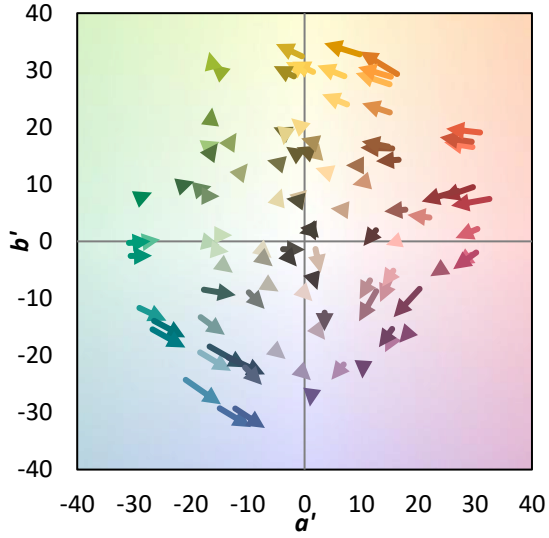



## Color Vector Graphics



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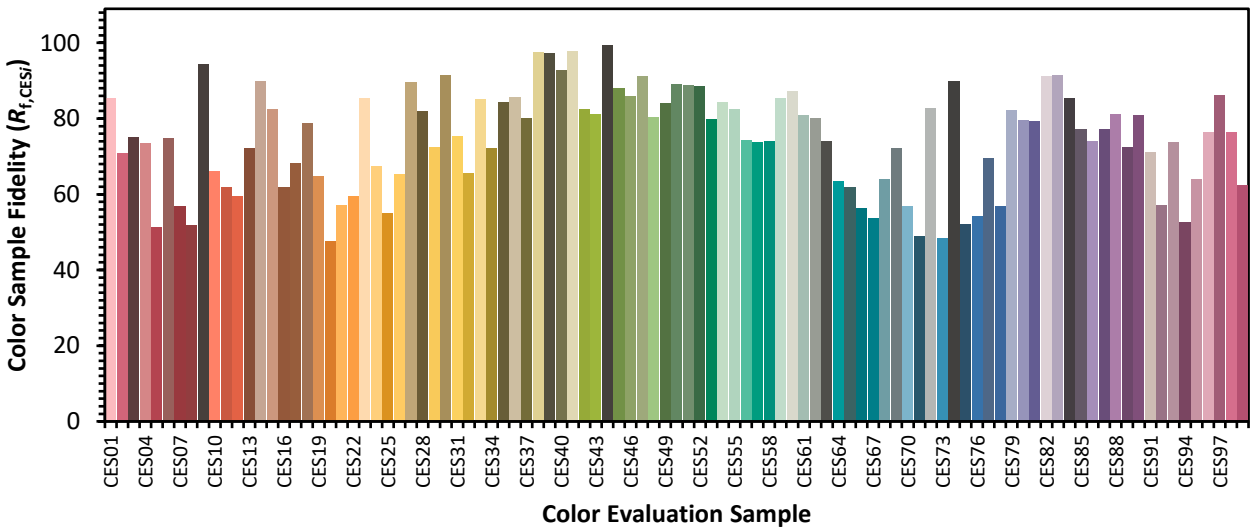
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 65 | CES51 = 89 | CES76 = 54 |
| CES02 = 60 | CES27 = 90 | CES52 = 88 | CES77 = 69 |
| CES03 = 30 | CES28 = 82 | CES53 = 80 | CES78 = 57 |
| CES04 = 69 | CES29 = 72 | CES54 = 84 | CES79 = 82 |
| CES05 = 46 | CES30 = 91 | CES55 = 82 | CES80 = 79 |
| CES06 = 50 | CES31 = 75 | CES56 = 74 | CES81 = 79 |
| CES07 = 39 | CES32 = 66 | CES57 = 74 | CES82 = 91 |
| CES08 = 38 | CES33 = 85 | CES58 = 74 | CES83 = 91 |
| CES09 = 29 | CES34 = 72 | CES59 = 85 | CES84 = 85 |
| CES10 = 73 | CES35 = 84 | CES60 = 87 | CES85 = 77 |
| CES11 = 56 | CES36 = 86 | CES61 = 81 | CES86 = 74 |
| CES12 = 62 | CES37 = 80 | CES62 = 80 | CES87 = 77 |
| CES13 = 41 | CES38 = 98 | CES63 = 74 | CES88 = 81 |
| CES14 = 74 | CES39 = 97 | CES64 = 63 | CES89 = 72 |
| CES15 = 70 | CES40 = 93 | CES65 = 62 | CES90 = 81 |
| CES16 = 46 | CES41 = 98 | CES66 = 56 | CES91 = 71 |
| CES17 = 49 | CES42 = 83 | CES67 = 54 | CES92 = 57 |
| CES18 = 55 | CES43 = 81 | CES68 = 64 | CES93 = 74 |
| CES19 = 71 | CES44 = 99 | CES69 = 72 | CES94 = 53 |
| CES20 = 64 | CES45 = 88 | CES70 = 57 | CES95 = 64 |
| CES21 = 85 | CES46 = 86 | CES71 = 49 | CES96 = 76 |
| CES22 = 77 | CES47 = 91 | CES72 = 83 | CES97 = 86 |
| CES23 = 91 | CES48 = 80 | CES73 = 48 | CES98 = 77 |
| CES24 = 90 | CES49 = 84 | CES74 = 90 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 52 | |



