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: P981590

Luminaire Tested: **FFX-CLB-40-AMB-U-VM8-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: | P981590 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 04/15/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | STREETWORKS |
| Catalog Number: | FFX-CLB-40-AMB-U-VM8-T5 |
| Description: | FAIRFAX POST TOP FIXTURE w/ ULA ACORN 8 INCH NECK |
| Light Source: | (6) 1500K CCT, 0 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 1190.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 28.4 lumens/watt |
| Luminous Opening: | Vertical Cylinder (Dia: 1.33' x H: 2.08') |
| IES Classification: | Type V - Short |
| BUG Rating: | B1 - U3 - G1 |

| | |
|---|---|
| Input Watts (W): | 41.9 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.99 |
| Total Harmonic Distortion (THDi): | 16.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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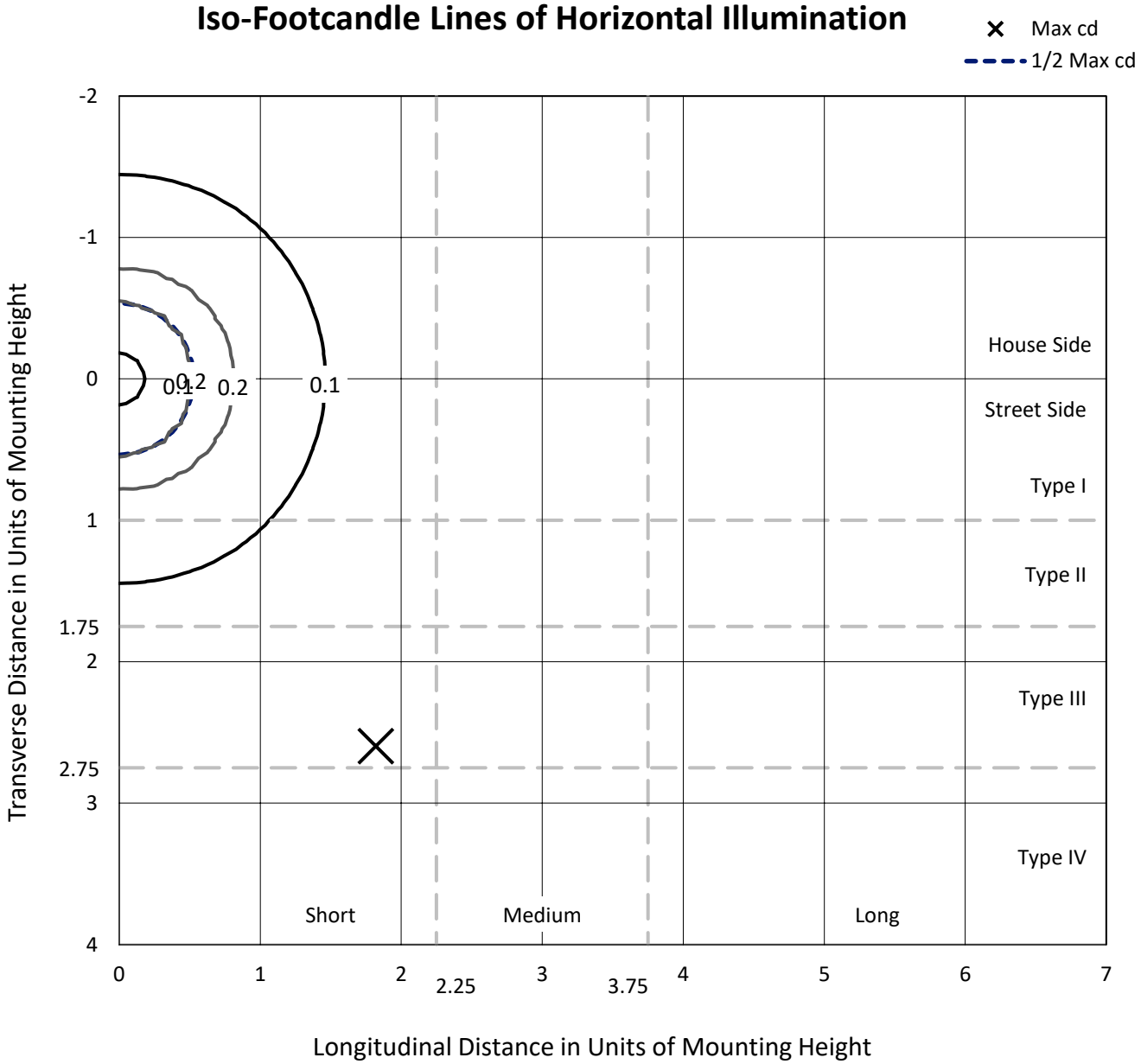
Scaled Data Report

REPORT NUMBER: P981590
CATALOG NUMBER: FFX-CLB-40-AMB-U-VM8-T5

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 0.2 fc
Type V - Short - N/A

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REPORT NUMBER: P981590
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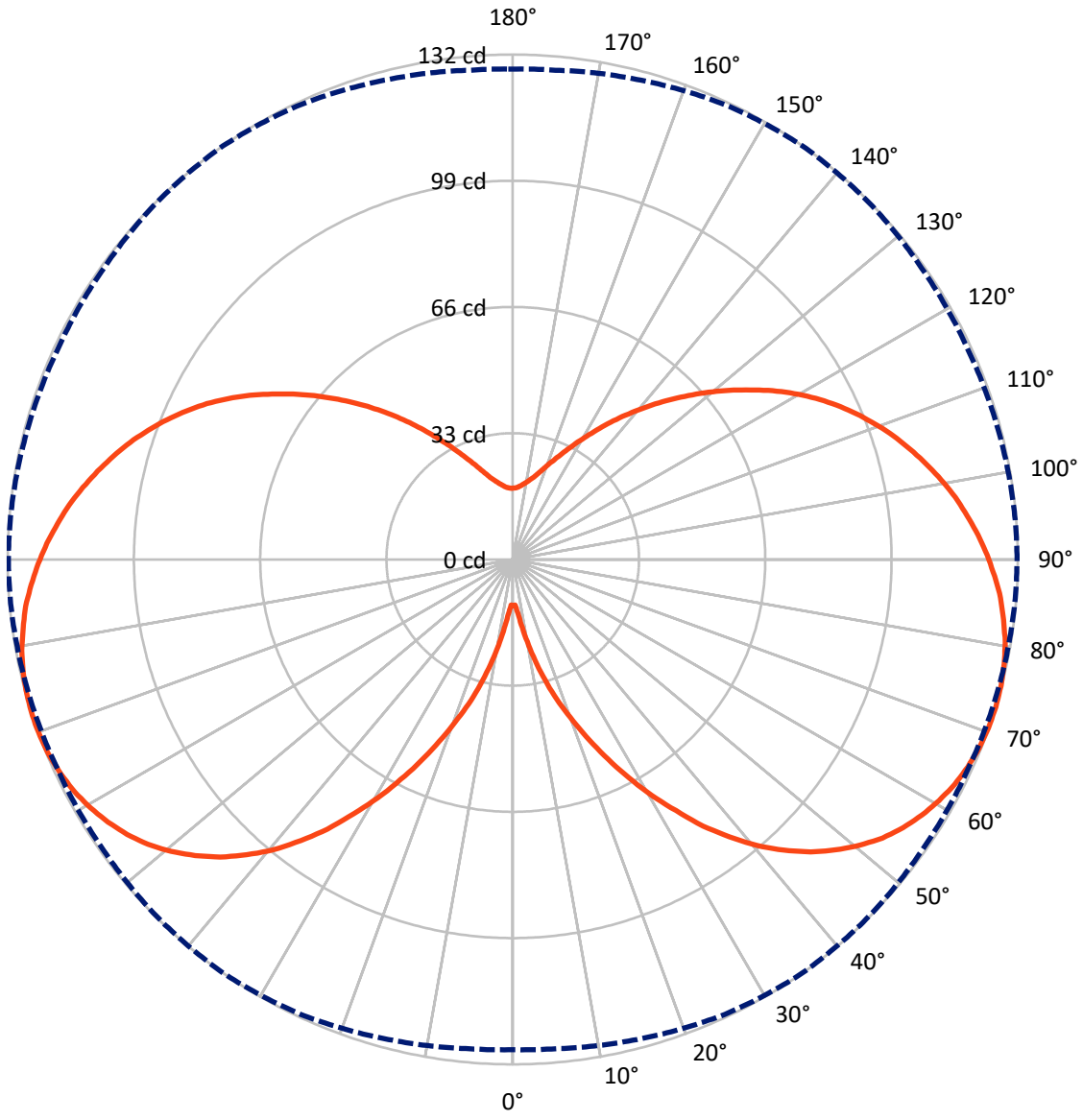
## Luminous Intensity Polar Plot



