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: LUMARK

Report Number: P980950

Luminaire Tested: **NFFLD-L-C125-7027-66**

Issue Date: 04/10/2025

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: | P980950 |
| Test Lab: | INNOVATION CENTER(G2) |
| Issue Date: | 04/10/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | LUMARK |
| Catalog Number: | NFFLD-L-C125-7027-66 |
| Description: | LUMARK NIGHT FALCON LARGE SIZE 270W 70CRI 2700K LED FIXTURE NEMA 6 |
| Light Source: | (4) 2700K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 39802.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 145.6 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.67' x H: 0') |
| IES Classification: | Type I - Short |
| BUG Rating: | B5 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 273.3 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.99 |
| Total Harmonic Distortion (THDi): | 3.49% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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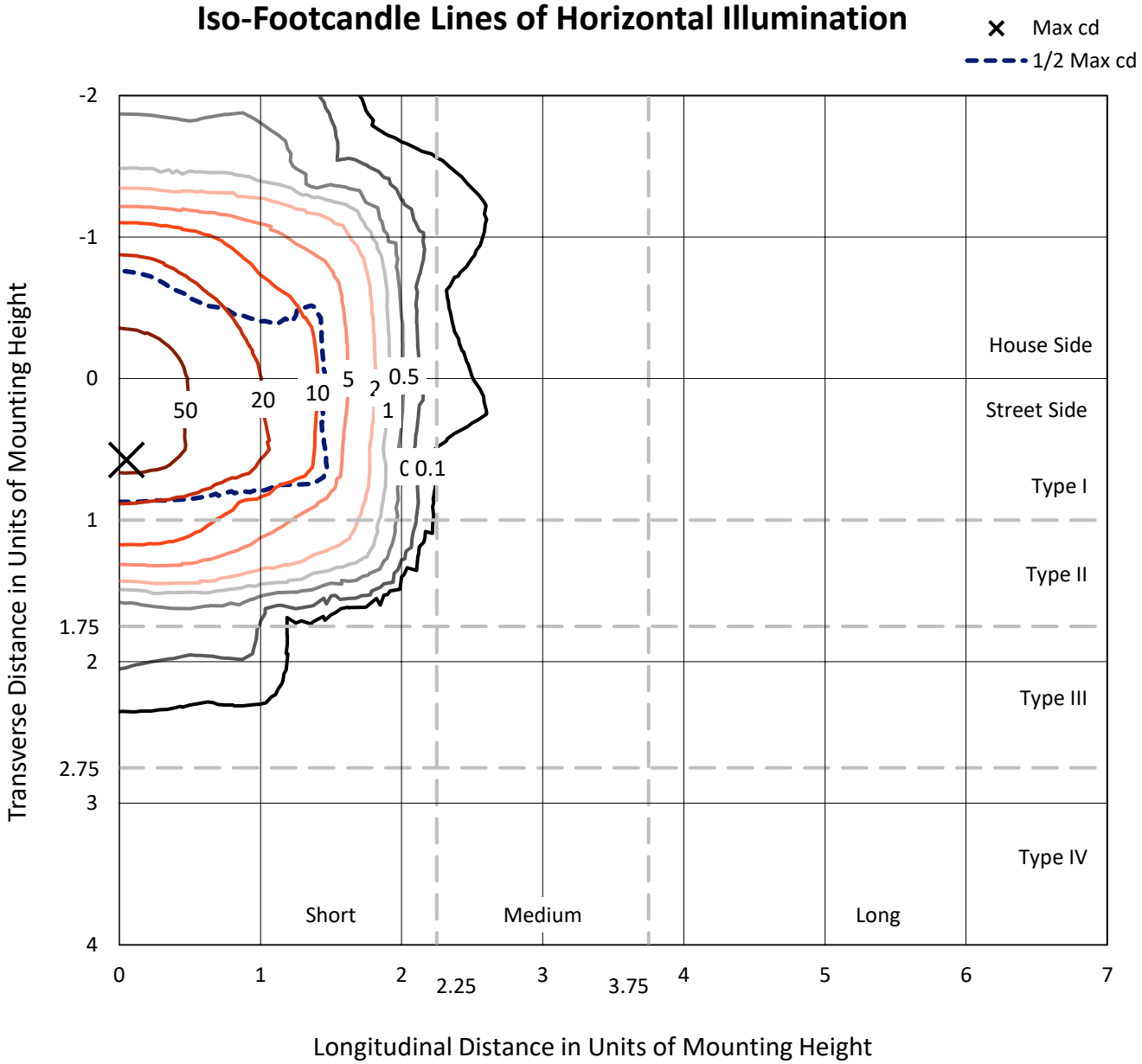
Scaled Data Report

REPORT NUMBER: P980950
CATALOG NUMBER: NFFLD-L-C125-7027-66

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 74 fc
Type I - Short - N/A

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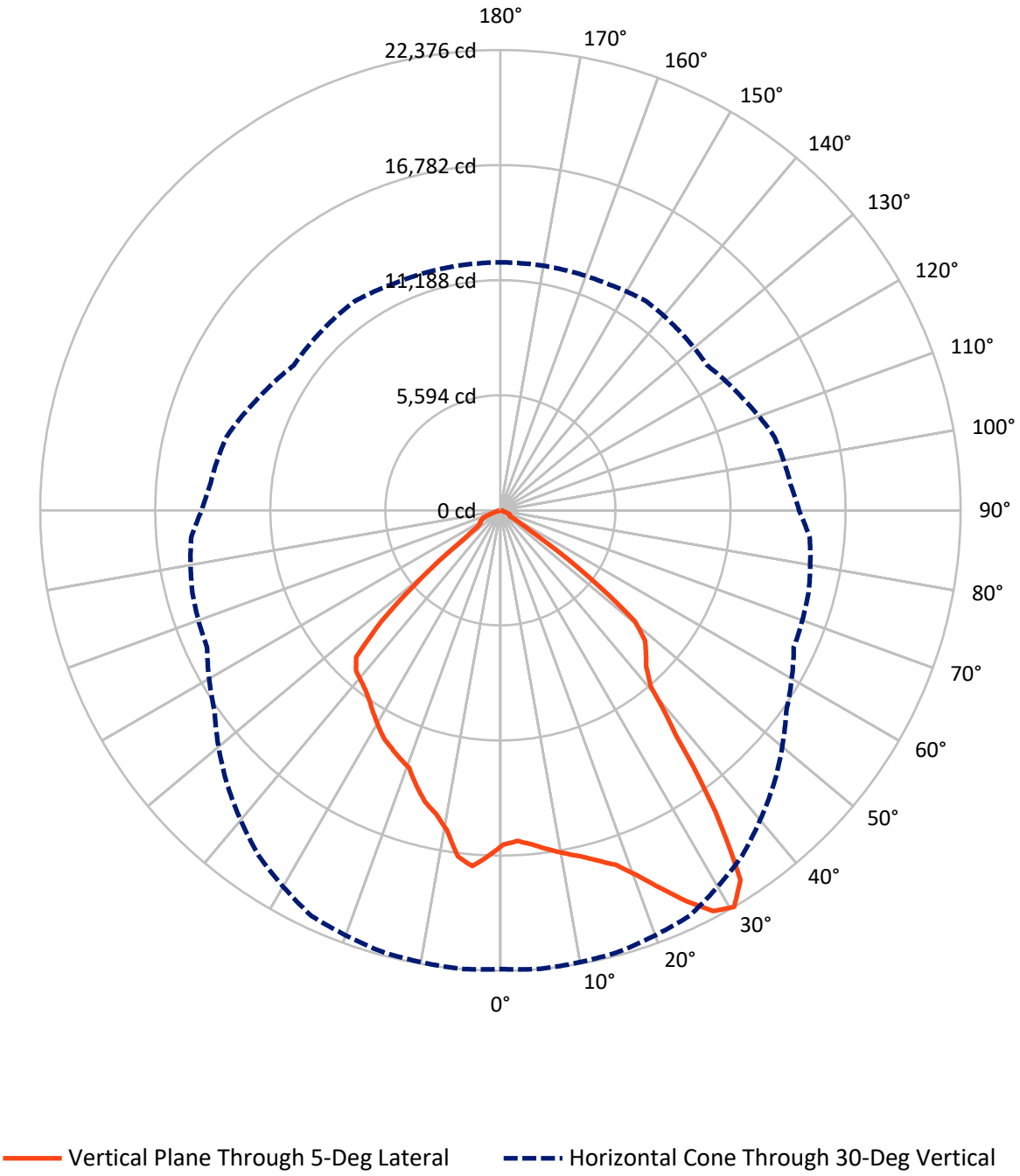
CATALOG NUMBER: NFFLD-L-C125-7027-66

