

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: P856159

Luminaire Tested: **FFX-CLB-60-727-U-FR-T5-UPLR**

Issue Date: 07/16/2024



Test Information

Test Method: LM-79-08
Report Number: P856159
Test Lab: INNOVATION CENTER(G3)
Issue Date: 07/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: FFX-CLB-60-727-U-FR-T5-UPLR
Description: FAIRFAX POST TOP FIXTURE w/ FAIRFAX REFRACTOR T5 DISTRIBUTION LENS AND UPLIGHT REFLECTOR
Light Source: (6) 2700K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

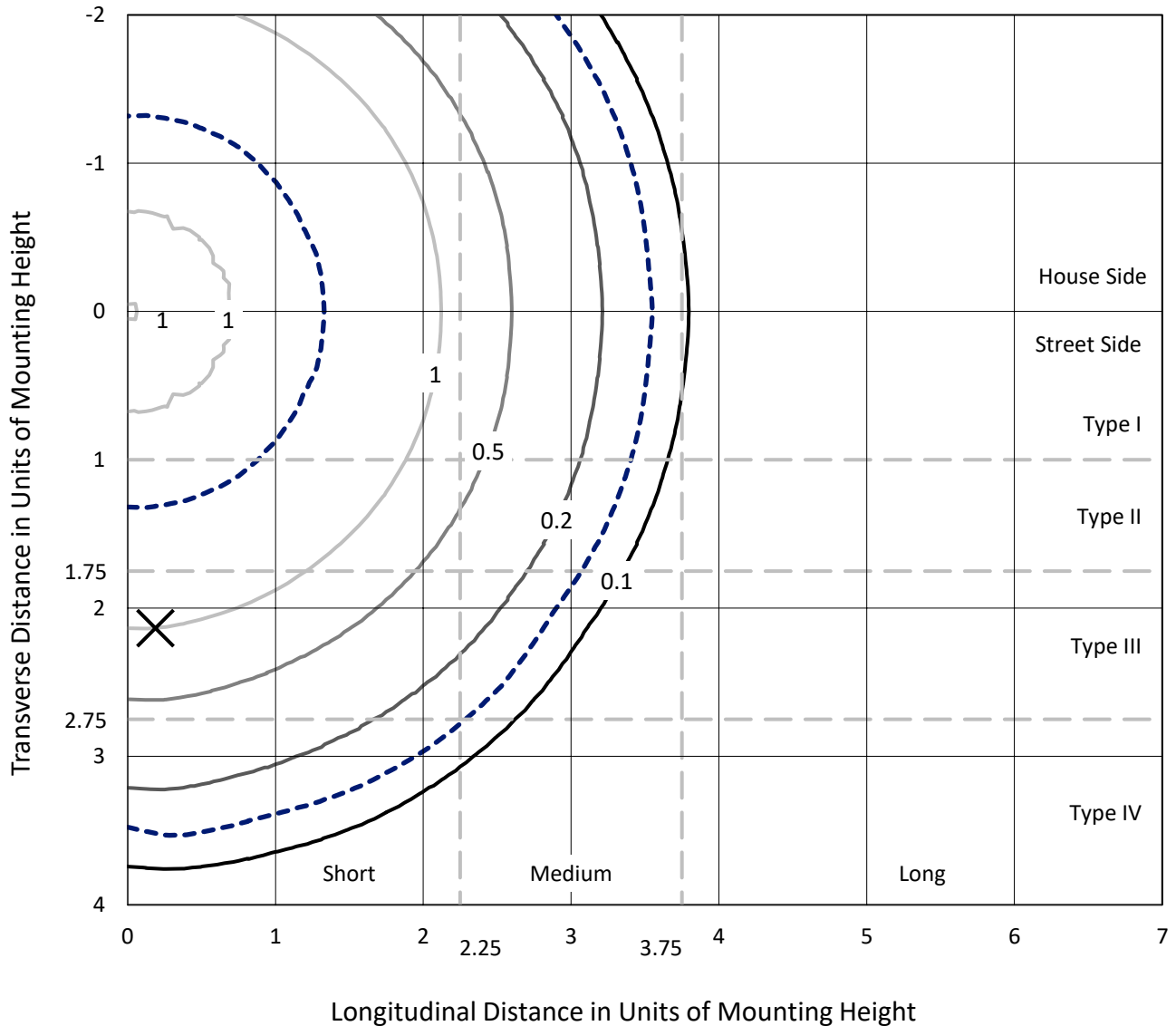
Lumens per Lamp: N/A
Luminaire Lumens: 8684.5 lumens
Efficiency: N/A
Efficacy: 145.2 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.17' x H: 1.67')
IES Classification: Type V - Short
BUG Rating: B3 - U4 - G3

Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 8.9%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P856159
 CATALOG NUMBER: FFX-CLB-60-727-U-FR-T5-UPLR