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REPORT NUMBER: P981590
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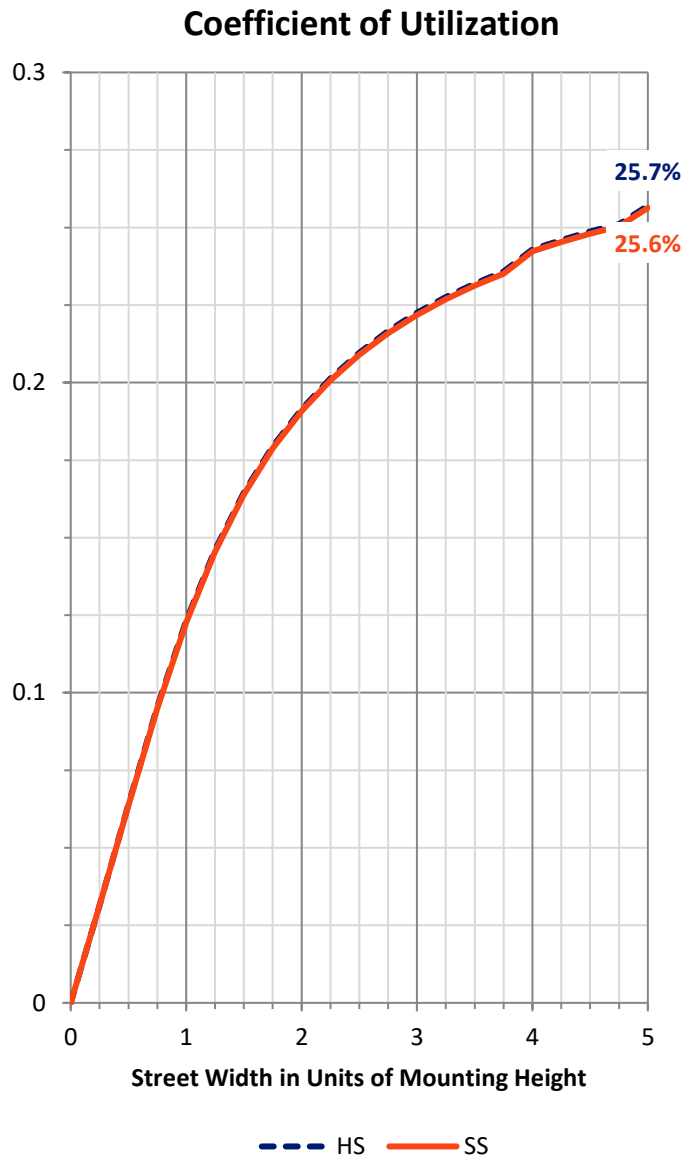
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 346.0 | 249.1 | 595.1 |
| | % Fixture | 29.1 | 20.9 | 50.0 |
| **Street Side** | Lumens | 346.0 | 249.1 | 595.1 |
| | % Fixture | 29.1 | 20.9 | 50.0 |
| **Total** | Lumens | 692.0 | 498.1 | 1190.2 |
| | % Fixture | 58.1 | 41.9 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 1.6 | 0.1 |
| 10°-20° | 10.0 | 0.8 |
| 20°-30° | 27.2 | 2.3 |
| 30°-40° | 53.9 | 4.5 |
| 40°-50° | 84.3 | 7.1 |
| 50°-60° | 110.5 | 9.3 |
| 60°-70° | 128.8 | 10.8 |
| 70°-80° | 137.9 | 11.6 |
| 80°-90° | 137.8 | 11.6 |
| 90°-100° | 128.8 | 10.8 |
| 100°-110° | 113.2 | 9.5 |
| 110°-120° | 92.5 | 7.8 |
| 120°-130° | 68.6 | 5.8 |
| 130°-140° | 45.5 | 3.8 |
| 140°-150° | 27.0 | 2.3 |
| 150°-160° | 14.1 | 1.2 |
| 160°-170° | 6.5 | 0.5 |
| 170°-180° | 1.9 | 0.2 |
| 0°-90° | 692.0 | 58.1 |
| 0°-180° | 1190.2 | 100.0 |



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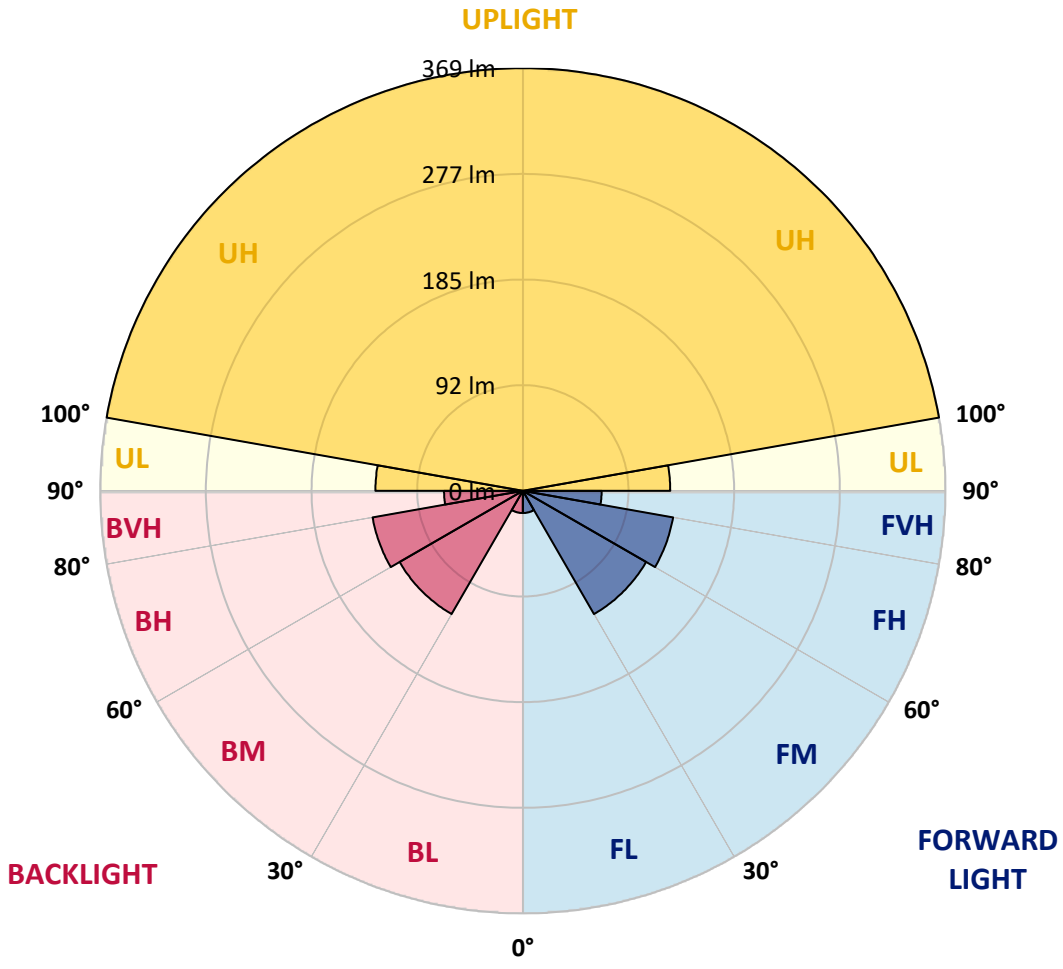
Scaled Data Report