## Luminous Intensity Polar Plot



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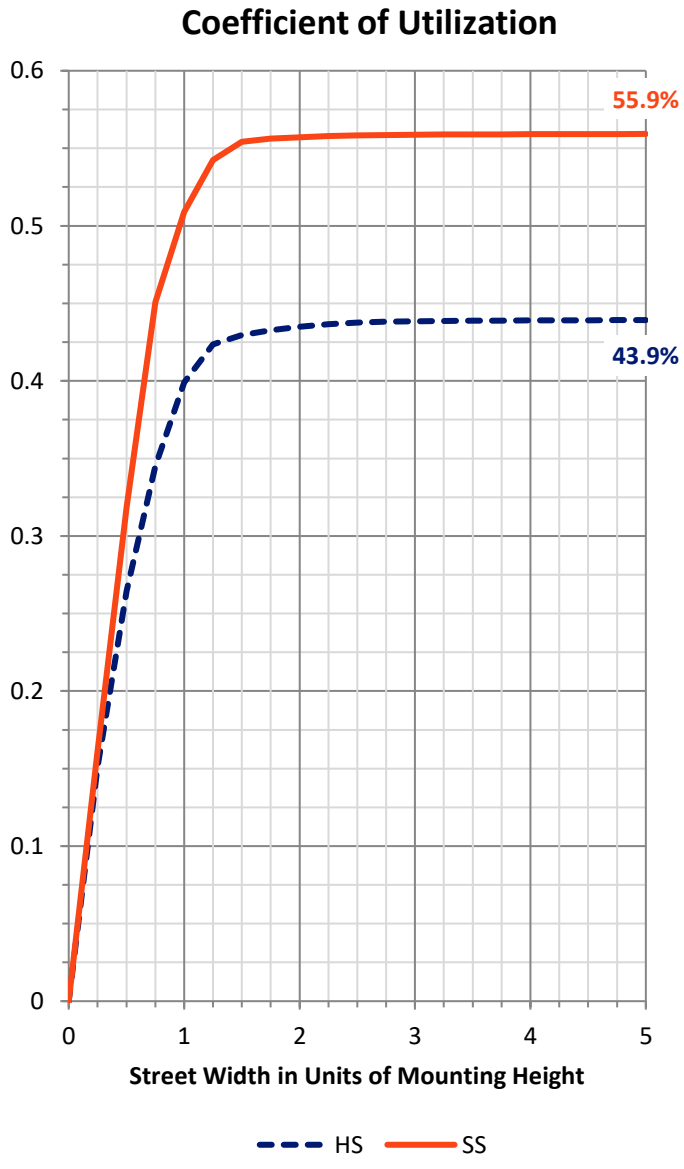
REPORT NUMBER: P980950
CATALOG NUMBER: NFFLD-L-C125-7027-66

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 17604.3 | 0.0 | 17604.3 |
| | % Fixture | 44.2 | 0.0 | 44.2 |
| **Street Side** | Lumens | 22198.3 | 0.0 | 22198.3 |
| | % Fixture | 55.8 | 0.0 | 55.8 |
| **Total** | Lumens | 39802.6 | 0.0 | 39802.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 1589.2 | 4.0 |
| 10°-20° | 4603.8 | 11.6 |
| 20°-30° | 7336.5 | 18.4 |
| 30°-40° | 9171.8 | 23.0 |
| 40°-50° | 9000.7 | 22.6 |
| 50°-60° | 6434.9 | 16.2 |
| 60°-70° | 1423.7 | 3.6 |
| 70°-80° | 218.7 | 0.5 |
| 80°-90° | 23.1 | 0.1 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 39802.6 | 100.0 |
| 0°-180° | 39802.6 | 100.0 |



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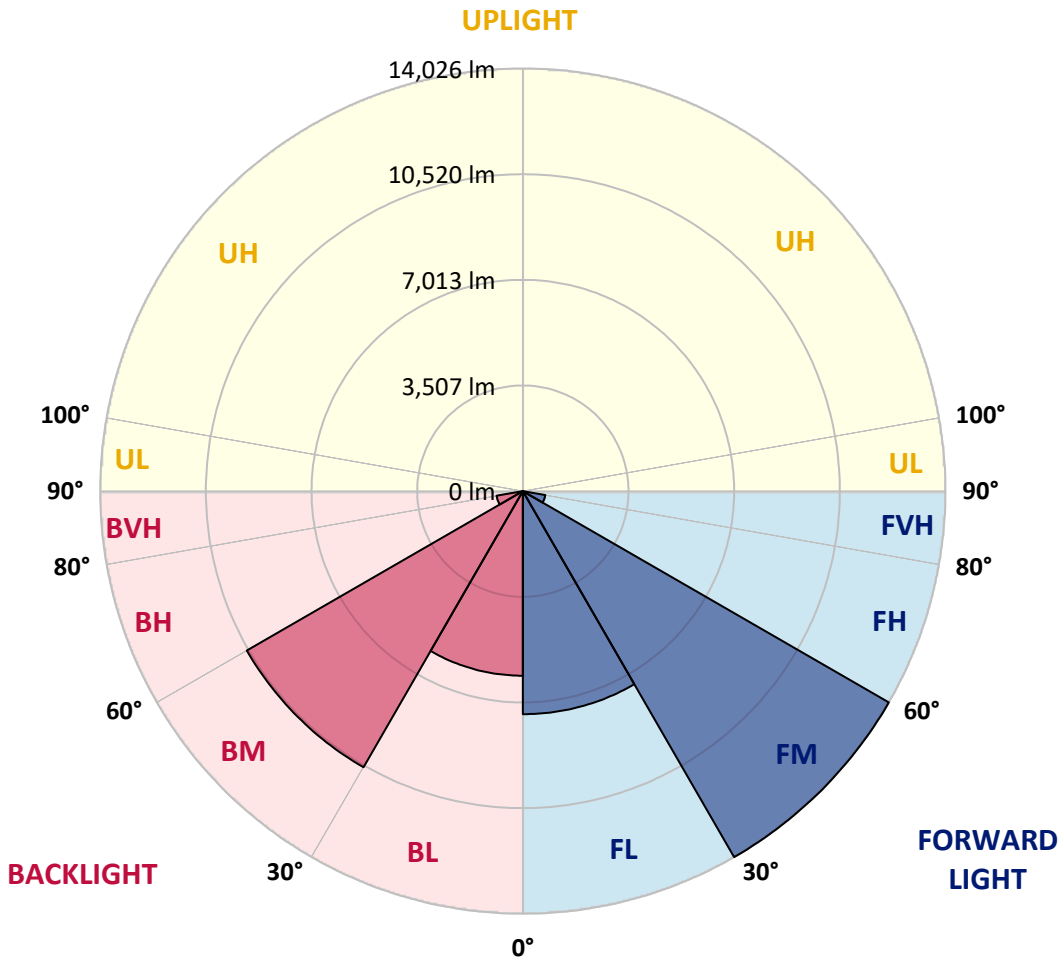
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 7402.9 | 18.6 | | | |
| FM | (30°-60°) | 14026.4 | 35.2 | | | |
| FH | (60°-80°) | 757.3 | 1.9 | | | G1/1800 |
| FVH | (80°-90°) | 11.7 | 0.0 | | | G1/100 |
| BL | (0°-30°) | 6126.6 | 15.4 | B5 | | |
| BM | (30°-60°) | 10581.0 | 26.6 | B5 | | |
| BH | (60°-80°) | 885.2 | 2.2 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 11.4 | 0.0 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B5-U0-G2**
Type I Short