Iso-Footcandle Lines of Horizontal Illumination

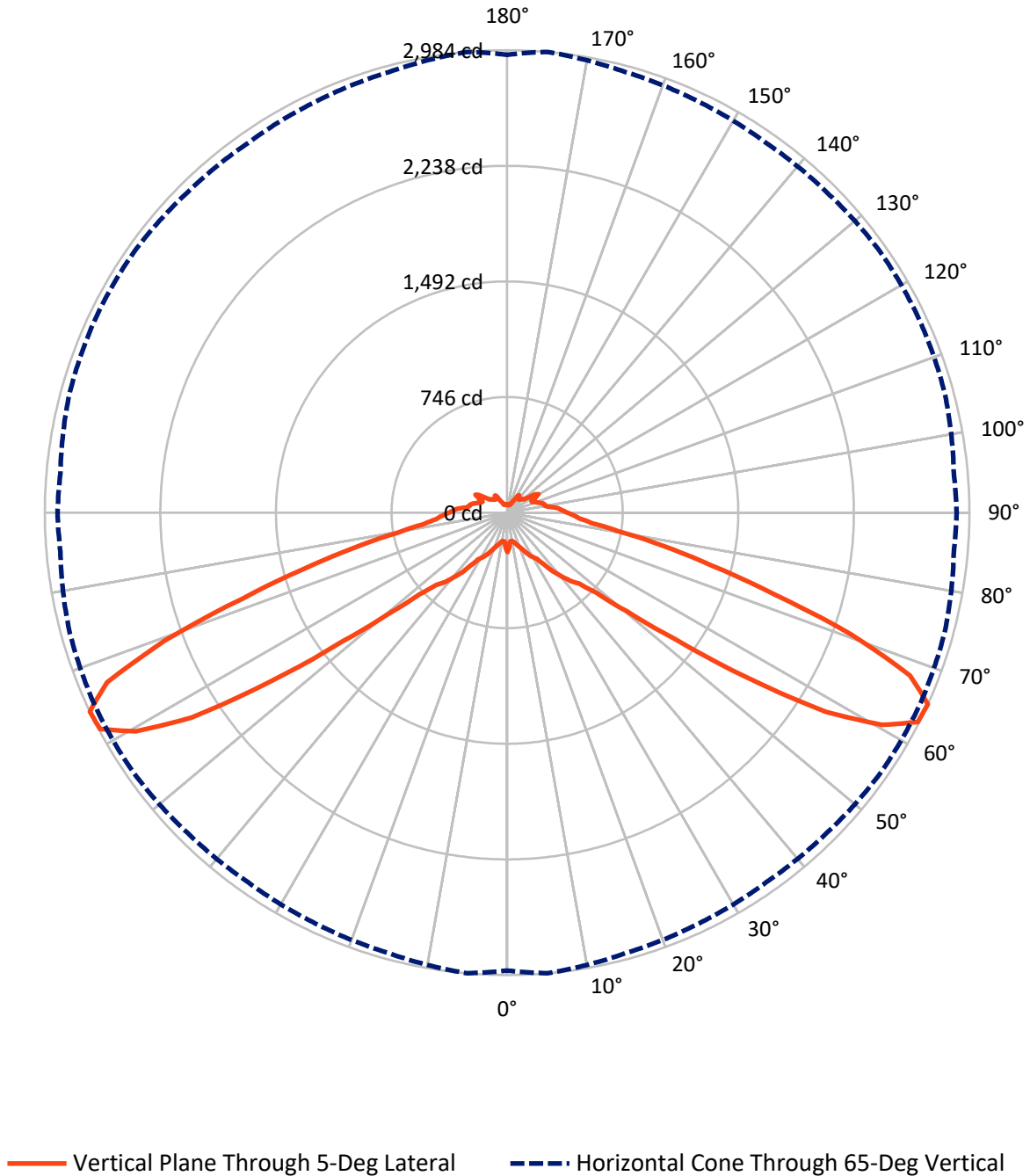
× Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.7 fc
 Type V - Short - N/A

REPORT NUMBER: P856159
CATALOG NUMBER: FFX-CLB-60-727-U-FR-T5-UPLR

Luminous Intensity Polar Plot



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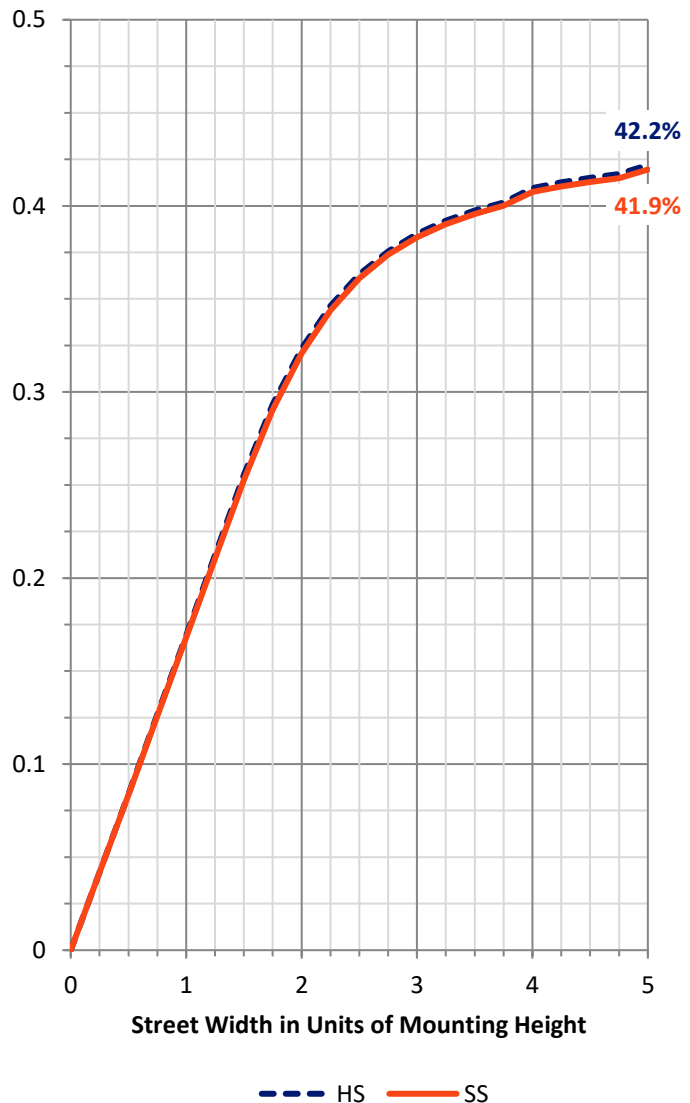
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 3793.5 | 548.7 | 4342.2 |
| | % Fixture | 43.7 | 6.3 | 50.0 |
| Street Side | Lumens | 3793.5 | 548.7 | 4342.2 |
| | % Fixture | 43.7 | 6.3 | 50.0 |
| Total | Lumens | 7587.0 | 1097.5 | 8684.5 |
| | % Fixture | 87.4 | 12.6 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 18.5 | 0.2 |
| 10°-20° | 61.0 | 0.7 |
| 20°-30° | 132.2 | 1.5 |
| 30°-40° | 267.7 | 3.1 |
| 40°-50° | 539.8 | 6.2 |
| 50°-60° | 1716.2 | 19.8 |
| 60°-70° | 2767.7 | 31.9 |
| 70°-80° | 1509.3 | 17.4 |
| 80°-90° | 574.7 | 6.6 |
| 90°-100° | 344.9 | 4.0 |
| 100°-110° | 219.9 | 2.5 |
| 110°-120° | 167.3 | 1.9 |
| 120°-130° | 141.5 | 1.6 |
| 130°-140° | 92.2 | 1.1 |
| 140°-150° | 77.3 | 0.9 |
| 150°-160° | 34.7 | 0.4 |
| 160°-170° | 14.7 | 0.2 |
| 170°-180° | 4.9 | 0.1 |
| 0°-90° | 7587.0 | 87.4 |
| 0°-180° | 8684.5 | 100.0 |