REPORT NUMBER: P981590
CATALOG NUMBER: FFX-CLB-40-AMB-U-VM8-T5

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 19.4 | 1.6 | | | |
| FM | (30°-60°) | 124.4 | 10.4 | | | |
| FH | (60°-80°) | 133.4 | 11.2 | | | G0/660 |
| FVH | (80°-90°) | 68.9 | 5.8 | | | G1/100 |
| BL | (0°-30°) | 19.4 | 1.6 | B0/110 | | |
| BM | (30°-60°) | 124.4 | 10.4 | B0/220 | | |
| BH | (60°-80°) | 133.4 | 11.2 | B1/500 | | G0/660 |
| BVH | (80°-90°) | 68.9 | 5.8 | | | G1/100 |
| UL | (90°-100°) | 128.8 | 10.8 | | U3/500 | |
| UH | (100°-180°) | 369.3 | 31.0 | | U3/500 | |

**BUG Rating: B1-U3-G1**
Type V Short



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Scaled Data Report

REPORT NUMBER: P981590
CATALOG NUMBER: FFX-CLB-40-AMB-U-VM8-T5

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 12.1 | 12.1 | 12.1 | 12.1 | *12.1* | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 |
| 2.5° | 12.0 | 11.9 | 12.0 | 12.0 | *11.9* | 11.9 | 11.9 | 11.9 | 11.9 | 11.8 | 11.8 |
| 5° | 13.9 | 13.9 | 13.9 | 13.9 | *14.1* | 14.0 | 14.0 | 13.9 | 13.8 | 13.8 | 13.7 |
| 7.5° | 17.7 | 17.9 | 18.1 | 18.1 | *18.0* | 18.1 | 18.0 | 18.1 | 18.0 | 18.0 | 18.1 |
| 10° | 22.8 | 22.8 | 22.9 | 23.0 | *22.8* | 23.0 | 22.9 | 22.9 | 23.0 | 22.9 | 22.9 |
| 12.5° | 28.1 | 28.1 | 28.3 | 28.1 | *28.1* | 28.2 | 28.3 | 28.2 | 28.4 | 28.4 | 28.2 |
| 15° | 33.8 | 34.0 | 33.9 | 33.7 | *33.8* | 34.1 | 34.0 | 34.0 | 34.1 | 34.2 | 34.2 |
| 17.5° | 39.2 | 39.4 | 39.4 | 39.4 | *39.5* | 39.5 | 39.7 | 39.8 | 39.7 | 39.8 | 39.9 |
| 20° | 45.0 | 44.8 | 44.9 | 45.2 | *45.1* | 45.2 | 45.4 | 45.5 | 45.3 | 45.5 | 45.4 |
| 22.5° | 50.8 | 50.9 | 50.9 | 51.1 | *51.3* | 51.3 | 51.5 | 51.6 | 51.6 | 51.7 | 51.7 |
| 25° | 57.4 | 57.3 | 57.6 | 57.3 | *57.9* | 58.1 | 58.2 | 58.3 | 58.3 | 58.4 | 58.4 |
| 27.5° | 63.9 | 64.2 | 64.2 | 64.3 | *64.6* | 64.8 | 64.8 | 64.9 | 65.1 | 65.1 | 65.0 |
| 30° | 71.0 | 70.8 | 71.1 | 71.2 | *71.6* | 71.7 | 71.8 | 72.2 | 72.2 | 72.1 | 72.0 |
| 32.5° | 77.5 | 77.9 | 78.0 | 78.4 | *78.3* | 78.6 | 78.9 | 79.1 | 79.2 | 79.1 | 79.1 |
| 35° | 84.6 | 84.5 | 85.0 | 85.2 | *85.6* | 85.8 | 86.0 | 86.0 | 86.1 | 86.2 | 86.2 |
| 37.5° | 90.9 | 91.1 | 91.5 | 91.7 | *92.0* | 92.4 | 92.5 | 92.5 | 92.8 | 92.7 | 92.8 |
| 40° | 97.2 | 97.4 | 97.7 | 97.9 | *98.4* | 98.6 | 98.8 | 99.0 | 99.0 | 99.2 | 99.1 |
| 42.5° | 102.7 | 102.8 | 103.0 | 103.6 | *103.9* | 104.2 | 104.5 | 104.5 | 104.6 | 104.6 | 104.9 |
| 45° | 107.6 | 107.8 | 108.0 | 108.7 | *109.1* | 109.4 | 109.4 | 109.6 | 109.8 | 109.9 | 110.0 |
| 47.5° | 111.8 | 111.9 | 112.3 | 113.1 | *113.5* | 113.8 | 113.7 | 113.9 | 114.0 | 114.2 | 113.9 |
| 50° | 115.8 | 115.7 | 116.3 | 117.0 | *117.5* | 117.8 | 117.9 | 117.9 | 118.0 | 118.2 | 118.1 |
| 52.5° | 118.9 | 119.1 | 119.6 | 120.5 | *121.0* | 121.3 | 121.1 | 121.2 | 121.3 | 121.5 | 121.4 |
| 55° | 121.4 | 121.6 | 122.2 | 123.2 | *123.8* | 124.0 | 123.9 | 123.8 | 124.0 | 124.2 | 124.3 |
| 57.5° | 123.6 | 123.8 | 124.6 | 125.6 | *126.1* | 126.3 | 126.1 | 125.9 | 126.2 | 126.5 | 126.6 |
| 60° | 125.3 | 125.5 | 126.3 | 127.4 | *128.0* | 128.2 | 127.9 | 127.9 | 128.1 | 128.3 | 128.4 |
| 62.5° | 126.8 | 126.9 | 127.8 | 129.0 | *129.6* | 129.7 | 129.4 | 129.2 | 129.5 | 129.8 | 129.9 |
| 65° | 127.5 | 127.8 | 128.8 | 130.0 | *130.7* | 130.7 | 130.4 | 130.1 | 130.5 | 130.8 | 130.9 |
| 67.5° | 128.1 | 128.3 | 129.4 | 130.7 | *131.5* | 131.3 | 130.9 | 130.8 | 131.0 | 131.4 | 131.4 |
| 70° | 128.4 | 128.6 | 129.8 | 131.3 | *131.9* | 131.9 | 131.3 | 131.0 | 131.4 | 131.8 | 131.8 |
| 72.5° | *128.2* | *128.4* | *129.7* | *131.2* | *132.0* | *131.8* | *131.2* | *131.0* | *131.3* | *131.7* | *131.8* |
| 75° | 127.8 | 128.0 | 129.4 | 130.9 | *131.8* | 131.5 | 130.8 | 130.6 | 130.8 | 131.4 | 131.4 |
| 77.5° | 127.2 | 127.5 | 128.8 | 130.5 | *131.3* | 131.0 | 130.3 | 129.9 | 130.3 | 130.8 | 131.0 |
| 80° | 126.2 | 126.5 | 127.9 | 129.6 | *130.5* | 130.1 | 129.4 | 129.0 | 129.4 | 130.0 | 130.0 |
| 82.5° | 125.0 | 125.3 | 126.7 | 128.4 | *129.2* | 128.9 | 128.2 | 127.7 | 128.1 | 128.8 | 128.9 |
| 85° | 123.5 | 123.8 | 125.3 | 127.0 | *127.9* | 127.6 | 126.7 | 126.3 | 126.7 | 127.4 | 127.5 |
| 87.5° | 121.8 | 122.0 | 123.5 | 125.2 | *126.0* | 125.7 | 125.0 | 124.6 | 125.1 | 125.5 | 125.6 |
| 90° | 120.0 | 120.2 | 121.4 | 123.2 | *124.0* | 123.7 | 123.0 | 122.6 | 123.0 | 123.5 | 123.6 |
| 92.5° | 117.9 | 118.1 | 119.5 | 120.9 | *121.8* | 121.6 | 120.9 | 120.5 | 120.8 | 121.4 | 121.4 |
| 95° | 115.7 | 115.9 | 117.0 | 118.6 | *119.3* | 119.2 | 118.5 | 118.2 | 118.4 | 119.0 | 118.9 |
| 97.5° | 113.1 | 113.4 | 114.5 | 115.9 | *116.8* | 116.7 | 116.0 | 115.6 | 115.9 | 116.3 | 116.3 |
| 100° | 110.6 | 110.8 | 111.9 | 113.0 | *113.9* | 113.9 | 113.4 | 113.0 | 113.1 | 113.4 | 113.3 |
| 102.5° | 108.0 | 107.9 | 108.9 | 110.1 | *110.9* | 111.0 | 110.6 | 110.2 | 110.3 | 110.5 | 110.4 |
| 105° | 105.1 | 105.2 | 106.0 | 107.1 | *107.8* | 107.9 | 107.6 | 107.3 | 107.3 | 107.3 | 107.2 |
| 107.5° | 102.0 | 102.1 | 102.7 | 103.7 | *104.6* | 104.8 | 104.5 | 104.3 | 104.0 | 103.9 | 103.8 |
| 110° | 98.9 | 99.0 | 99.6 | 100.4 | *101.1* | 101.5 | 101.2 | 101.1 | 100.8 | 100.4 | 100.6 |