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REPORT NUMBER: P980950
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 |
| 2.5° | 16064.2 | 16090.2 | 16116.2 | 16155.1 | 16207.1 | 16233.0 | 16207.1 | 16181.1 | 16168.1 | 16194.1 | 16207.1 |
| 5° | 16285.0 | 16323.9 | 16336.9 | 16362.9 | 16388.9 | 16362.9 | 16349.9 | 16323.9 | 16311.0 | 16323.9 | 16362.9 |
| 7.5° | 16609.6 | 16635.6 | 16622.6 | 16609.6 | 16596.7 | 16505.7 | 16414.8 | 16375.9 | 16375.9 | 16414.8 | 16518.7 |
| 10° | 16895.3 | 16947.3 | 16882.4 | 16830.4 | 16739.5 | 16596.7 | 16440.8 | 16349.9 | 16375.9 | 16453.8 | 16583.7 |
| 12.5° | 17259.0 | 17259.0 | 17194.0 | 17142.1 | 16934.3 | 16765.5 | 16557.7 | 16414.8 | 16414.8 | 16557.7 | 16700.5 |
| 15° | 17700.5 | 17661.5 | 17635.6 | 17492.7 | 17246.0 | 16973.3 | 16713.5 | 16505.7 | 16466.8 | 16687.6 | 16778.5 |
| 17.5° | 18258.9 | 18116.1 | 18051.1 | 17804.4 | 17466.7 | 17116.1 | 16765.5 | 16596.7 | 16479.8 | 16713.5 | 16609.6 |
| 20° | 19025.1 | 18921.2 | 18713.4 | 18323.8 | 17635.6 | 17181.0 | 16765.5 | 16544.7 | 16453.8 | 16583.7 | 16479.8 |
| 22.5° | 20012.1 | 19947.2 | 19479.6 | 18986.2 | 18077.1 | 17233.0 | 16700.5 | 16401.9 | 16375.9 | 16311.0 | 16090.2 |
| 25° | 21219.8 | 21051.0 | 20570.5 | 19869.2 | 18739.4 | 17739.5 | 16687.6 | 16142.1 | 16051.2 | 15882.4 | 15492.8 |
| 27.5° | 22245.8 | 22063.9 | 21479.6 | 20856.2 | 19648.5 | 18492.7 | 16791.5 | 15830.5 | 15726.6 | 15609.7 | 15129.2 |
| 30° | 22297.7 | 22375.6 | 22219.8 | 21752.3 | 20492.6 | 18804.3 | 16973.3 | 15739.6 | 15505.8 | 15090.2 | 14518.8 |
| 32.5° | 21245.8 | 21427.6 | 21804.2 | 21973.0 | 21128.9 | 19181.0 | 17129.1 | 15778.5 | 15350.0 | 14350.0 | 13882.5 |
| 35° | 17648.6 | 18012.2 | 19557.6 | 21012.0 | 21310.7 | 19726.4 | 17259.0 | 15778.5 | 15298.0 | 13817.6 | 13453.9 |
| 37.5° | 13557.8 | 13856.5 | 15168.1 | 17804.4 | 20505.6 | 20064.0 | 17544.7 | 15687.6 | 15233.1 | 13856.5 | 13363.0 |
| 40° | 11077.4 | 11246.2 | 11817.6 | 13609.8 | 17674.5 | 19505.6 | 17830.4 | 15791.5 | 15038.3 | 13882.5 | 13415.0 |
| 42.5° | 10402.1 | 10389.1 | 10272.3 | 10934.6 | 13479.9 | 17869.3 | 18025.2 | 16051.2 | 14713.6 | 13713.7 | 13324.1 |
| 45° | 9947.6 | 9921.6 | 9817.7 | 9947.6 | 10661.9 | 14622.7 | 17882.3 | 16518.7 | 14311.0 | 13116.3 | 12856.6 |
| 47.5° | 9454.1 | 9467.1 | 9428.1 | 9480.1 | 9350.2 | 11103.4 | 17077.2 | 16713.5 | 13622.8 | 12116.3 | 12025.4 |
| 50° | 8272.4 | 8467.2 | 8986.6 | 9038.6 | 8700.9 | 8960.6 | 14622.7 | 16622.6 | 13129.3 | 11830.6 | 11752.7 |
| 52.5° | 5142.6 | 5454.3 | 6986.7 | 8285.3 | 8090.5 | 8090.5 | 11155.3 | 16752.5 | 12246.2 | 11726.7 | 11778.7 |
| 55° | 1818.1 | 2051.9 | 3740.1 | 5701.0 | 7246.4 | 7389.3 | 8817.8 | 14908.4 | 12142.3 | 11908.6 | 11960.5 |
| 57.5° | 454.5 | 558.4 | 1142.8 | 2467.4 | 4882.9 | 6701.0 | 7882.8 | 12311.1 | 9220.4 | 8895.7 | 9025.6 |
| 60° | 532.4 | 519.5 | 714.3 | 792.2 | 1896.0 | 5298.5 | 7103.6 | 8311.3 | 5947.8 | 5571.2 | 5636.1 |
| 62.5° | 571.4 | 532.4 | 558.4 | 701.3 | 311.7 | 2597.3 | 5662.1 | 4947.8 | 2454.4 | 1818.1 | 1922.0 |
| 65° | 506.5 | 480.5 | 441.5 | 649.3 | 220.8 | 480.5 | 3337.5 | 1454.5 | 350.6 | 558.4 | 506.5 |
| 67.5° | 337.6 | 350.6 | 363.6 | 519.5 | 207.8 | 207.8 | 441.5 | 363.6 | 246.7 | 506.5 | 441.5 |
| 70° | 194.8 | 207.8 | 246.7 | 311.7 | 207.8 | 168.8 | 194.8 | 298.7 | 207.8 | 506.5 | 441.5 |
| 72.5° | 116.9 | 116.9 | 116.9 | 129.9 | 207.8 | 142.9 | 129.9 | 246.7 | 181.8 | 467.5 | 441.5 |
| 75° | 90.9 | 90.9 | 90.9 | 77.9 | 181.8 | 90.9 | 90.9 | 194.8 | 155.8 | 337.6 | 337.6 |
| 77.5° | 77.9 | 77.9 | 77.9 | 64.9 | 103.9 | 77.9 | 77.9 | 142.9 | 142.9 | 168.8 | 194.8 |
| 80° | 51.9 | 51.9 | 51.9 | 51.9 | 64.9 | 64.9 | 51.9 | 77.9 | 64.9 | 77.9 | 90.9 |
| 82.5° | 26.0 | 39.0 | 39.0 | 26.0 | 39.0 | 39.0 | 39.0 | 51.9 | 39.0 | 51.9 | 51.9 |
| 85° | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 26.0 | 13.0 | 13.0 | 26.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