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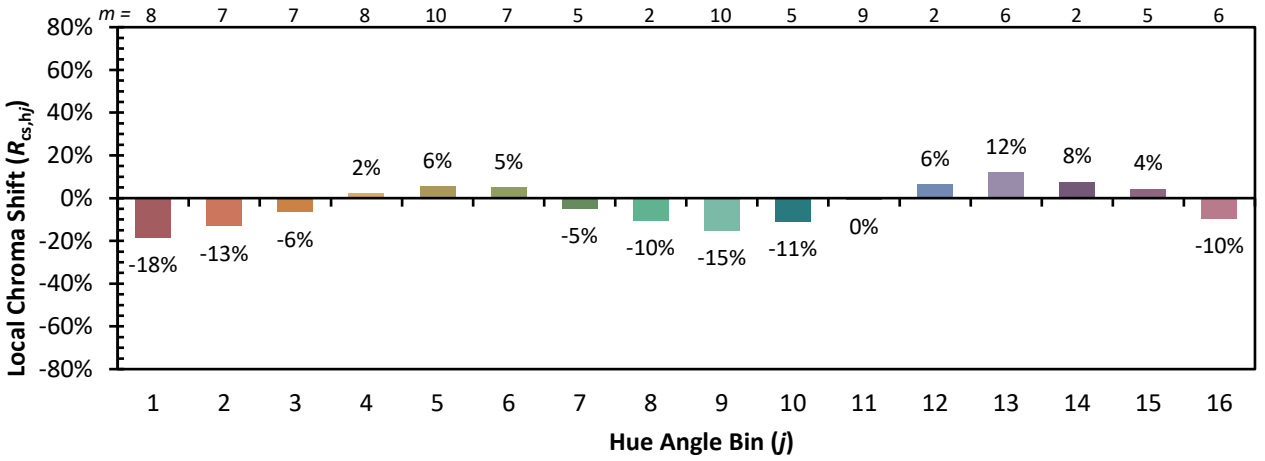
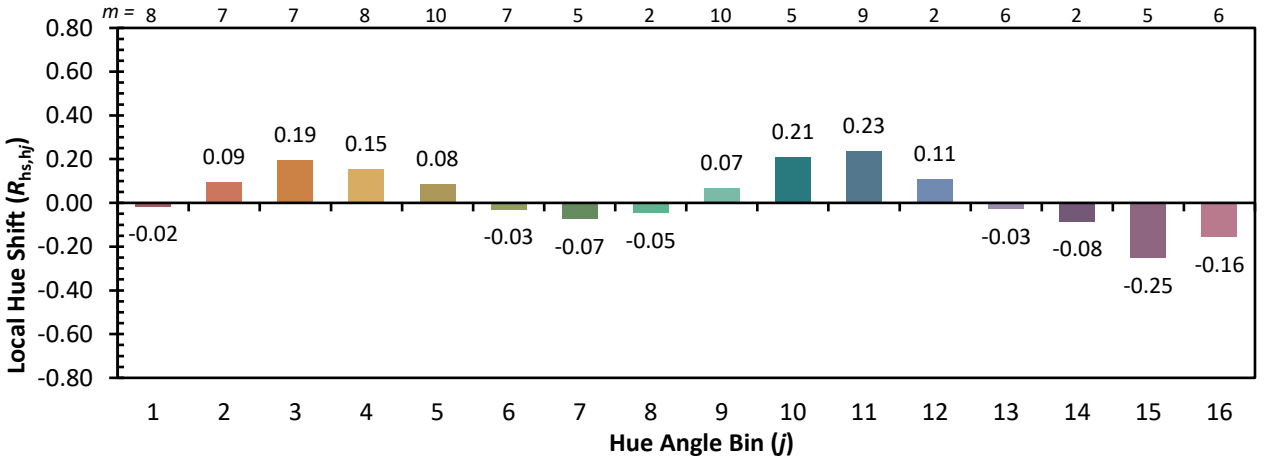
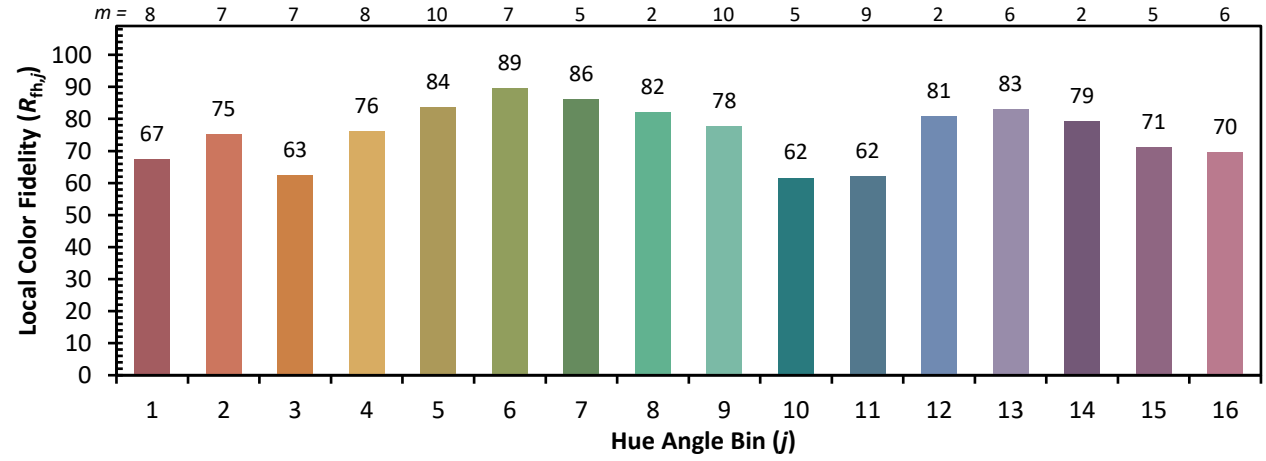
## TM-30-18