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

Scaled Data Report

REPORT NUMBER: P981590
CATALOG NUMBER: FFX-CLB-40-AMB-U-VM8-T5

**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 95.6 | 95.5 | 96.2 | 96.8 | *97.5* | 97.9 | 97.9 | 97.5 | 97.1 | 97.1 | 96.9 |
| 115° | 92.1 | 92.1 | 92.4 | 92.8 | *93.7* | 94.2 | 94.2 | 93.7 | 93.3 | 93.0 | 93.1 |
| 117.5° | 88.4 | 88.3 | 88.5 | 88.8 | *89.7* | 90.1 | 90.3 | 90.0 | 89.4 | 89.1 | 89.1 |
| 120° | 84.4 | 84.3 | 84.3 | 84.7 | *85.4* | 85.9 | 86.1 | 85.8 | 85.1 | 84.9 | 84.9 |
| 122.5° | 80.1 | 80.1 | 80.1 | 80.4 | *81.0* | 81.4 | 81.7 | 81.4 | 80.8 | 80.5 | 80.4 |
| 125° | 75.7 | 75.8 | 75.8 | 75.9 | *76.3* | 76.9 | 77.2 | 76.8 | 76.3 | 75.9 | 75.7 |
| 127.5° | 71.3 | 71.4 | 71.2 | 71.4 | *71.8* | 72.4 | 72.8 | 72.3 | 71.9 | 71.7 | 71.4 |
| 130° | 66.7 | 67.0 | 66.8 | 67.0 | *67.3* | 67.8 | 68.0 | 67.9 | 67.4 | 66.9 | 67.0 |
| 132.5° | 62.5 | 62.5 | 62.5 | 62.5 | *62.8* | 63.2 | 63.5 | 63.4 | 63.0 | 62.5 | 62.6 |
| 135° | 58.1 | 58.2 | 58.2 | 58.2 | *58.5* | 58.7 | 58.9 | 58.7 | 58.6 | 58.0 | 57.9 |
| 137.5° | 54.2 | 53.9 | 54.0 | 53.9 | *54.3* | 54.4 | 54.6 | 54.5 | 54.1 | 54.0 | 53.8 |
| 140° | 49.9 | 50.0 | 50.0 | 50.0 | *50.2* | 50.3 | 50.4 | 50.4 | 50.1 | 49.8 | 50.0 |
| 142.5° | 46.1 | 46.0 | 46.0 | 46.2 | *46.3* | 46.4 | 46.5 | 46.5 | 46.1 | 46.0 | 45.9 |
| 145° | 42.5 | 42.4 | 42.3 | 42.4 | *42.5* | 42.6 | 42.8 | 42.6 | 42.5 | 42.3 | 42.3 |
| 147.5° | 38.8 | 38.8 | 38.9 | 38.9 | *38.9* | 39.2 | 39.1 | 39.2 | 39.0 | 38.8 | 38.7 |
| 150° | 35.6 | 35.6 | 35.6 | 35.7 | *35.7* | 35.7 | 35.7 | 35.7 | 35.7 | 35.4 | 35.4 |
| 152.5° | 32.7 | 32.6 | 32.6 | 32.6 | *32.7* | 32.8 | 32.7 | 32.7 | 32.5 | 32.6 | 32.6 |
| 155° | 30.0 | 29.9 | 30.0 | 30.0 | *30.0* | 30.1 | 30.0 | 30.0 | 29.9 | 29.8 | 29.9 |
| 157.5° | 27.6 | 27.7 | 27.6 | 27.7 | *27.7* | 27.7 | 27.8 | 27.7 | 27.6 | 27.6 | 27.4 |
| 160° | 25.5 | 25.6 | 25.6 | 25.6 | *25.6* | 25.6 | 25.6 | 25.6 | 25.6 | 25.5 | 25.5 |
| 162.5° | 23.9 | 23.9 | 23.9 | 23.9 | *23.8* | 23.9 | 23.8 | 23.9 | 23.8 | 23.7 | 23.7 |
| 165° | 22.4 | 22.4 | 22.4 | 22.3 | *22.3* | 22.4 | 22.4 | 22.3 | 22.3 | 22.3 | 22.3 |
| 167.5° | 21.2 | 21.3 | 21.3 | 21.2 | *21.2* | 21.3 | 21.2 | 21.2 | 21.2 | 21.2 | 21.2 |
| 170° | 20.4 | 20.3 | 20.2 | 20.3 | *20.3* | 20.3 | 20.3 | 20.3 | 20.2 | 20.3 | 20.2 |
| 172.5° | 19.6 | 19.6 | 19.5 | 19.6 | *19.6* | 19.5 | 19.6 | 19.6 | 19.5 | 19.5 | 19.5 |
| 175° | 19.0 | 19.0 | 19.0 | 19.0 | *19.0* | 19.0 | 18.9 | 19.0 | 19.0 | 18.9 | 19.0 |
| 177.5° | 18.7 | 18.7 | 18.7 | 18.7 | *18.7* | 18.7 | 18.7 | 18.7 | 18.7 | 18.7 | 18.7 |
| 180° | 18.6 | 18.6 | 18.6 | 18.6 | *18.6* | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 |