REPORT NUMBER: P980950
CATALOG NUMBER: NFFLD-L-C125-7027-66

**CANDELA DISTRIBUTION (continued):**

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 | 16246.0 |
| 2.5° | 16233.0 | 16298.0 | 16388.9 | 16531.7 | 16583.7 | 16674.6 | 16752.5 | 16817.4 | 16817.4 | 16791.5 |
| 5° | 16440.8 | 16622.6 | 16869.4 | 17090.1 | 17168.1 | 17259.0 | 17297.9 | 17362.9 | 17349.9 | 17336.9 |
| 7.5° | 16622.6 | 16908.3 | 17168.1 | 17323.9 | 17297.9 | 17181.0 | 17103.1 | 16999.2 | 16960.3 | 16986.2 |
| 10° | 16765.5 | 17025.2 | 17142.1 | 17038.2 | 16726.5 | 16453.8 | 16103.2 | 15869.4 | 15752.5 | 15791.5 |
| 12.5° | 16817.4 | 16908.3 | 16804.4 | 16233.0 | 15843.4 | 15583.7 | 15298.0 | 15142.2 | 15077.2 | 15090.2 |
| 15° | 16830.4 | 16622.6 | 16051.2 | 15622.7 | 15337.0 | 15012.3 | 14778.6 | 14635.7 | 14635.7 | 14648.7 |
| 17.5° | 16557.7 | 16051.2 | 15557.7 | 15233.1 | 14830.5 | 14492.9 | 14363.0 | 14311.0 | 13986.4 | 14038.3 |
| 20° | 16311.0 | 15583.7 | 15311.0 | 14804.5 | 14324.0 | 14103.3 | 13350.0 | 13272.1 | 13285.1 | 13298.1 |
| 22.5° | 15791.5 | 15246.1 | 14999.3 | 14337.0 | 13791.6 | 13181.2 | 13077.3 | 12999.4 | 13012.4 | 13012.4 |
| 25° | 15077.2 | 14765.6 | 14427.9 | 13739.6 | 13077.3 | 12960.5 | 12882.5 | 12778.6 | 12726.7 | 12739.7 |
| 27.5° | 14674.7 | 14285.1 | 13661.7 | 13077.3 | 12648.8 | 12700.7 | 12609.8 | 12454.0 | 12454.0 | 12467.0 |
| 30° | *14168.2* | *13791.6* | *12960.5* | *12272.2* | *12311.1* | *12389.1* | *12168.3* | *12090.4* | *12051.4* | *12051.4* |
| 32.5° | 13544.8 | 13025.4 | 12298.1 | 11648.8 | 11882.6 | 11856.6 | 11583.9 | 11609.9 | 11635.8 | 11609.9 |
| 35° | 13077.3 | 12402.0 | 11791.7 | 11441.0 | 11350.1 | 11246.2 | 11103.4 | 11194.3 | 11233.3 | 11207.3 |
| 37.5° | 12960.5 | 12155.3 | 11519.0 | 11272.2 | 10921.6 | 10726.8 | 10765.7 | 10856.7 | 10908.6 | 10895.6 |
| 40° | 12921.5 | 11908.6 | 11285.2 | 11025.5 | 10558.0 | 10389.1 | 10441.1 | 10622.9 | 10687.8 | 10674.8 |
| 42.5° | 12869.5 | 11739.7 | 11142.4 | 10830.7 | 10181.4 | 10064.5 | 10311.2 | 10480.0 | 10493.0 | 10480.0 |
| 45° | 12596.8 | 11557.9 | 11051.4 | 10428.1 | 9610.0 | 9752.8 | 10064.5 | 10155.4 | 9999.5 | 9934.6 |
| 47.5° | 11960.5 | 11220.3 | 10778.7 | 9934.6 | 9142.4 | 9415.2 | 9454.1 | 8467.2 | 7895.7 | 7765.9 |
| 50° | 11778.7 | 11233.3 | 10467.1 | 9350.2 | 8856.7 | 9129.5 | 7428.2 | 5675.1 | 4960.8 | 4818.0 |
| 52.5° | 11726.7 | 11103.4 | 10583.9 | 8739.9 | 8752.9 | 7701.0 | 4688.1 | 2779.1 | 2233.7 | 2129.8 |
| 55° | 11856.6 | 11674.8 | 10778.7 | 8376.2 | 8142.5 | 5012.8 | 2181.7 | 1311.6 | 1350.6 | 1311.6 |
| 57.5° | 8947.6 | 9765.8 | 11012.5 | 7804.8 | 5947.8 | 2415.5 | 1376.6 | 1272.7 | 1181.8 | 1155.8 |
| 60° | 5584.2 | 6363.3 | 8064.6 | 6714.0 | 3051.8 | 1441.5 | 1402.5 | 1181.8 | 1142.8 | 1129.8 |
| 62.5° | 1844.1 | 2831.0 | 4623.2 | 4415.4 | 844.1 | 1428.5 | 1415.5 | 1051.9 | 1051.9 | 1051.9 |
| 65° | 467.5 | 480.5 | 1272.7 | 1519.4 | 623.3 | 1272.7 | 1350.6 | 987.0 | 961.0 | 1000.0 |
| 67.5° | 402.6 | 363.6 | 675.3 | 597.4 | 519.5 | 883.1 | 1181.8 | 948.0 | 896.1 | 896.1 |
| 70° | 402.6 | 428.6 | 662.3 | 558.4 | 324.7 | 480.5 | 857.1 | 584.4 | 519.5 | 480.5 |
| 72.5° | 376.6 | 415.6 | 584.4 | 506.5 | 220.8 | 233.8 | 376.6 | 194.8 | 181.8 | 155.8 |
| 75° | 324.7 | 337.6 | 454.5 | 454.5 | 233.8 | 116.9 | 155.8 | 129.9 | 129.9 | 116.9 |
| 77.5° | 220.8 | 168.8 | 259.7 | 324.7 | 168.8 | 77.9 | 64.9 | 64.9 | 64.9 | 51.9 |
| 80° | 116.9 | 64.9 | 64.9 | 51.9 | 64.9 | 64.9 | 39.0 | 51.9 | 51.9 | 39.0 |
| 82.5° | 64.9 | 39.0 | 39.0 | 26.0 | 26.0 | 39.0 | 26.0 | 26.0 | 26.0 | 26.0 |
| 85° | 26.0 | 26.0 | 13.0 | 13.0 | 13.0 | 26.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.0 | 13.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2501-319-9

Test Date: 02/05/2025

Luminaire Tested: NFFLD-C55-7027-66

Data in this report applies to families of products including NFFLD-C55-7027-66

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

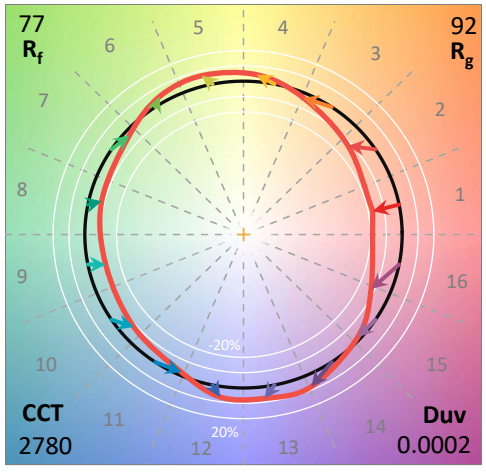
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2501-319-9 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 02/06/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Lumark |
| Catalog Number: | **NFFLD-C55-7027-66** |
| Description: | LUMARK NIGHT FALCON 16900LM NEMA 6 |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 2780 | CRI (Ra): | 72.0 | | |
| CIE u': | 0.2590 | R1: | 68.2 | R9: | -35.8 |
| CIE v': | 0.5260 | R2: | 85.1 | R10: | 68.0 |
| Duv: | 0.0002 | R3: | 93.3 | R11: | 62.3 |
| CIE x: | 0.4536 | R4: | 66.5 | R12: | 62.2 |
| CIE y: | 0.4095 | R5: | 68.5 | R13: | 71.6 |
| CIE z: | 0.1369 | R6: | 81.1 | R14: | 96.6 |
| Peak Wavelength (nm): | 597 | R7: | 74.6 | R15: | 59.0 |
| Dominant Wavelength (nm): | 583 | R8: | 38.9 | | |
| Purity: | 59.08593 | | | | |