REPORT NUMBER: P856159

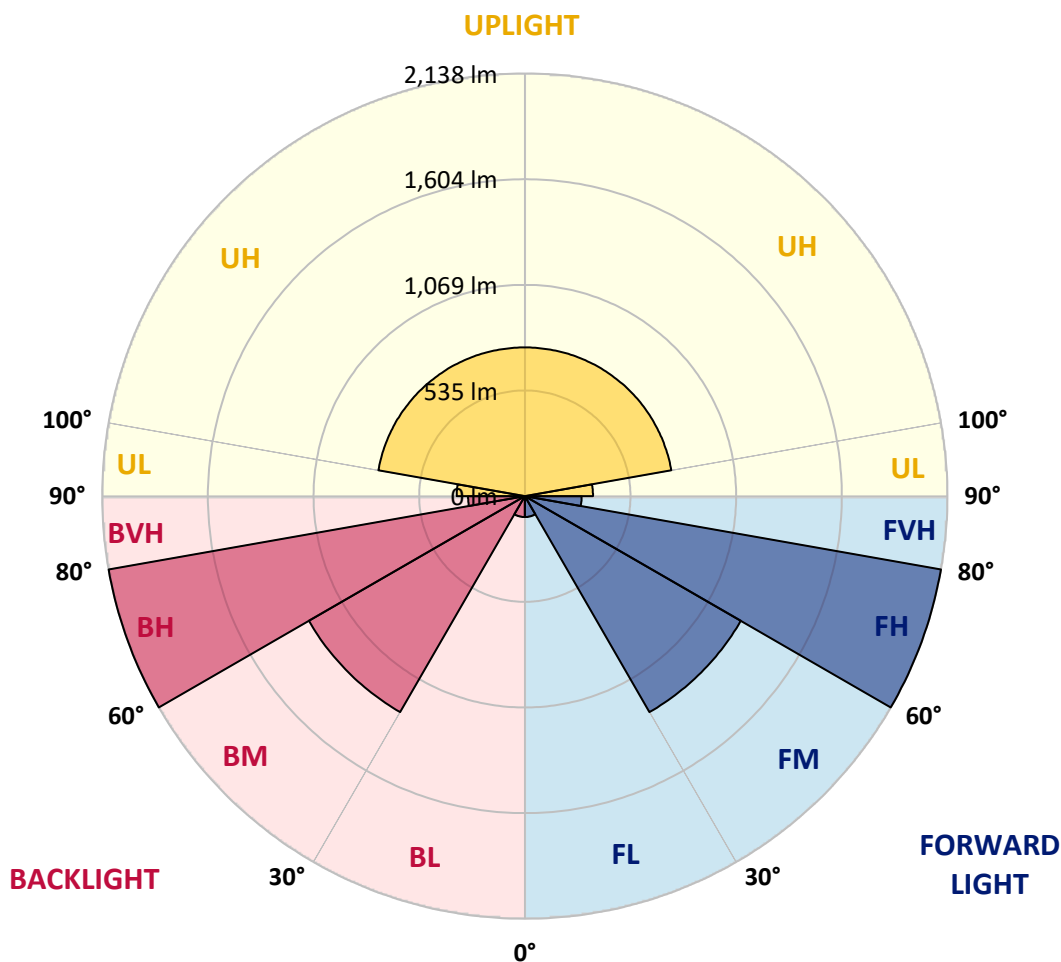
CATALOG NUMBER: FFX-CLB-60-727-U-FR-T5-UPLR

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|---------|---------|
| | | | B | U | G |
| FL (0°-30°) | 105.8 | 1.2 | | | |
| FM (30°-60°) | 1261.9 | 14.5 | | | |
| FH (60°-80°) | 2138.5 | 24.6 | | | G2/5000 |
| FVH (80°-90°) | 287.4 | 3.3 | | | G3/500 |
| BL (0°-30°) | 105.8 | 1.2 | B0/110 | | |
| BM (30°-60°) | 1261.9 | 14.5 | B2/2500 | | |
| BH (60°-80°) | 2138.5 | 24.6 | B3/2500 | | G2/5000 |
| BVH (80°-90°) | 287.4 | 3.3 | | | G3/500 |
| UL (90°-100°) | 344.9 | 4.0 | | U3/500 | |
| UH (100°-180°) | 752.6 | 8.7 | | U4/1000 | |