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

# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2501-332-6

Test Date: 03/28/2025

Luminaire Tested: FFX-CLB-AMB-U-FR-T5

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

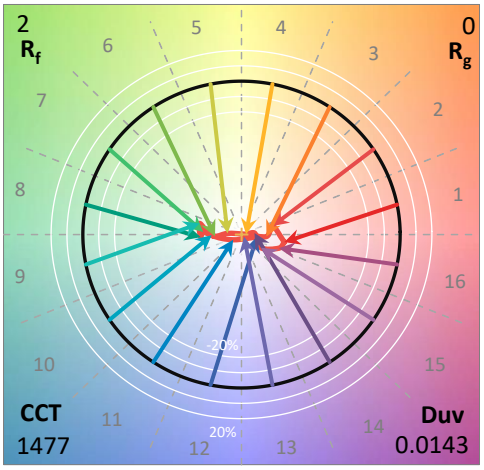
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2501-332-6 |
| 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-AMB-U-FR-T5** |
| Description: | FAIRFAX ACORN W/ FAIRFAX REFRACTOR AMBER T5 |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 1477 |
| CIE u': | 0.3612 |
| CIE v': | 0.5457 |
| Duv: | 0.0143 |
| CIE x: | 0.5980 |
| CIE y: | 0.4014 |
| CIE z: | 0.0006 |
| Peak Wavelength (nm): | 599 |
| Dominant Wavelength (nm): | 594 |
| Purity: | 99.99006 |
| Rf: | 1.7 |
| Rg: | 0.1 |

| | |
|---|---|
| CRI (Ra): | -16.4 |
| R1: | -26.9 |
| R2: | 55.7 |
| R3: | 19.5 |
| R4: | -61.2 |
| R5: | -34.3 |
| R6: | 47.8 |
| R7: | -4.8 |
| R8: | -127.3 |
| R9: | -362.0 |
| R10: | 34.1 |
| R11: | -85.9 |
| R12: | -0.3 |
| R13: | -8.9 |
| R14: | 48.3 |
| R15: | -60.0 |




## Test Conditions

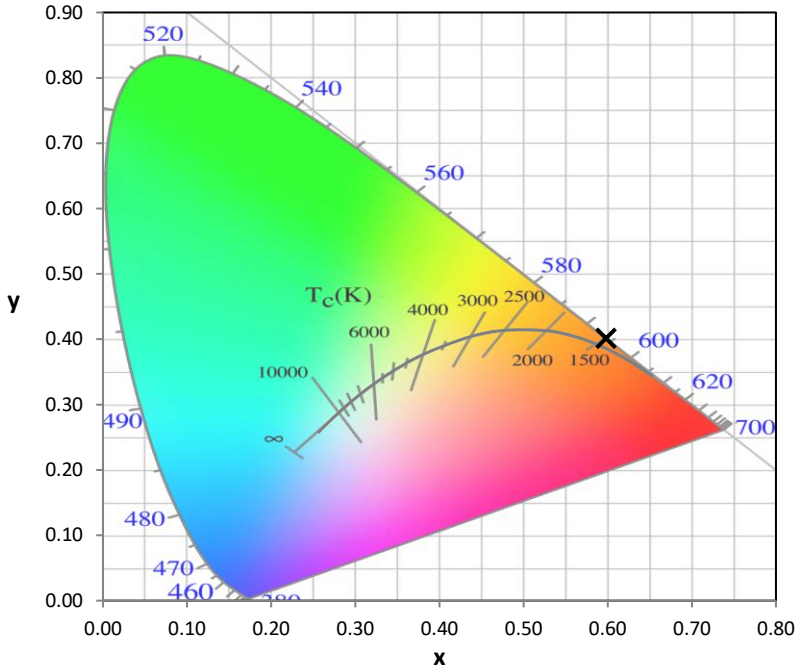
| | |
|---|---|
| Stabilization Time: | 152M |
| Operation Time: | 3H 32M |
| Sphere Temperature (°C): | 24.9 |

REPORT NUMBER: SP1-2501-332-6

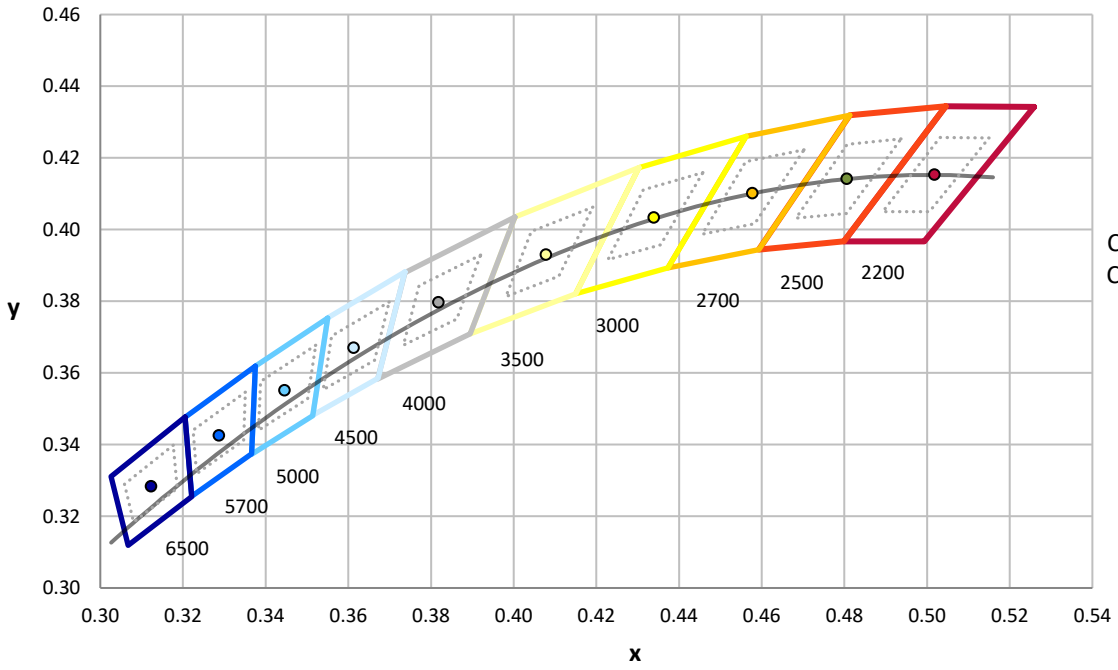
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 12/16/2024 | 6/16/2025 |
| Power Meter | INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | IN0063 | 10/22/2024 | 10/22/2025 |
| DC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

## CIE 1931 Chromaticity Diagram




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

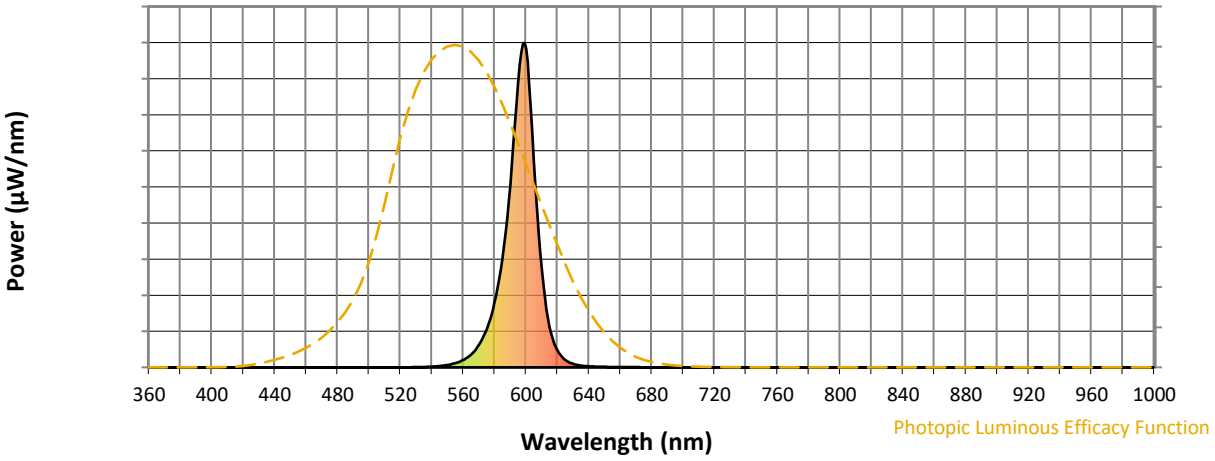



CCT = 1477K
CIE x = 0.5980
CIE y = 0.4014
Duv = 0.0143

Point lies outside the range

REPORT NUMBER: SP1-2501-332-6

## 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 | 0 | NR | 620 | 52 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 23 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 11 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 5 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 0 | NR | 650 | 2 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 0 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 1 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 2 | NR | 670 | 1 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 13 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 23 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 40 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 69 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 118 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 201 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 337 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 566 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 880 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 982 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 633 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 302 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 123 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