| | |
|---|---|
| Rf: | 77.4 |
| Rg: | 92.5 |




## Test Conditions

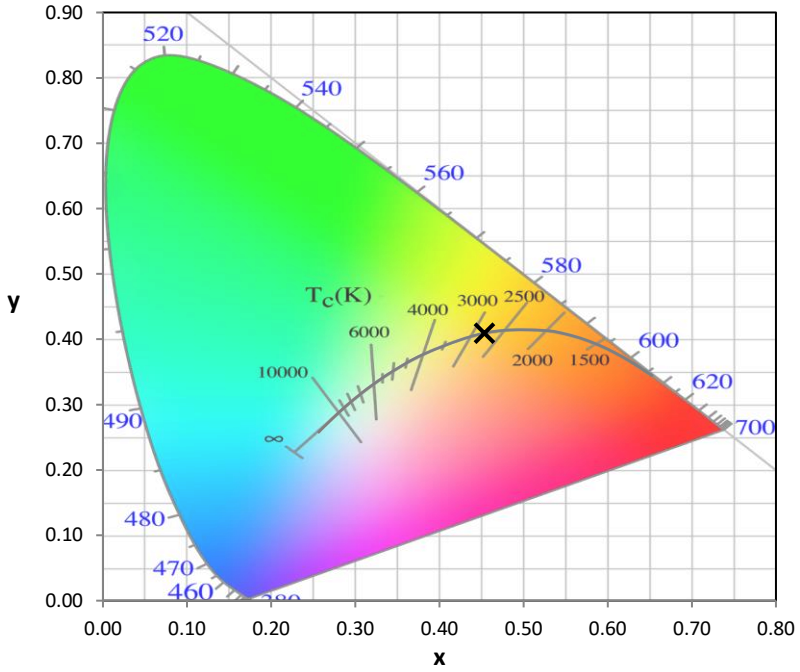
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP1-2501-319-9

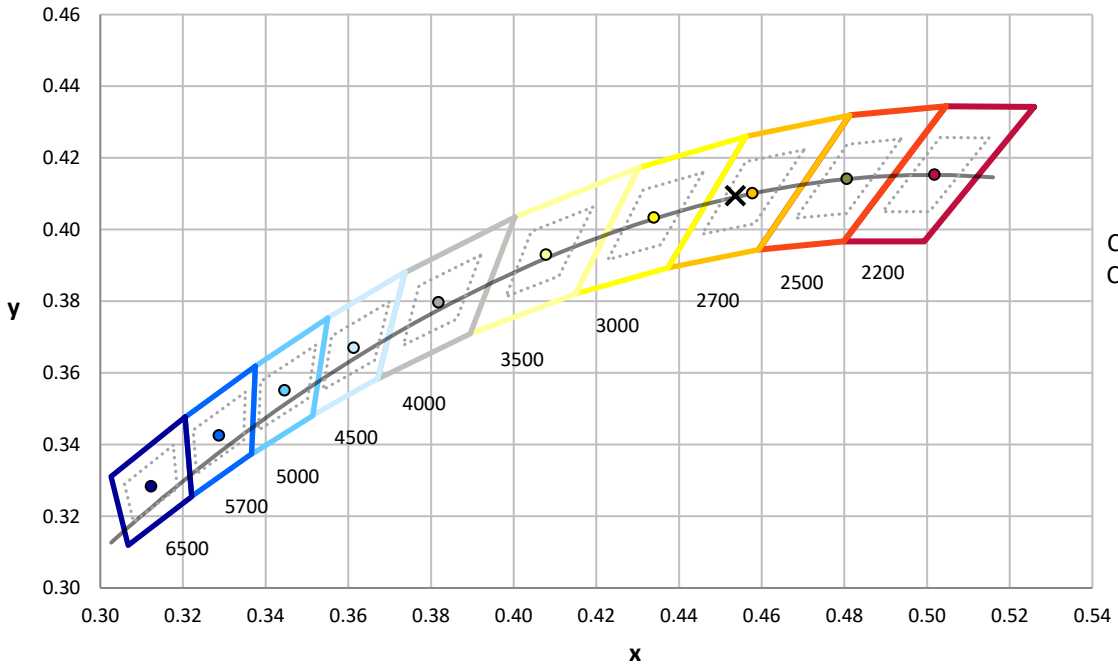
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 12/16/2024 | 6/16/2025 |
| Power Meter | INXT2011004 | 1/212025 | 1/21/2026 |
| AC Power Source | IN0063 | 10/22/2024 | 10/22/2025 |
| DC 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: SP1-2501-319-9

## CIE 1931 Chromaticity Diagram




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




CCT = 2780K
CIE x = 0.4536
CIE y = 0.4095
Duv = 0.0002

Point lies inside the ANSI 2700K 4-step quadrangle

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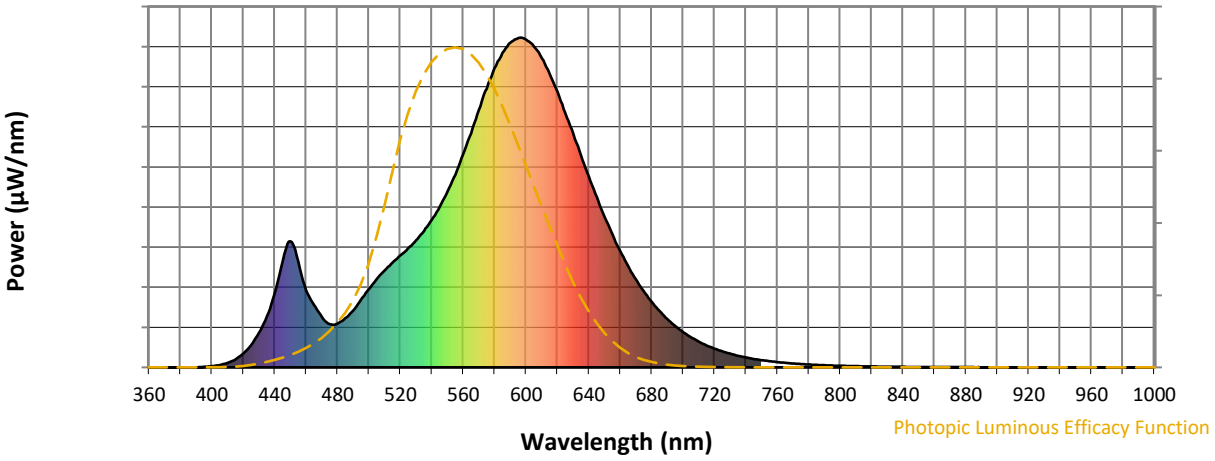
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 173 | NR | 620 | 836 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 205 | NR | 625 | 771 | NR | 755 | 19 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 238 | NR | 630 | 710 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 268 | NR | 635 | 643 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 294 | NR | 640 | 578 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 317 | NR | 645 | 516 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 340 | NR | 650 | 456 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 361 | NR | 655 | 403 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 386 | NR | 660 | 352 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 413 | NR | 665 | 307 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 14 | NR | 540 | 447 | NR | 670 | 266 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 487 | NR | 675 | 230 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 533 | NR | 680 | 199 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 68 | NR | 555 | 585 | NR | 685 | 170 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 104 | NR | 560 | 647 | NR | 690 | 147 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 155 | NR | 565 | 710 | NR | 695 | 125 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 224 | NR | 570 | 780 | NR | 700 | 107 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 322 | NR | 575 | 846 | NR | 705 | 92 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 382 | NR | 580 | 907 | NR | 710 | 78 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 321 | NR | 585 | 954 | NR | 715 | 66 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 234 | NR | 590 | 985 | NR | 720 | 57 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 189 | NR | 595 | 999 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 152 | NR | 600 | 994 | NR | 730 | 41 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 131 | NR | 605 | 973 | NR | 735 | 35 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 133 | NR | 610 | 938 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 150 | NR | 615 | 891 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