BUG Rating: B3-U4-G3

Type V Short





REPORT NUMBER: P856159

CATALOG NUMBER: FFX-CLB-60-727-U-FR-T5-UPLR

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 |
| 2.5° | 227.6 | 231.3 | 221.3 | 213.1 | 209.5 | 210.4 | 218.6 | 226.7 | 218.6 | 221.3 | 221.3 |
| 5° | 188.6 | 189.6 | 189.6 | 187.7 | 190.5 | 185.0 | 178.7 | 178.7 | 185.0 | 192.3 | 192.3 |
| 7.5° | 182.3 | 185.0 | 192.3 | 192.3 | 195.0 | 185.9 | 176.9 | 177.8 | 186.8 | 197.7 | 200.4 |
| 10° | 187.7 | 187.7 | 185.9 | 187.7 | 194.1 | 193.2 | 183.2 | 178.7 | 185.0 | 195.9 | 199.5 |
| 12.5° | 195.9 | 195.9 | 201.3 | 209.5 | 210.4 | 202.3 | 192.3 | 191.4 | 198.6 | 205.9 | 205.9 |
| 15° | 207.7 | 208.6 | 211.3 | 210.4 | 213.1 | 210.4 | 207.7 | 209.5 | 214.0 | 214.0 | 214.0 |
| 17.5° | 223.1 | 223.1 | 223.1 | 223.1 | 223.1 | 224.0 | 224.9 | 224.9 | 224.9 | 226.7 | 226.7 |
| 20° | 240.3 | 240.3 | 239.4 | 238.5 | 238.5 | 239.4 | 240.3 | 240.3 | 240.3 | 242.2 | 242.2 |
| 22.5° | 262.1 | 261.2 | 259.4 | 259.4 | 259.4 | 260.3 | 258.5 | 257.6 | 256.7 | 257.6 | 257.6 |
| 25° | 287.5 | 287.5 | 285.7 | 283.0 | 283.0 | 282.1 | 279.3 | 278.4 | 277.5 | 279.3 | 278.4 |
| 27.5° | 312.9 | 312.9 | 310.2 | 306.6 | 306.6 | 306.6 | 304.7 | 302.9 | 301.1 | 302.0 | 302.0 |
| 30° | 336.5 | 334.7 | 333.8 | 331.0 | 330.1 | 331.0 | 329.2 | 329.2 | 325.6 | 324.7 | 326.5 |
| 32.5° | 358.2 | 356.4 | 358.2 | 355.5 | 352.8 | 355.5 | 354.6 | 354.6 | 349.2 | 347.4 | 349.2 |
| 35° | 418.1 | 413.6 | 417.2 | 410.9 | 407.2 | 408.1 | 409.9 | 413.6 | 408.1 | 405.4 | 406.3 |
| 37.5° | 482.5 | 481.6 | 493.4 | 503.4 | 501.5 | 486.1 | 476.2 | 478.0 | 485.2 | 495.2 | 495.2 |
| 40° | 542.4 | 540.5 | 543.3 | 539.6 | 539.6 | 537.8 | 536.9 | 541.5 | 526.9 | 523.3 | 520.6 |
| 42.5° | 604.9 | 604.0 | 588.6 | 566.8 | 562.3 | 580.5 | 588.6 | 595.0 | 574.1 | 566.8 | 561.4 |
| 45° | 666.6 | 653.9 | 651.2 | 643.9 | 636.7 | 648.5 | 647.6 | 652.1 | 642.1 | 641.2 | 636.7 |
| 47.5° | 796.3 | 772.7 | 764.6 | 765.5 | 750.1 | 762.8 | 768.2 | 782.7 | 761.8 | 762.8 | 761.8 |
| 50° | 1030.3 | 1000.4 | 1014.0 | 1004.9 | 988.6 | 1004.0 | 1003.1 | 1029.4 | 994.9 | 1007.6 | 1002.2 |
| 52.5° | 1395.8 | 1355.0 | 1363.2 | 1357.7 | 1341.4 | 1373.1 | 1380.4 | 1419.4 | 1353.2 | 1369.5 | 1365.0 |
| 55° | 1924.6 | 1880.1 | 1898.3 | 1833.0 | 1815.7 | 1878.3 | 1901.9 | 1947.2 | 1859.3 | 1868.3 | 1863.8 |
| 57.5° | 2428.8 | 2426.1 | 2456.9 | 2410.7 | 2395.3 | 2439.7 | 2417.9 | 2457.9 | 2410.7 | 2444.2 | 2433.4 |
| 60° | 2772.6 | 2779.8 | 2810.7 | 2824.3 | 2797.1 | 2820.6 | 2768.0 | 2798.0 | 2783.4 | 2832.4 | 2827.9 |
| 62.5° | 2951.2 | 2974.8 | 2956.7 | 2957.6 | 2927.7 | 2945.8 | 2935.8 | 2953.0 | 2949.4 | 2954.0 | 2949.4 |
| 65° | 2954.9 | 2983.9 | 2944.0 | 2925.8 | 2913.1 | 2920.4 | 2937.6 | 2937.6 | 2926.7 | 2894.1 | 2901.4 |
| 67.5° | 2761.7 | 2805.2 | 2760.8 | 2735.4 | 2742.6 | 2739.9 | 2751.7 | 2736.3 | 2729.9 | 2681.9 | 2682.8 |
| 70° | 2286.4 | 2356.3 | 2291.0 | 2267.4 | 2286.4 | 2298.2 | 2297.3 | 2284.6 | 2274.6 | 2214.8 | 2232.0 |
| 72.5° | 1735.9 | 1797.6 | 1739.5 | 1730.5 | 1748.6 | 1766.8 | 1751.3 | 1766.8 | 1750.4 | 1723.2 | 1731.4 |
| 75° | 1310.6 | 1363.2 | 1363.2 | 1397.6 | 1403.1 | 1393.1 | 1350.5 | 1367.7 | 1378.6 | 1379.5 | 1387.6 |
| 77.5° | 964.1 | 1019.4 | 1048.4 | 1104.7 | 1102.0 | 1084.7 | 1033.0 | 1053.0 | 1073.8 | 1088.3 | 1098.3 |
| 80° | 685.7 | 727.4 | 770.0 | 809.9 | 815.4 | 800.8 | 769.1 | 780.9 | 793.6 | 803.6 | 809.0 |
| 82.5° | 531.5 | 550.5 | 542.4 | 537.8 | 545.1 | 565.9 | 573.2 | 580.5 | 562.3 | 550.5 | 555.1 |
| 85° | 463.5 | 465.3 | 479.8 | 489.8 | 492.5 | 492.5 | 485.2 | 490.7 | 495.2 | 507.0 | 507.0 |
| 87.5° | 422.6 | 424.5 | 460.7 | 470.7 | 474.3 | 469.8 | 460.7 | 464.4 | 468.0 | 475.2 | 475.2 |
| 90° | 375.5 | 380.9 | 417.2 | 425.4 | 429.0 | 421.7 | 419.0 | 421.7 | 417.2 | 419.9 | 419.9 |
| 92.5° | 349.2 | 349.2 | 366.4 | 362.8 | 361.9 | 362.8 | 363.7 | 366.4 | 361.9 | 360.1 | 360.1 |
| 95° | 319.2 | 323.8 | 319.2 | 322.9 | 322.0 | 317.4 | 315.6 | 317.4 | 314.7 | 314.7 | 316.5 |
| 97.5° | 267.6 | 268.5 | 260.3 | 263.0 | 263.0 | 259.4 | 254.9 | 256.7 | 253.9 | 255.8 | 256.7 |
| 100° | 250.3 | 247.6 | 234.0 | 232.2 | 231.3 | 228.6 | 225.8 | 225.8 | 224.9 | 224.0 | 224.9 |
| 102.5° | 244.9 | 244.9 | 226.7 | 223.1 | 221.3 | 216.8 | 213.1 | 213.1 | 213.1 | 213.1 | 214.0 |
| 105° | 224.0 | 230.4 | 216.8 | 214.0 | 211.3 | 205.9 | 200.4 | 199.5 | 201.3 | 199.5 | 202.3 |
| 107.5° | 203.2 | 208.6 | 201.3 | 201.3 | 198.6 | 193.2 | 189.6 | 188.6 | 189.6 | 187.7 | 189.6 |
| 110° | 191.4 | 194.1 | 185.9 | 185.9 | 184.1 | 179.6 | 178.7 | 177.8 | 177.8 | 175.0 | 176.9 |