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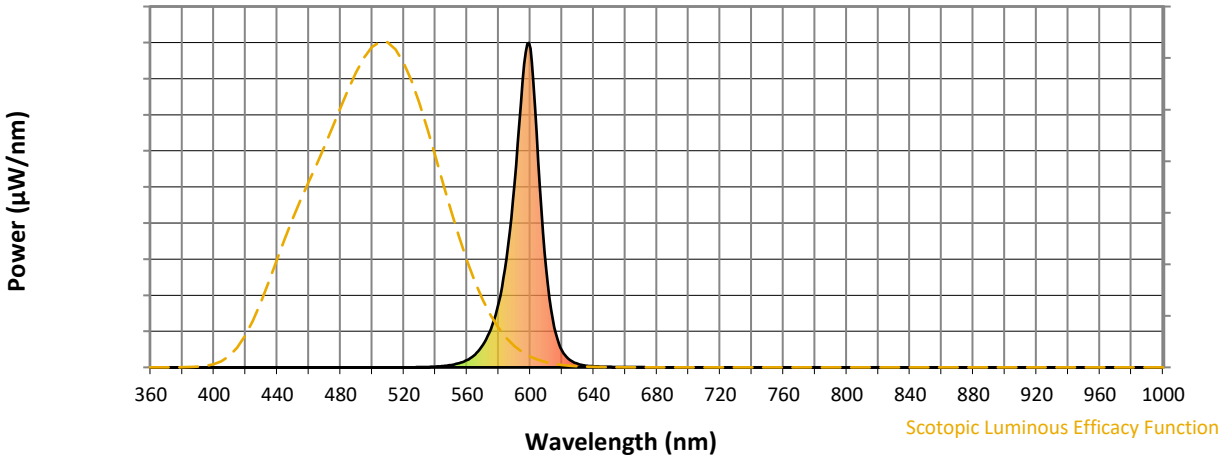
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 0.21**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 0 | NR | 620 | 52 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 23 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 11 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 5 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 0 | NR | 650 | 2 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 0 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 1 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 2 | NR | 670 | 1 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 13 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 23 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 40 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 69 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 118 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 201 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 337 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 566 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 880 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 982 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 633 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 302 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 123 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

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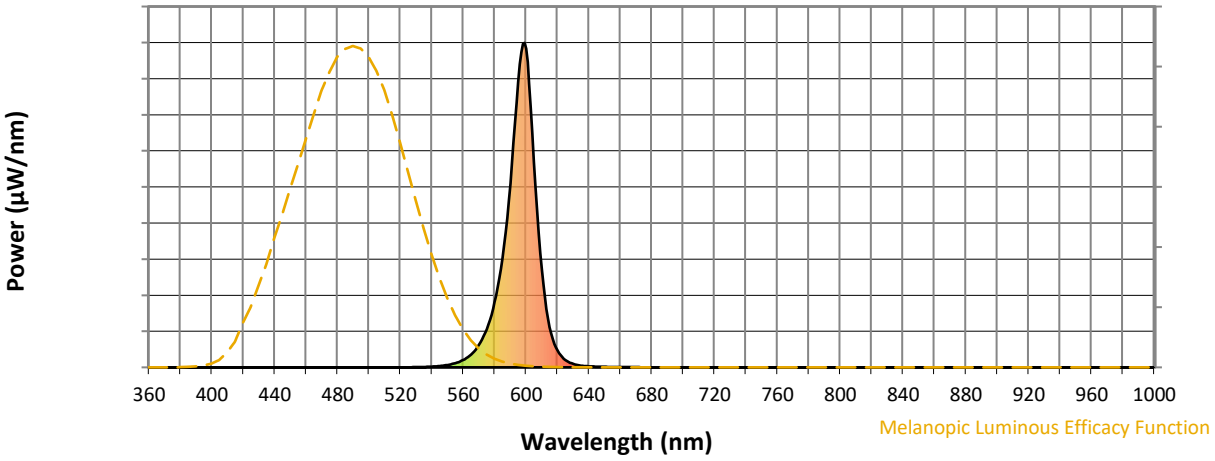
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 0.11**

| 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 | 0 | NR | 620 | 52 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 23 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 11 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 5 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 0 | NR | 650 | 2 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 0 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 1 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 2 | NR | 670 | 1 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 13 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 23 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 40 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 69 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 118 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 201 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 337 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 566 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 880 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 982 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 633 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 302 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 123 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

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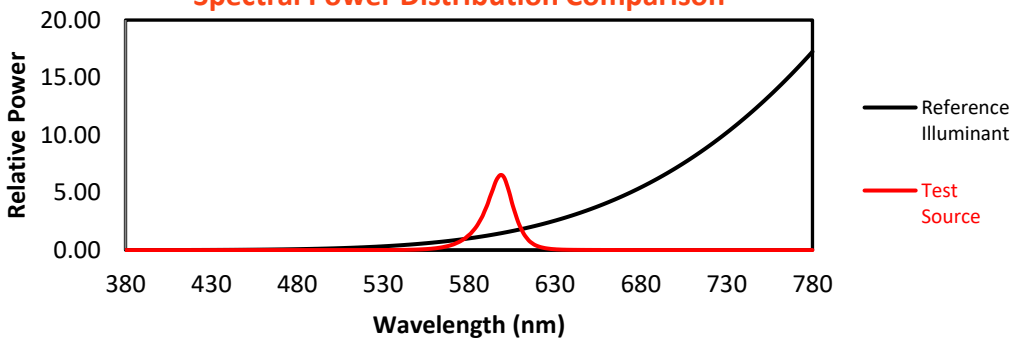
# TM-30-18

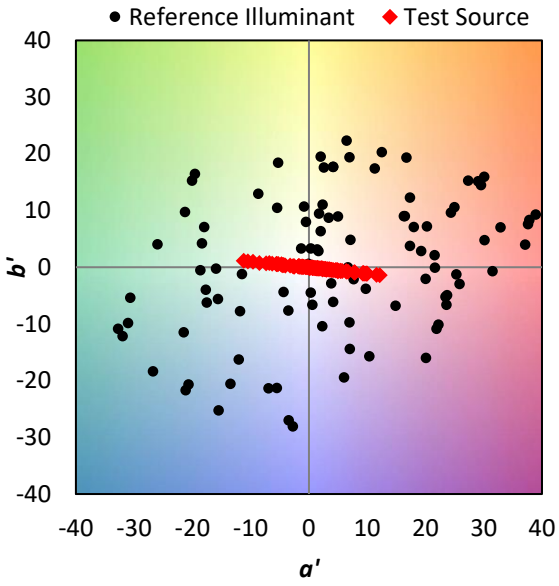
## Summary

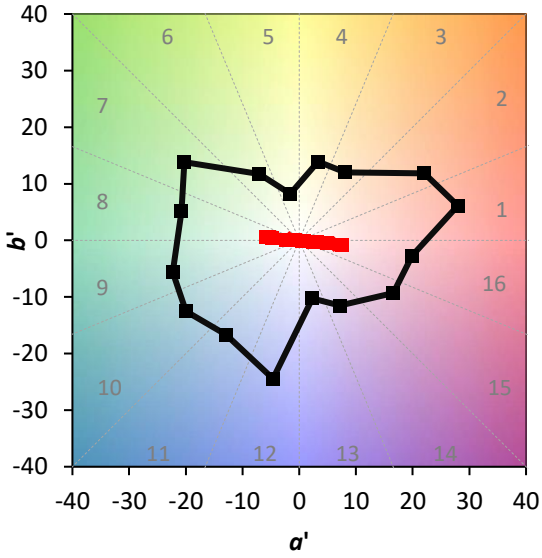
$R_f$ = 1.7
$R_g$ = 0.1
CIE $R_a$ = -16.4
$R_9$ = -362.0