### Color Rendition by Hue-Angle Bin



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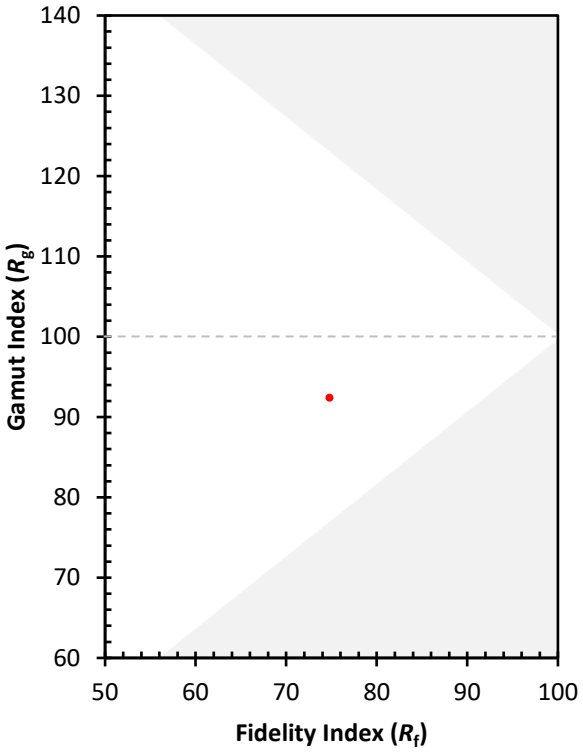
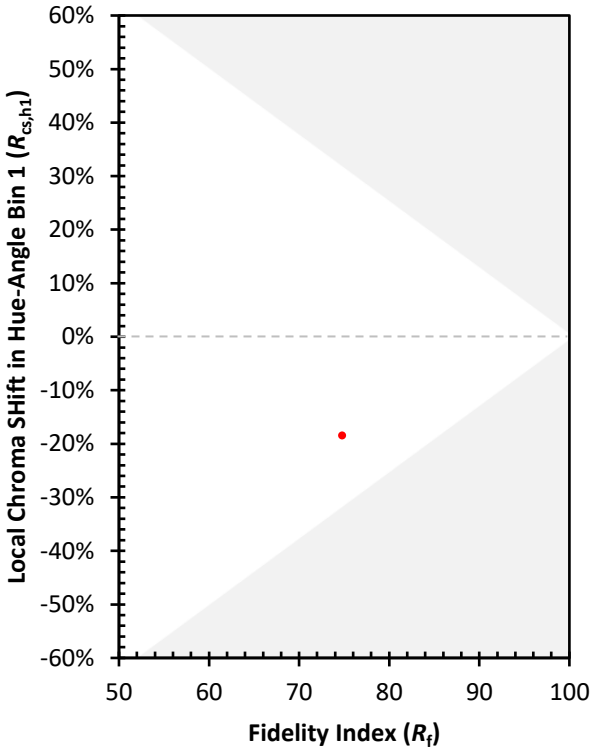
### Measure Comparisons




(END OF REPORT)