REPORT NUMBER: P856159
 CATALOG NUMBER: FFX-CLB-60-727-U-FR-T5-UPLR

CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 112.5° | 176.9 | 176.9 | 170.5 | 168.7 | 168.7 | 166.0 | 165.1 | 164.2 | 164.2 | 164.2 | 165.1 |
| 115° | 175.9 | 175.0 | 165.1 | 158.7 | 157.8 | 156.9 | 157.8 | 156.9 | 156.9 | 156.0 | 156.0 |
| 117.5° | 214.9 | 205.9 | 172.3 | 156.9 | 156.9 | 157.8 | 161.4 | 158.7 | 152.4 | 152.4 | 151.5 |
| 120° | 232.2 | 234.0 | 198.6 | 182.3 | 178.7 | 174.1 | 173.2 | 171.4 | 165.1 | 164.2 | 167.8 |
| 122.5° | 205.0 | 214.0 | 192.3 | 185.9 | 182.3 | 176.9 | 173.2 | 172.3 | 172.3 | 167.8 | 174.1 |
| 125° | 159.6 | 167.8 | 156.9 | 156.0 | 155.1 | 156.0 | 154.2 | 154.2 | 156.0 | 153.3 | 154.2 |
| 127.5° | 137.0 | 140.6 | 136.0 | 136.0 | 135.1 | 134.2 | 132.4 | 133.3 | 132.4 | 133.3 | 134.2 |
| 130° | 131.5 | 134.2 | 129.7 | 127.9 | 127.9 | 128.8 | 128.8 | 128.8 | 126.1 | 124.3 | 125.2 |
| 132.5° | 130.6 | 129.7 | 122.4 | 118.8 | 118.8 | 125.2 | 127.9 | 127.9 | 121.5 | 117.0 | 117.0 |
| 135° | 117.9 | 118.8 | 117.9 | 113.4 | 114.3 | 116.1 | 118.8 | 119.7 | 113.4 | 110.6 | 111.6 |
| 137.5° | 113.4 | 116.1 | 117.0 | 115.2 | 115.2 | 113.4 | 112.5 | 113.4 | 111.6 | 112.5 | 112.5 |
| 140° | 113.4 | 114.3 | 117.0 | 118.8 | 117.0 | 115.2 | 115.2 | 115.2 | 116.1 | 118.8 | 120.6 |
| 142.5° | 116.1 | 117.0 | 116.1 | 115.2 | 117.9 | 122.4 | 126.1 | 126.1 | 123.3 | 121.5 | 122.4 |
| 145° | 133.3 | 136.0 | 136.0 | 133.3 | 135.1 | 133.3 | 133.3 | 131.5 | 131.5 | 131.5 | 132.4 |
| 147.5° | 127.0 | 126.1 | 127.9 | 130.6 | 127.9 | 127.0 | 127.0 | 127.9 | 129.7 | 130.6 | 131.5 |
| 150° | 99.8 | 97.0 | 98.9 | 104.3 | 103.4 | 103.4 | 103.4 | 104.3 | 105.2 | 105.2 | 106.1 |
| 152.5° | 78.9 | 78.9 | 80.7 | 80.7 | 81.6 | 81.6 | 80.7 | 80.7 | 80.7 | 81.6 | 81.6 |
| 155° | 70.7 | 69.8 | 71.6 | 74.4 | 72.6 | 72.6 | 72.6 | 72.6 | 72.6 | 72.6 | 73.5 |
| 157.5° | 61.7 | 60.8 | 60.8 | 61.7 | 61.7 | 61.7 | 61.7 | 62.6 | 62.6 | 61.7 | 62.6 |
| 160° | 56.2 | 56.2 | 55.3 | 55.3 | 55.3 | 56.2 | 57.1 | 57.1 | 56.2 | 55.3 | 55.3 |
| 162.5° | 53.5 | 53.5 | 51.7 | 50.8 | 50.8 | 51.7 | 53.5 | 53.5 | 51.7 | 50.8 | 50.8 |
| 165° | 53.5 | 52.6 | 49.9 | 48.1 | 48.1 | 49.9 | 52.6 | 52.6 | 49.9 | 48.1 | 48.1 |
| 167.5° | 52.6 | 52.6 | 50.8 | 49.0 | 49.0 | 50.8 | 51.7 | 52.6 | 51.7 | 49.9 | 49.0 |
| 170° | 50.8 | 50.8 | 51.7 | 51.7 | 50.8 | 50.8 | 50.8 | 50.8 | 51.7 | 51.7 | 51.7 |
| 172.5° | 52.6 | 51.7 | 52.6 | 53.5 | 53.5 | 52.6 | 51.7 | 51.7 | 52.6 | 53.5 | 53.5 |
| 175° | 53.5 | 53.5 | 52.6 | 52.6 | 52.6 | 51.7 | 51.7 | 51.7 | 52.6 | 53.5 | 52.6 |
| 177.5° | 48.1 | 48.1 | 47.2 | 48.1 | 48.1 | 48.1 | 47.2 | 48.1 | 48.1 | 48.1 | 49.0 |
| 180° | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 | 45.3 |