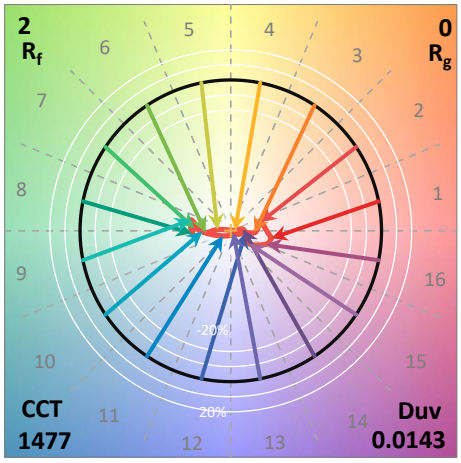
## Spectral Power Distribution Comparison

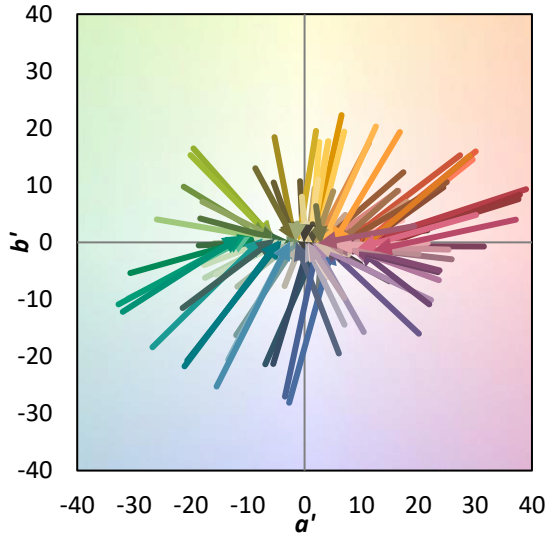



## Color Vector Graphics



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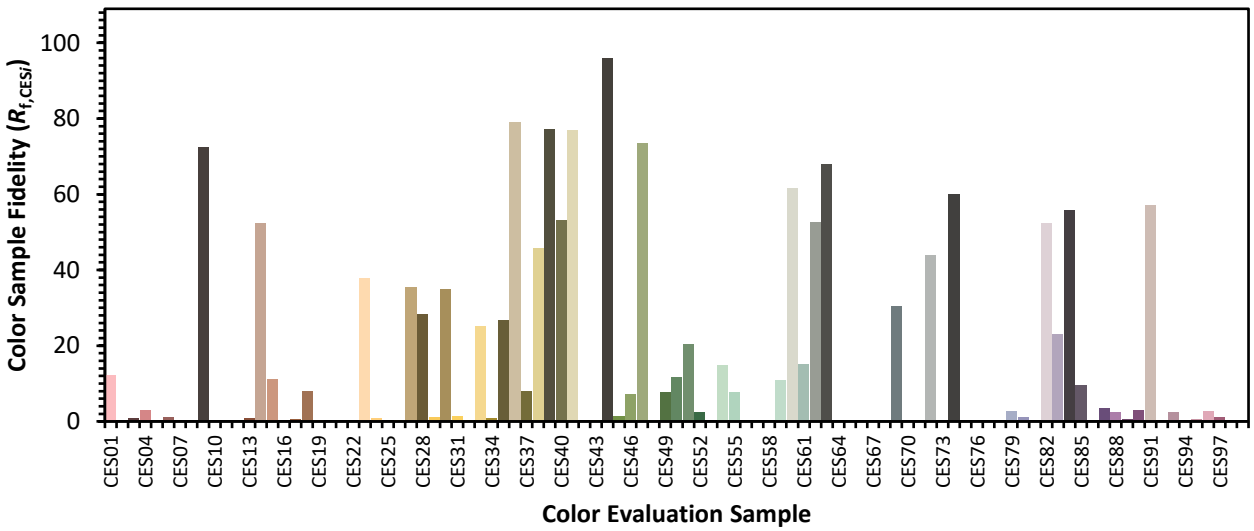
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 90 | CES26 = 0 | CES51 = 20 | CES76 = 0 |
| CES02 = 70 | CES27 = 35 | CES52 = 3 | CES77 = 0 |
| CES03 = 31 | CES28 = 28 | CES53 = 0 | CES78 = 0 |
| CES04 = 77 | CES29 = 1 | CES54 = 15 | CES79 = 3 |
| CES05 = 52 | CES30 = 35 | CES55 = 8 | CES80 = 1 |
| CES06 = 56 | CES31 = 1 | CES56 = 0 | CES81 = 0 |
| CES07 = 42 | CES32 = 0 | CES57 = 0 | CES82 = 52 |
| CES08 = 39 | CES33 = 25 | CES58 = 0 | CES83 = 23 |
| CES09 = 30 | CES34 = 1 | CES59 = 11 | CES84 = 56 |
| CES10 = 88 | CES35 = 27 | CES60 = 62 | CES85 = 10 |
| CES11 = 70 | CES36 = 79 | CES61 = 15 | CES86 = 0 |
| CES12 = 76 | CES37 = 8 | CES62 = 53 | CES87 = 4 |
| CES13 = 48 | CES38 = 46 | CES63 = 68 | CES88 = 2 |
| CES14 = 77 | CES39 = 77 | CES64 = 0 | CES89 = 0 |
| CES15 = 75 | CES40 = 53 | CES65 = 0 | CES90 = 3 |
| CES16 = 50 | CES41 = 77 | CES66 = 0 | CES91 = 57 |
| CES17 = 56 | CES42 = 0 | CES67 = 0 | CES92 = 0 |
| CES18 = 60 | CES43 = 0 | CES68 = 0 | CES93 = 3 |
| CES19 = 80 | CES44 = 96 | CES69 = 30 | CES94 = 0 |
| CES20 = 72 | CES45 = 2 | CES70 = 0 | CES95 = 0 |
| CES21 = 94 | CES46 = 7 | CES71 = 0 | CES96 = 3 |
| CES22 = 87 | CES47 = 73 | CES72 = 44 | CES97 = 1 |
| CES23 = 94 | CES48 = 0 | CES73 = 0 | CES98 = 0 |
| CES24 = 95 | CES49 = 8 | CES74 = 60 | CES99 = 0 |
| CES25 = 79 | CES50 = 12 | CES75 = 0 | |