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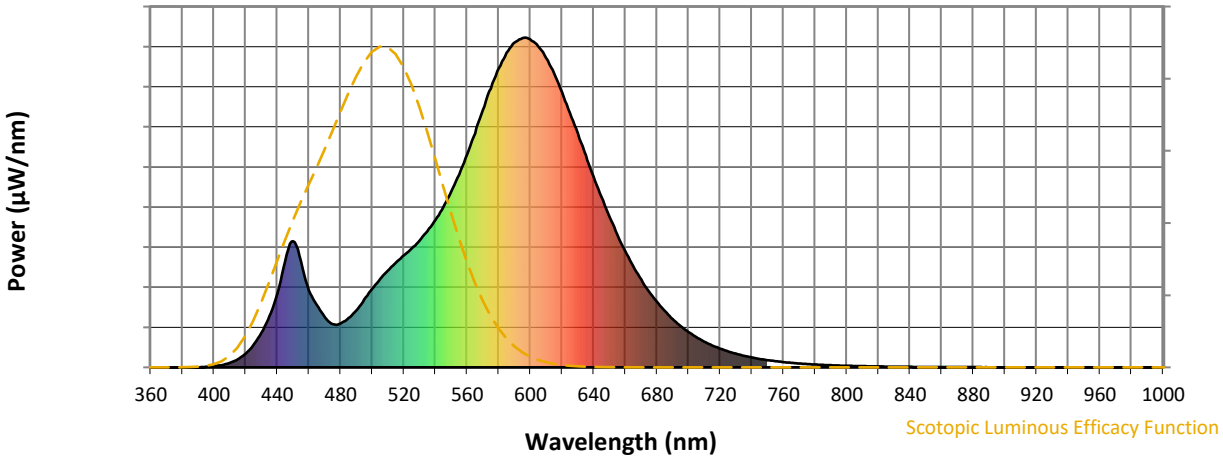
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.17**

| 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 | 173 | NR | 620 | 836 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 205 | NR | 625 | 771 | NR | 755 | 19 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 238 | NR | 630 | 710 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 268 | NR | 635 | 643 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 294 | NR | 640 | 578 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 317 | NR | 645 | 516 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 340 | NR | 650 | 456 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 361 | NR | 655 | 403 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 386 | NR | 660 | 352 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 413 | NR | 665 | 307 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 14 | NR | 540 | 447 | NR | 670 | 266 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 487 | NR | 675 | 230 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 533 | NR | 680 | 199 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 68 | NR | 555 | 585 | NR | 685 | 170 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 104 | NR | 560 | 647 | NR | 690 | 147 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 155 | NR | 565 | 710 | NR | 695 | 125 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 224 | NR | 570 | 780 | NR | 700 | 107 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 322 | NR | 575 | 846 | NR | 705 | 92 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 382 | NR | 580 | 907 | NR | 710 | 78 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 321 | NR | 585 | 954 | NR | 715 | 66 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 234 | NR | 590 | 985 | NR | 720 | 57 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 189 | NR | 595 | 999 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 152 | NR | 600 | 994 | NR | 730 | 41 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 131 | NR | 605 | 973 | NR | 735 | 35 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 133 | NR | 610 | 938 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 150 | NR | 615 | 891 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

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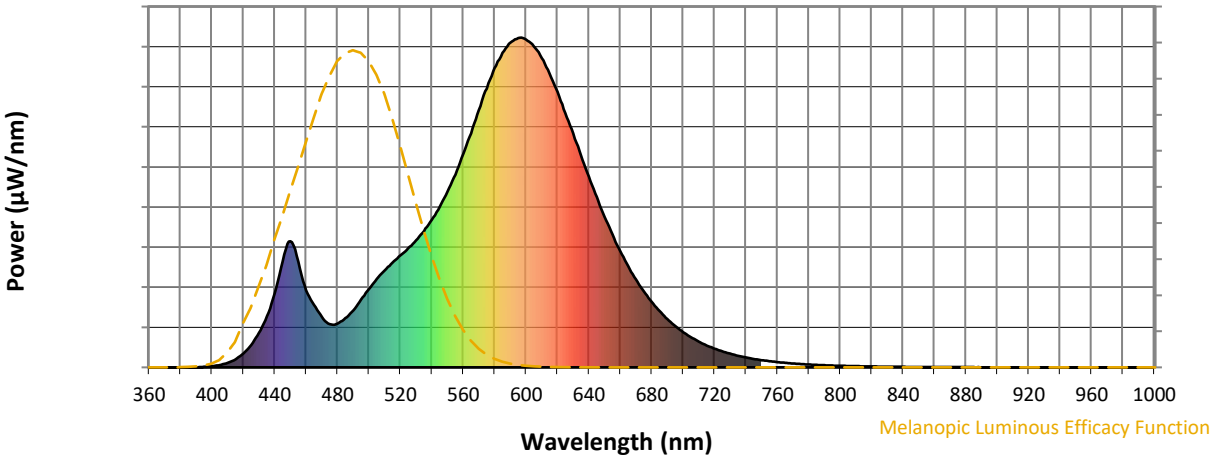
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.15**

| 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 | 173 | NR | 620 | 836 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 205 | NR | 625 | 771 | NR | 755 | 19 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 238 | NR | 630 | 710 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 268 | NR | 635 | 643 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 294 | NR | 640 | 578 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 317 | NR | 645 | 516 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 340 | NR | 650 | 456 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 361 | NR | 655 | 403 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 386 | NR | 660 | 352 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 413 | NR | 665 | 307 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 14 | NR | 540 | 447 | NR | 670 | 266 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 487 | NR | 675 | 230 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 533 | NR | 680 | 199 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 68 | NR | 555 | 585 | NR | 685 | 170 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 104 | NR | 560 | 647 | NR | 690 | 147 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 155 | NR | 565 | 710 | NR | 695 | 125 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 224 | NR | 570 | 780 | NR | 700 | 107 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 322 | NR | 575 | 846 | NR | 705 | 92 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 382 | NR | 580 | 907 | NR | 710 | 78 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 321 | NR | 585 | 954 | NR | 715 | 66 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 234 | NR | 590 | 985 | NR | 720 | 57 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 189 | NR | 595 | 999 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 152 | NR | 600 | 994 | NR | 730 | 41 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 131 | NR | 605 | 973 | NR | 735 | 35 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 133 | NR | 610 | 938 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 150 | NR | 615 | 891 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

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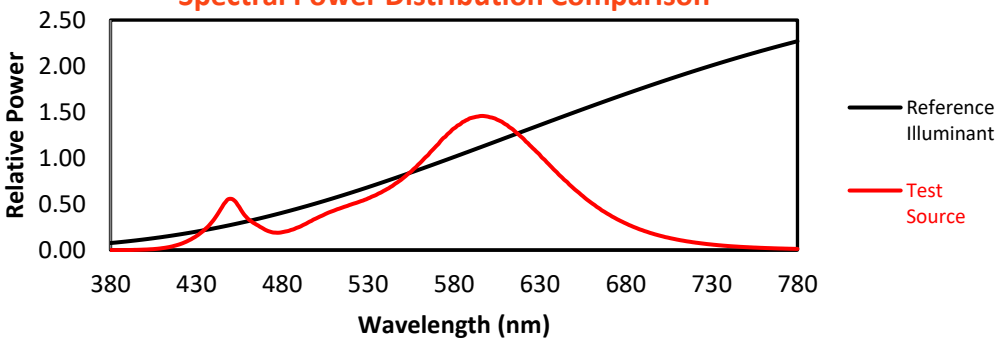
# TM-30-18