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

REPORT NUMBER: SP1-2406-133-3

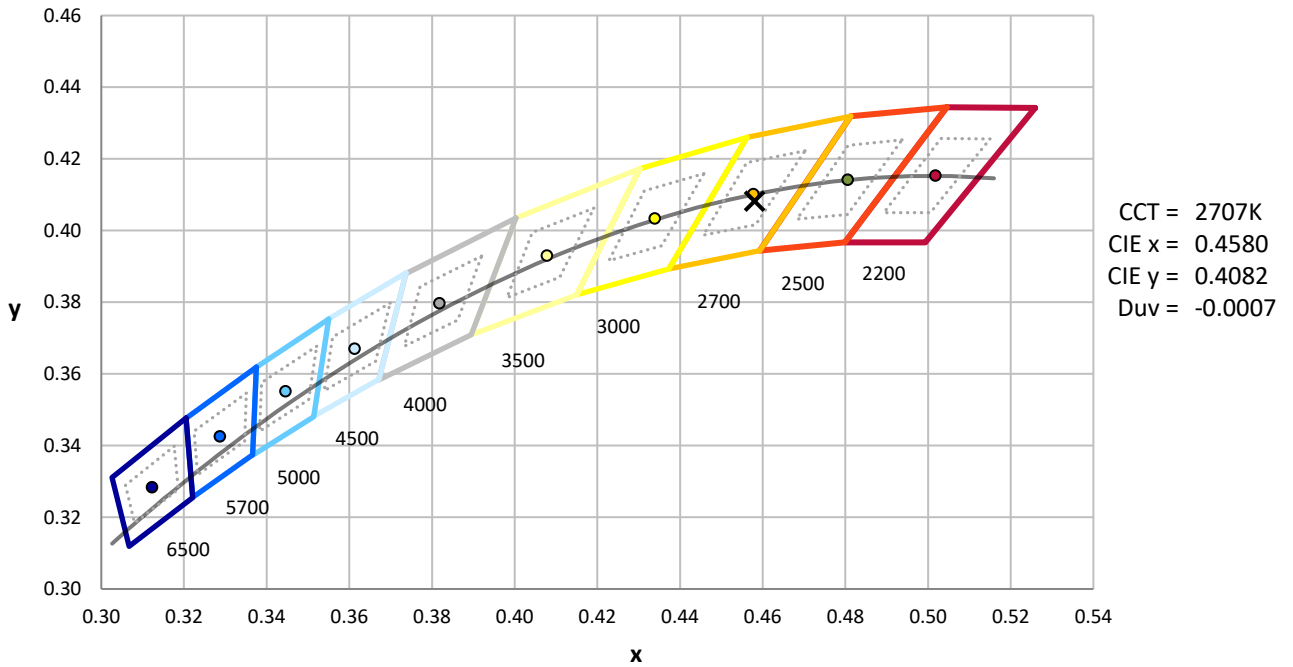
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 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 |

REPORT NUMBER: SP1-2406-133-3

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

REPORT NUMBER: SP1-2406-133-3

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 | | | |

REPORT NUMBER: SP1-2406-133-3

Scotopic Flux vs. Wavelength



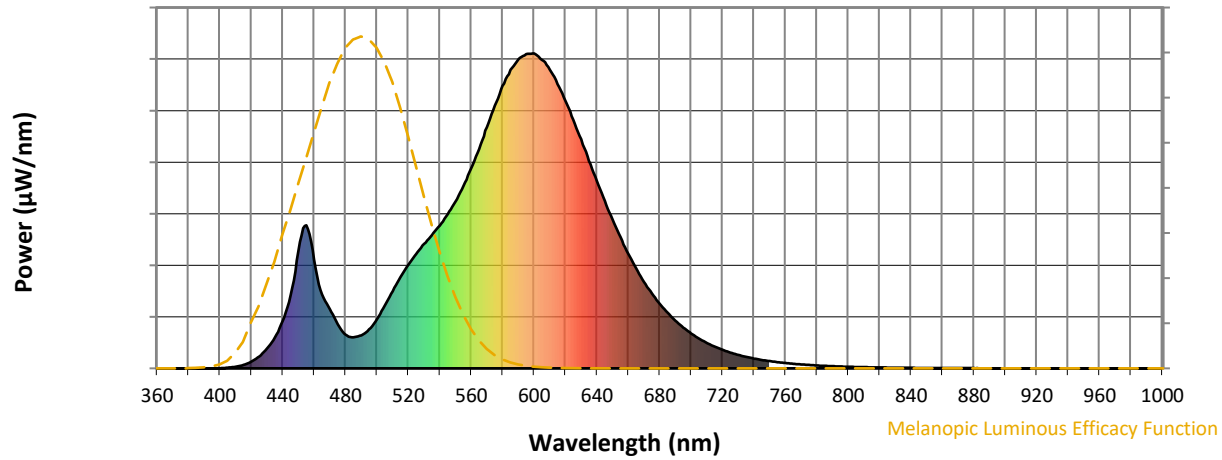
Scotopic Lumens: NR

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

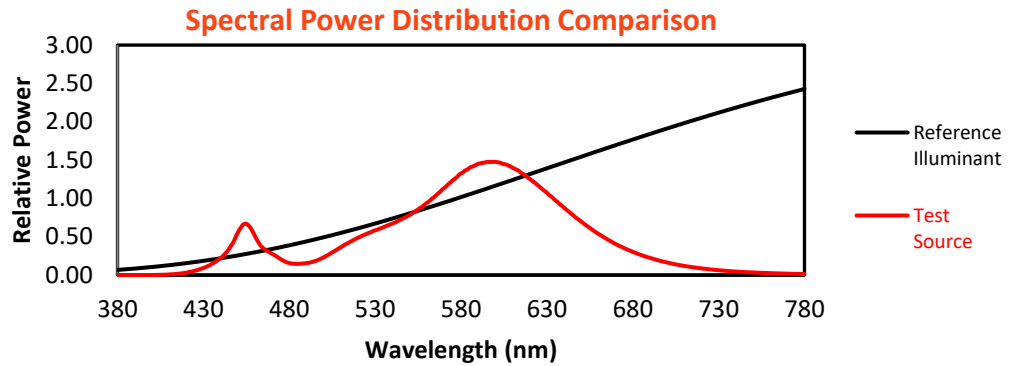
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 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