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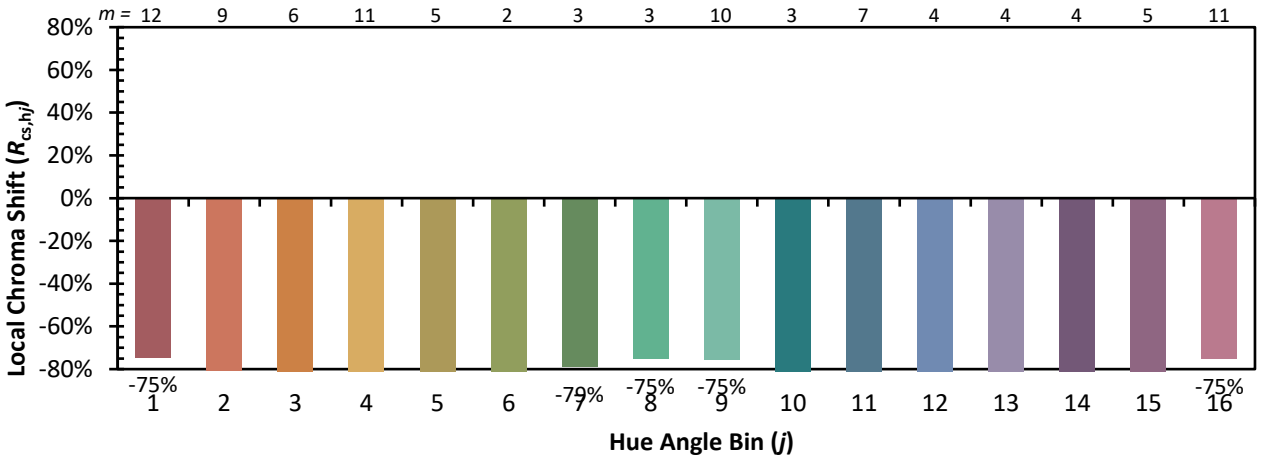
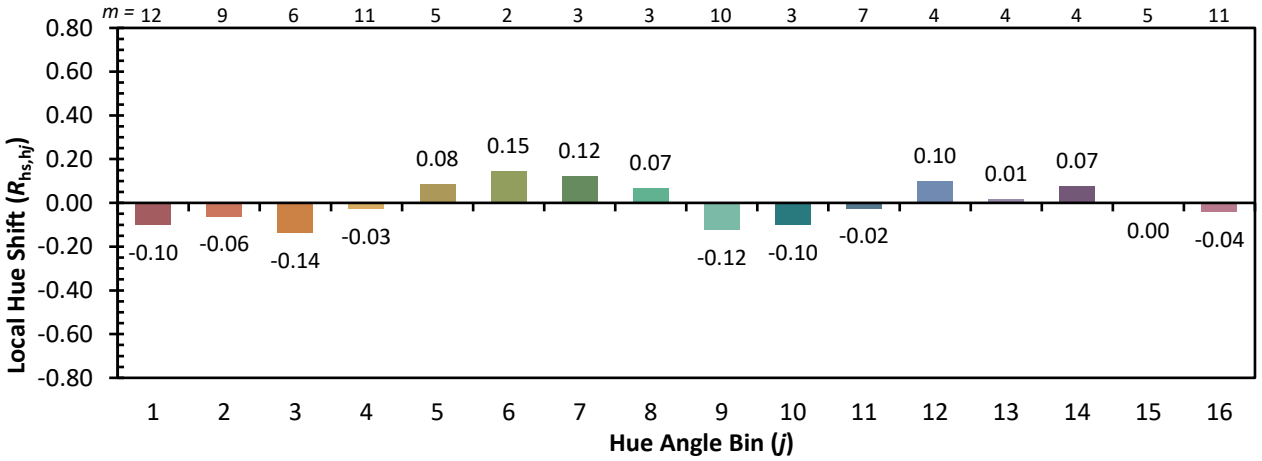
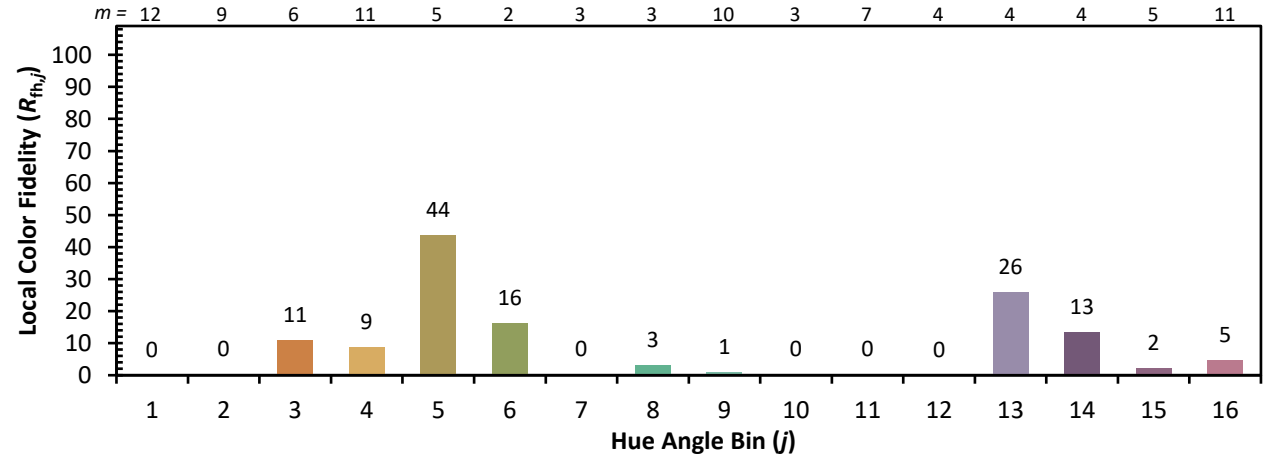
# TM-30-18

## Color Rendition by Hue-Angle Bin



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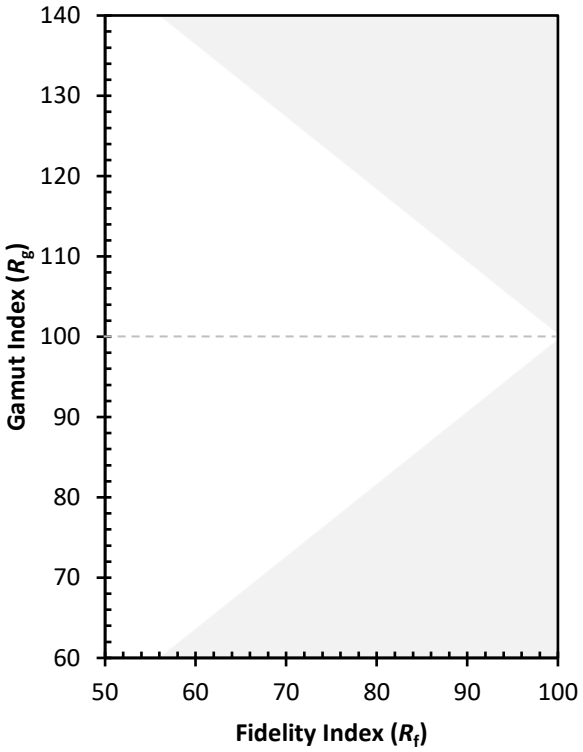
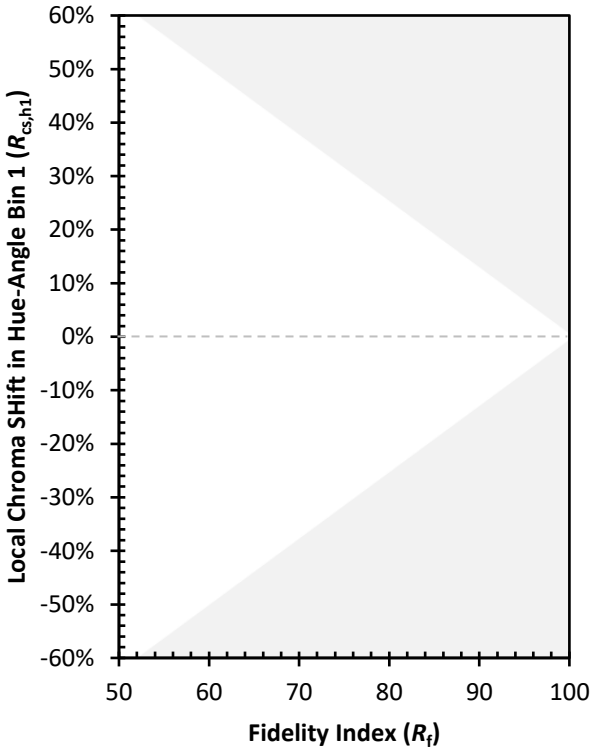
## Measure Comparisons




(END OF REPORT)