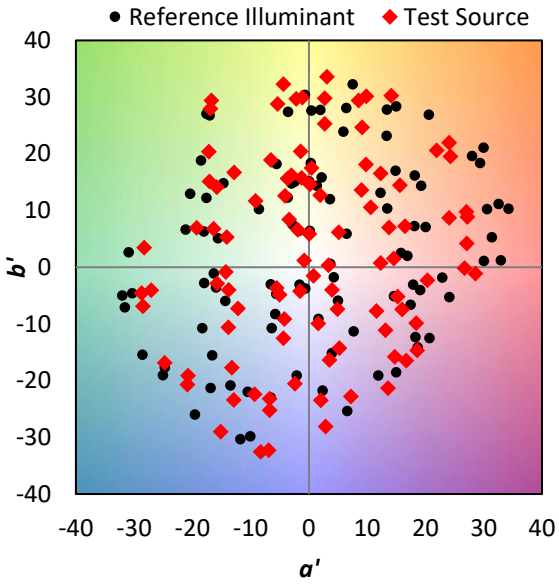
## Summary

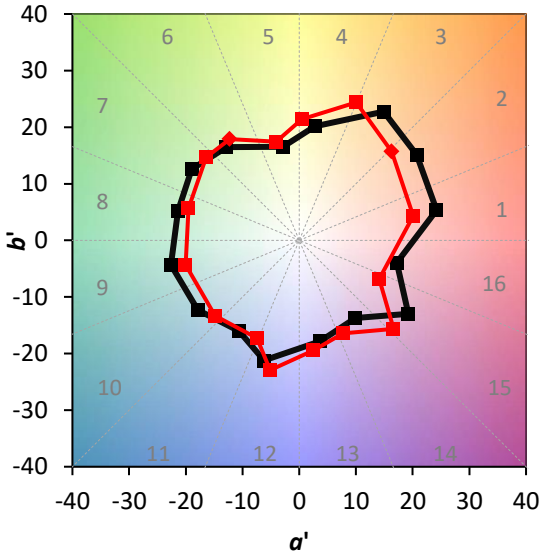
$R_f$ = 77.4
$R_g$ = 92.5
CIE $R_a$ = 72.0
$R_9$ = -35.8

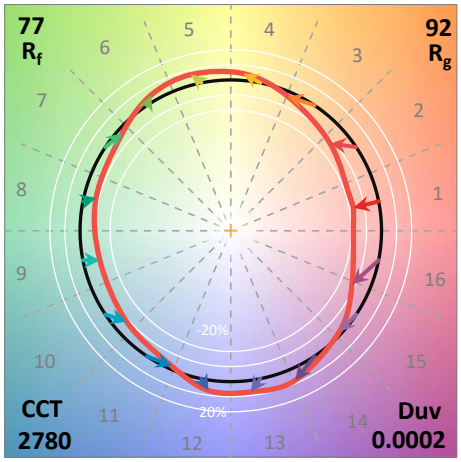
## Spectral Power Distribution Comparison

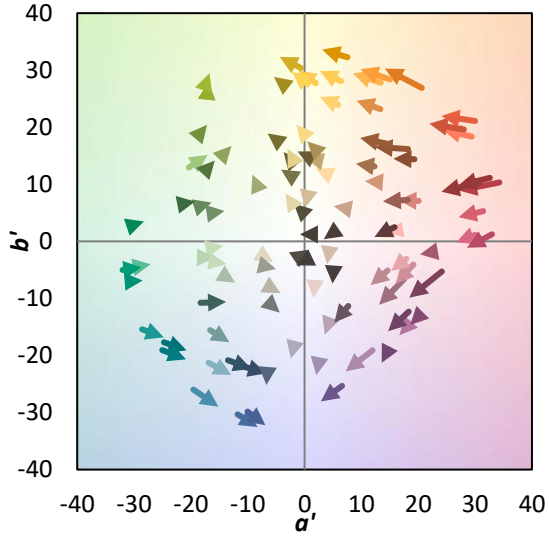



## Color Vector Graphics



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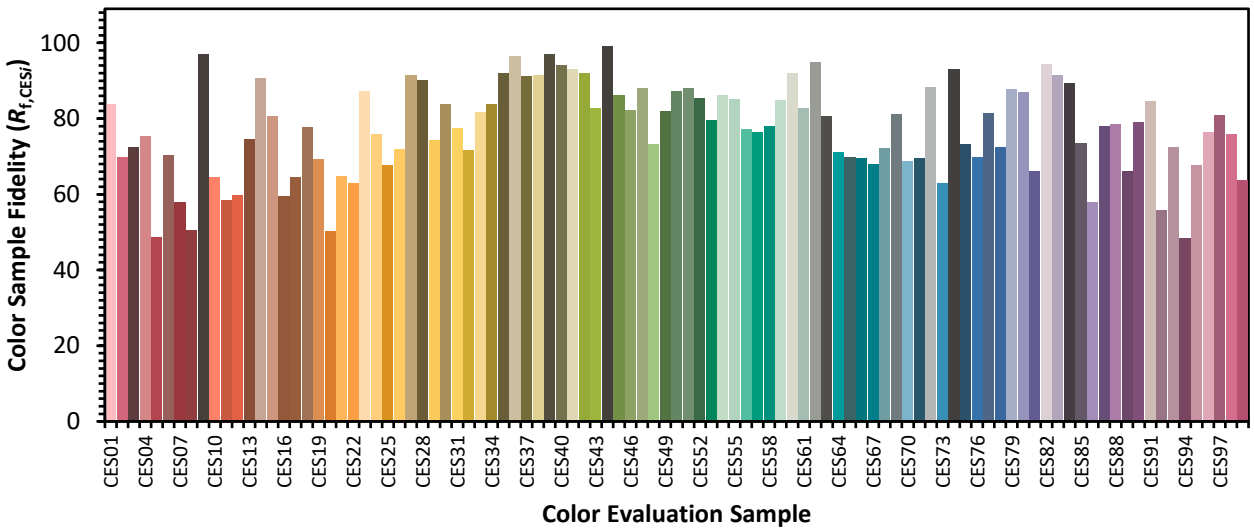
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 72 | CES51 = 88 | CES76 = 70 |
| CES02 = 63 | CES27 = 91 | CES52 = 85 | CES77 = 81 |
| CES03 = 31 | CES28 = 90 | CES53 = 80 | CES78 = 73 |
| CES04 = 71 | CES29 = 74 | CES54 = 86 | CES79 = 88 |
| CES05 = 50 | CES30 = 84 | CES55 = 85 | CES80 = 87 |
| CES06 = 52 | CES31 = 77 | CES56 = 77 | CES81 = 66 |
| CES07 = 42 | CES32 = 72 | CES57 = 76 | CES82 = 95 |
| CES08 = 40 | CES33 = 82 | CES58 = 78 | CES83 = 91 |
| CES09 = 29 | CES34 = 84 | CES59 = 85 | CES84 = 89 |
| CES10 = 77 | CES35 = 92 | CES60 = 92 | CES85 = 74 |
| CES11 = 60 | CES36 = 96 | CES61 = 83 | CES86 = 58 |
| CES12 = 66 | CES37 = 91 | CES62 = 95 | CES87 = 78 |
| CES13 = 43 | CES38 = 92 | CES63 = 81 | CES88 = 78 |
| CES14 = 74 | CES39 = 97 | CES64 = 71 | CES89 = 66 |
| CES15 = 72 | CES40 = 94 | CES65 = 70 | CES90 = 79 |
| CES16 = 47 | CES41 = 93 | CES66 = 70 | CES91 = 85 |
| CES17 = 50 | CES42 = 92 | CES67 = 68 | CES92 = 56 |
| CES18 = 57 | CES43 = 83 | CES68 = 72 | CES93 = 73 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 48 |
| CES20 = 67 | CES45 = 86 | CES70 = 69 | CES95 = 68 |
| CES21 = 87 | CES46 = 82 | CES71 = 70 | CES96 = 77 |
| CES22 = 80 | CES47 = 88 | CES72 = 88 | CES97 = 81 |
| CES23 = 92 | CES48 = 73 | CES73 = 63 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 93 | CES99 = 64 |
| CES25 = 73 | CES50 = 87 | CES75 = 73 | |