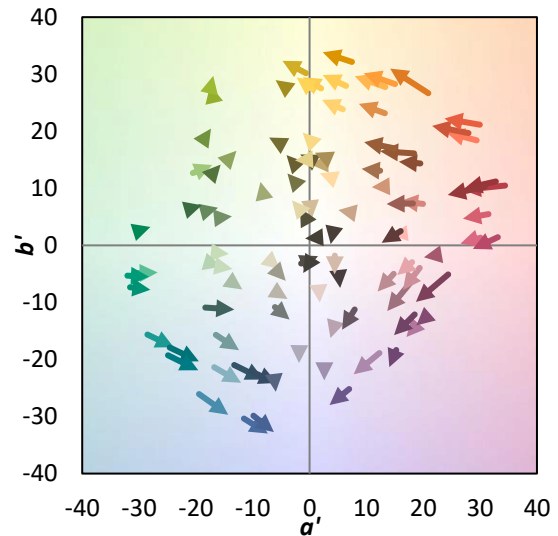
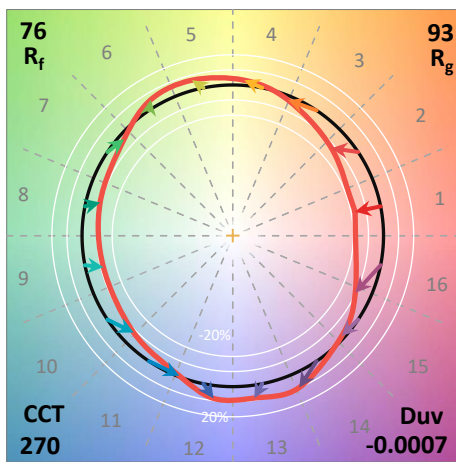
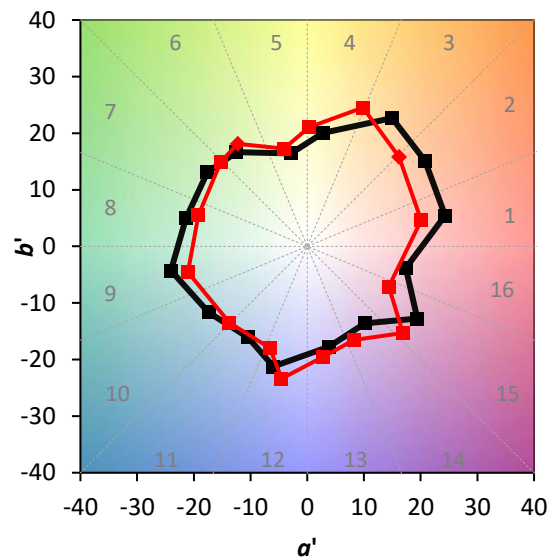
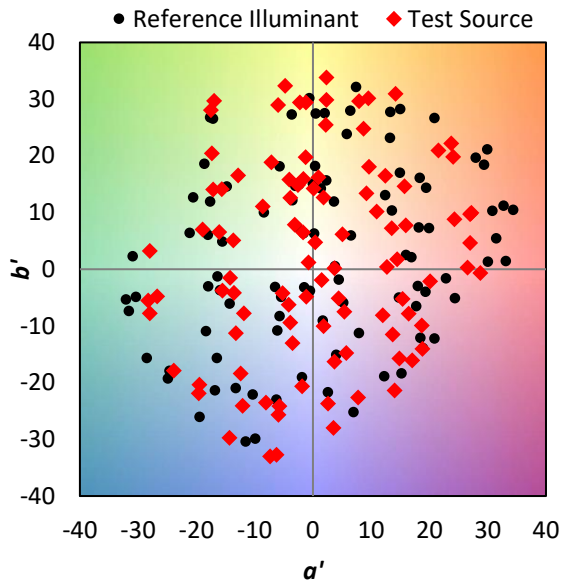
TM-30-18

Summary

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



Color Vector Graphics



REPORT NUMBER: SP1-2406-133-3

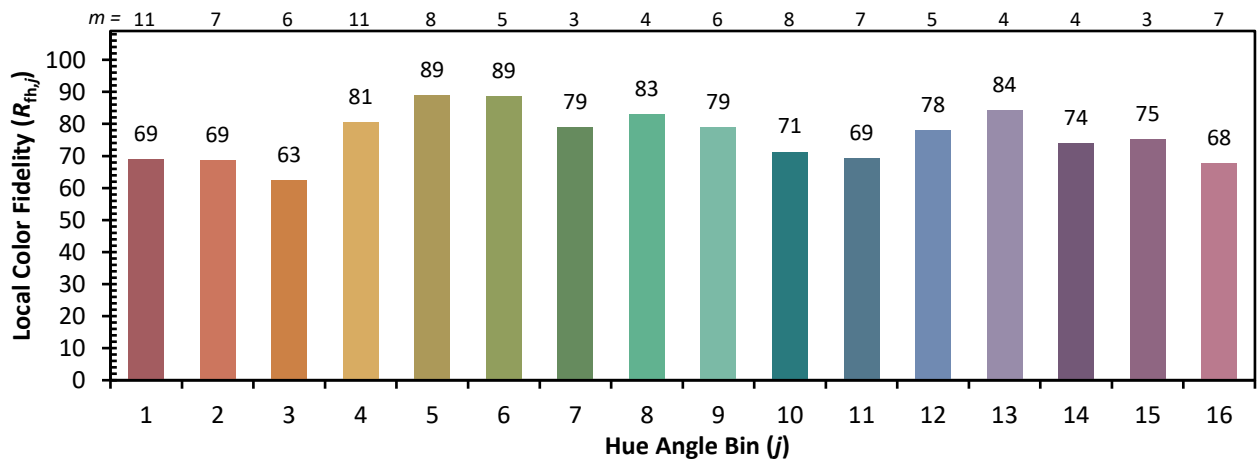
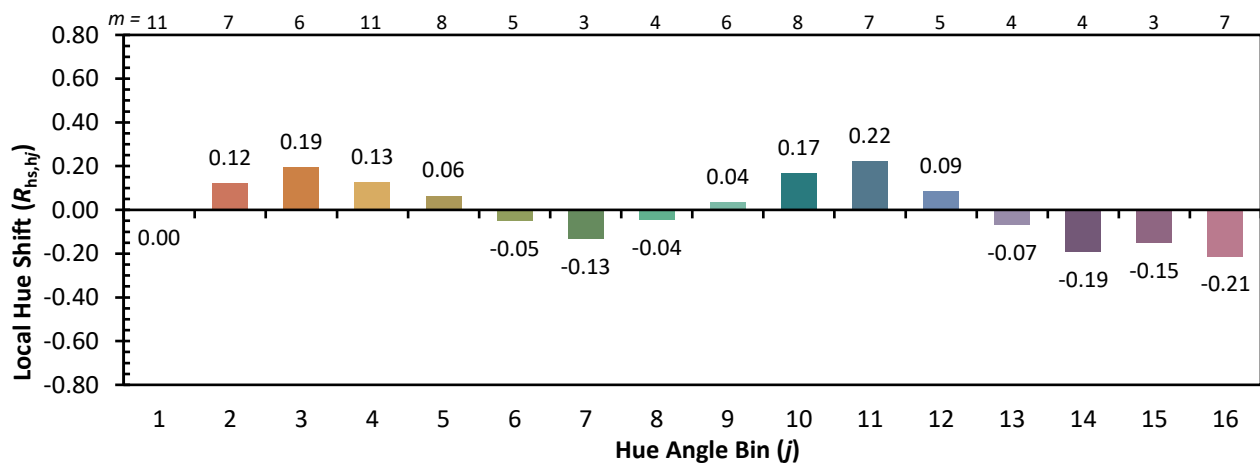
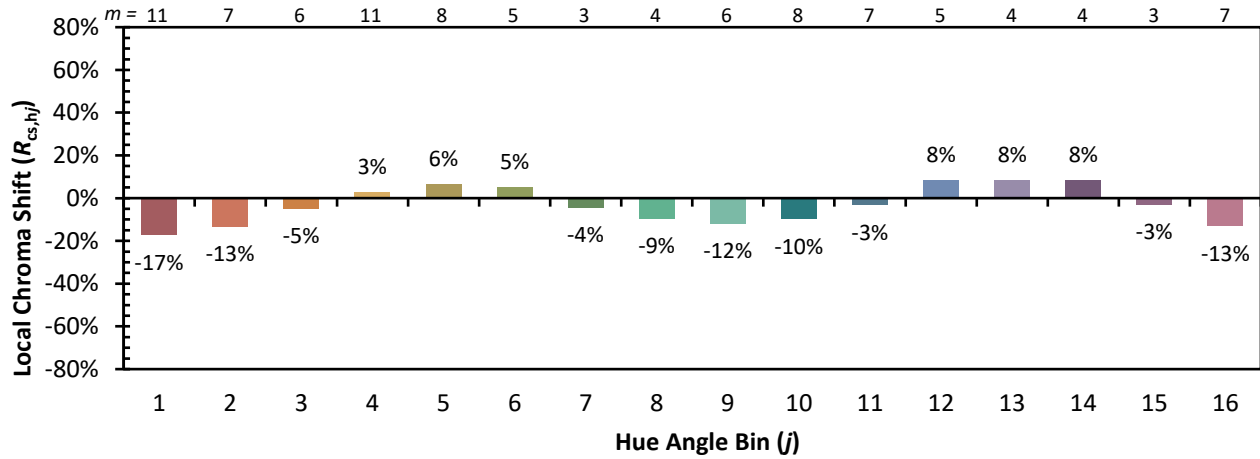
TM-30-18

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 | |



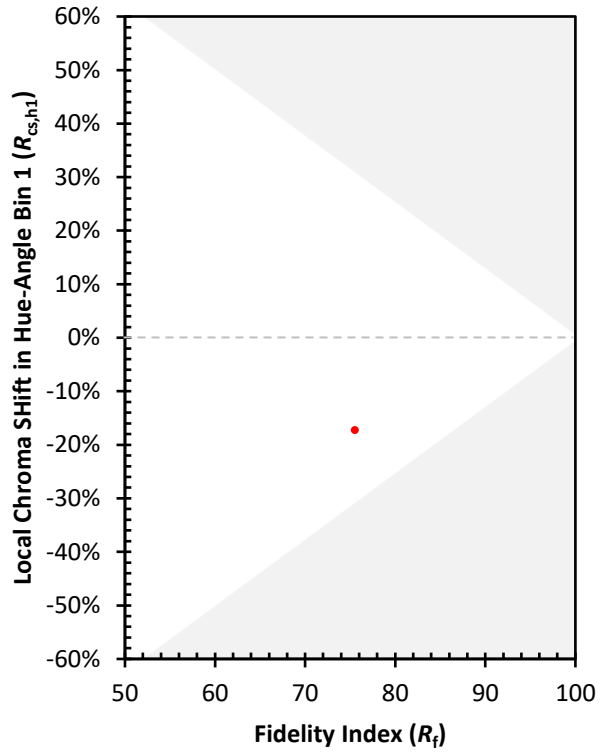
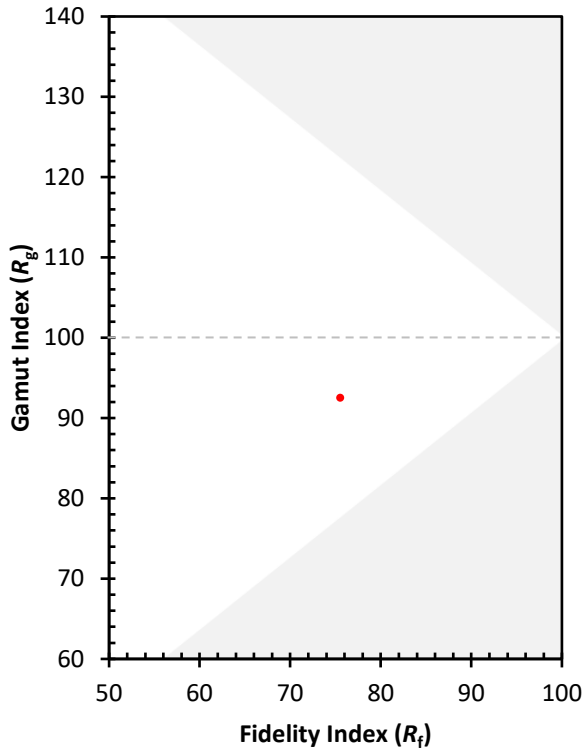
Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-2406-133-3

TM-30-18

Measure Comparisons



(END OF REPORT)