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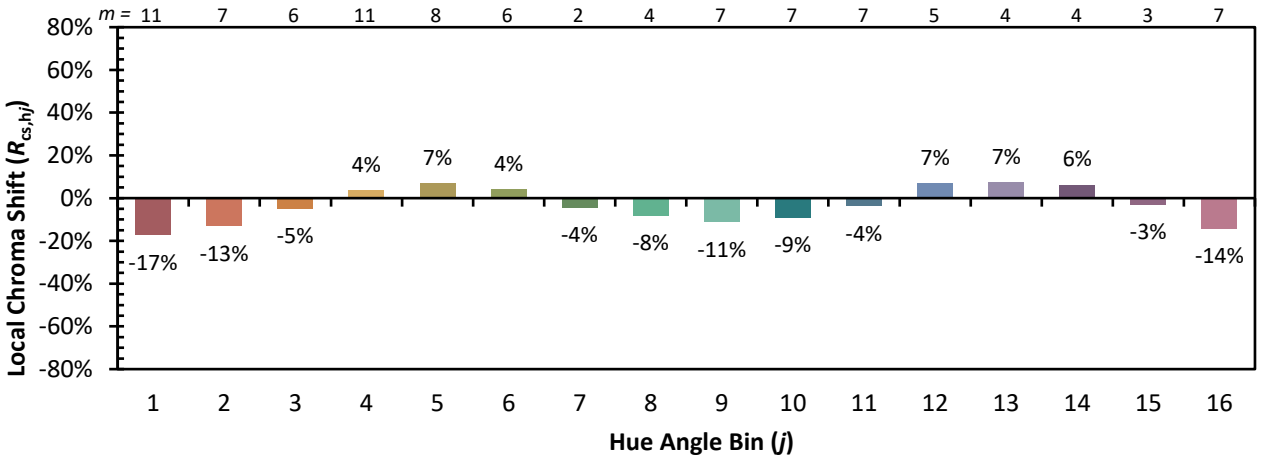
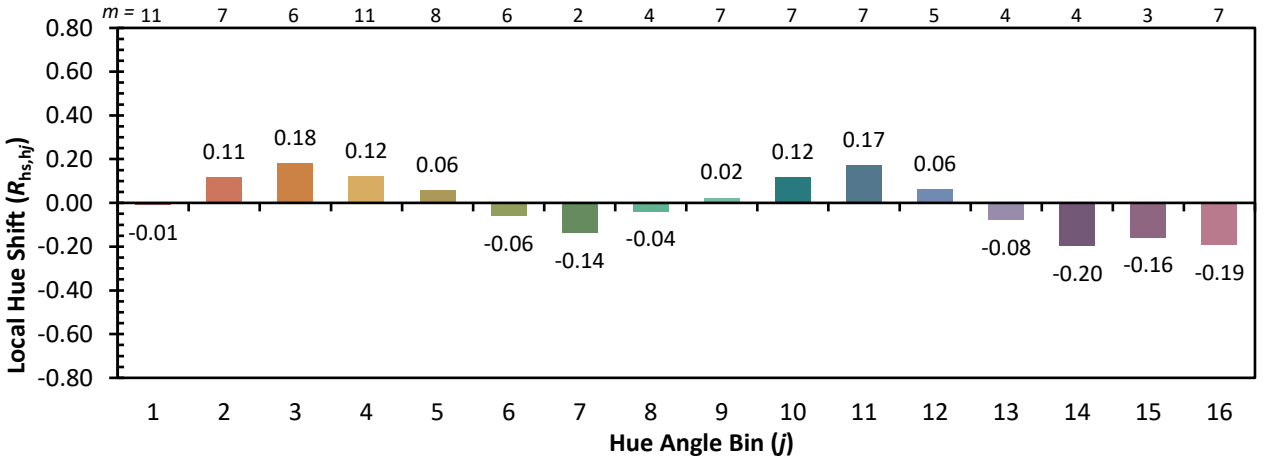
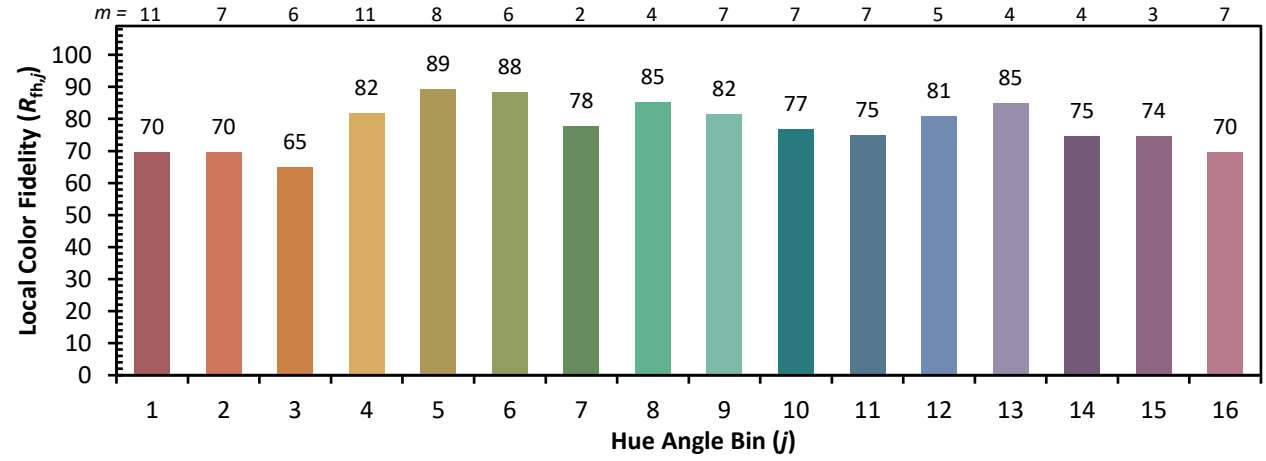
## Color Rendition by Hue-Angle Bin



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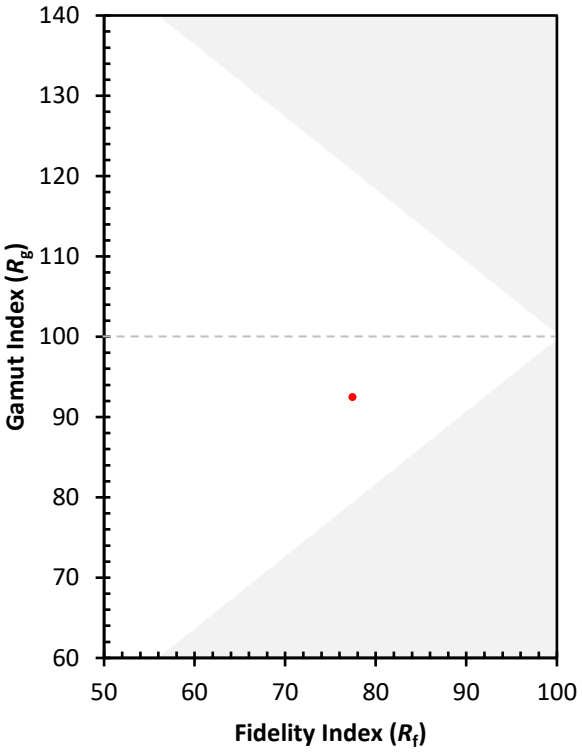
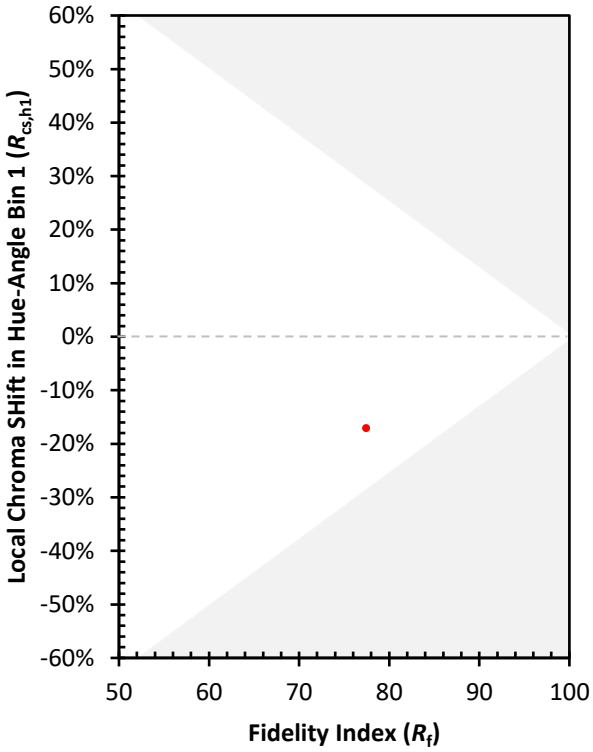
## Measure Comparisons

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