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: P879978

Luminaire Tested: **MEM2-HSN-VA-80-735-U-WQ**

Issue Date: 10/01/2024

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: | P879978 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 10/01/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | STREETWORKS |
| Catalog Number: | MEM2-HSN-VA-80-735-U-WQ |
| Description: | EPIC MODERN SHORT HOUSING 80W 70CRI 3500K VISUAL COMFORT FIXTURE w/ TYPE V WIDE DISTRIBUTION OPTIC |
| Light Source: | (1) 3500K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 7655.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 98.1 lumens/watt |
| Luminous Opening: | Circular (Dia: 1.12' x H: 0') |
| IES Classification: | Type V - Short |
| BUG Rating: | B3 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 78 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.99 |
| Total Harmonic Distortion (THDi): | 6% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 24 FT |

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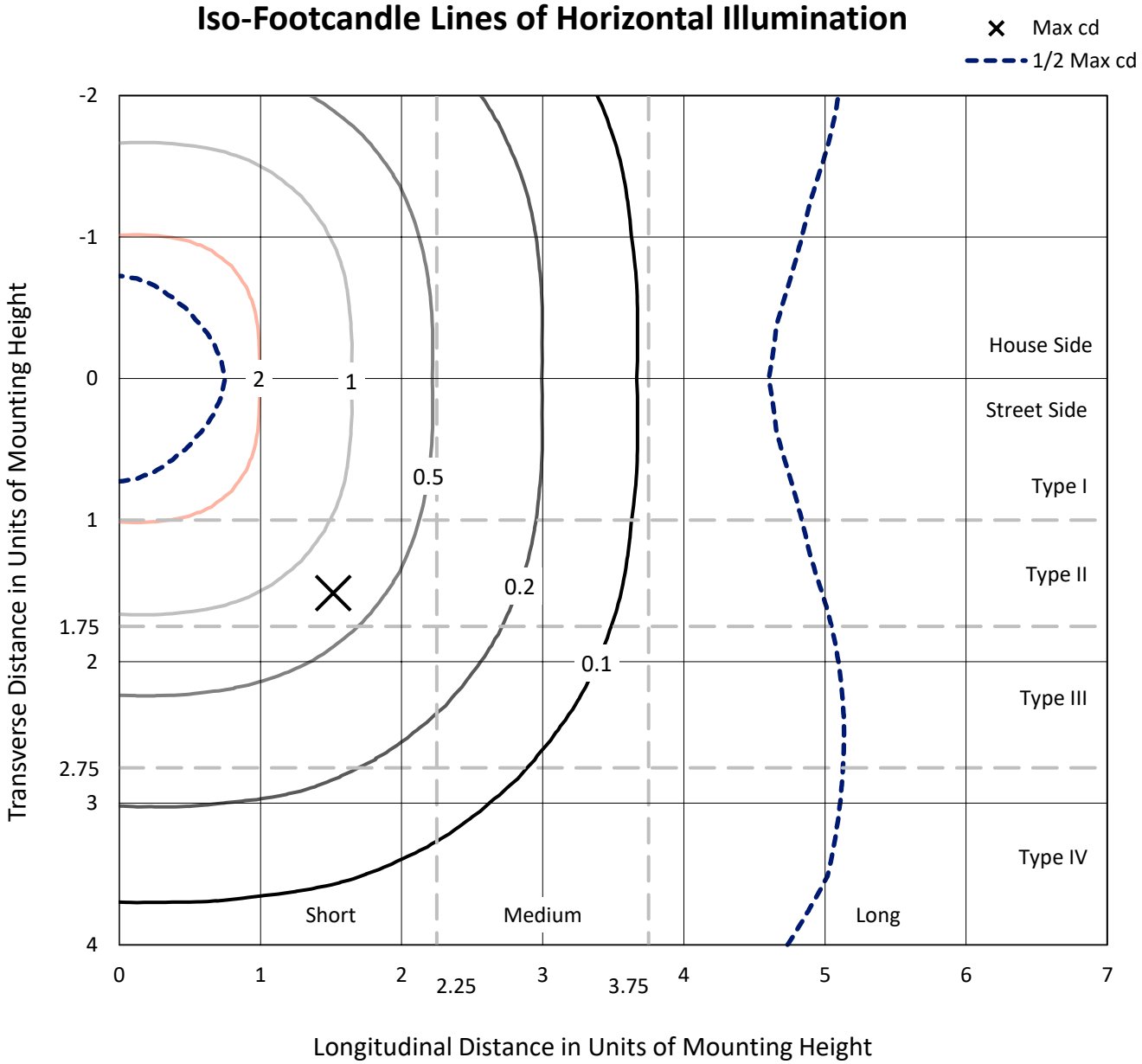
Scaled Data Report

REPORT NUMBER: P879978
CATALOG NUMBER: MEM2-HSN-VA-80-735-U-WQ

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 2.8 fc
Type V - Short - N/A

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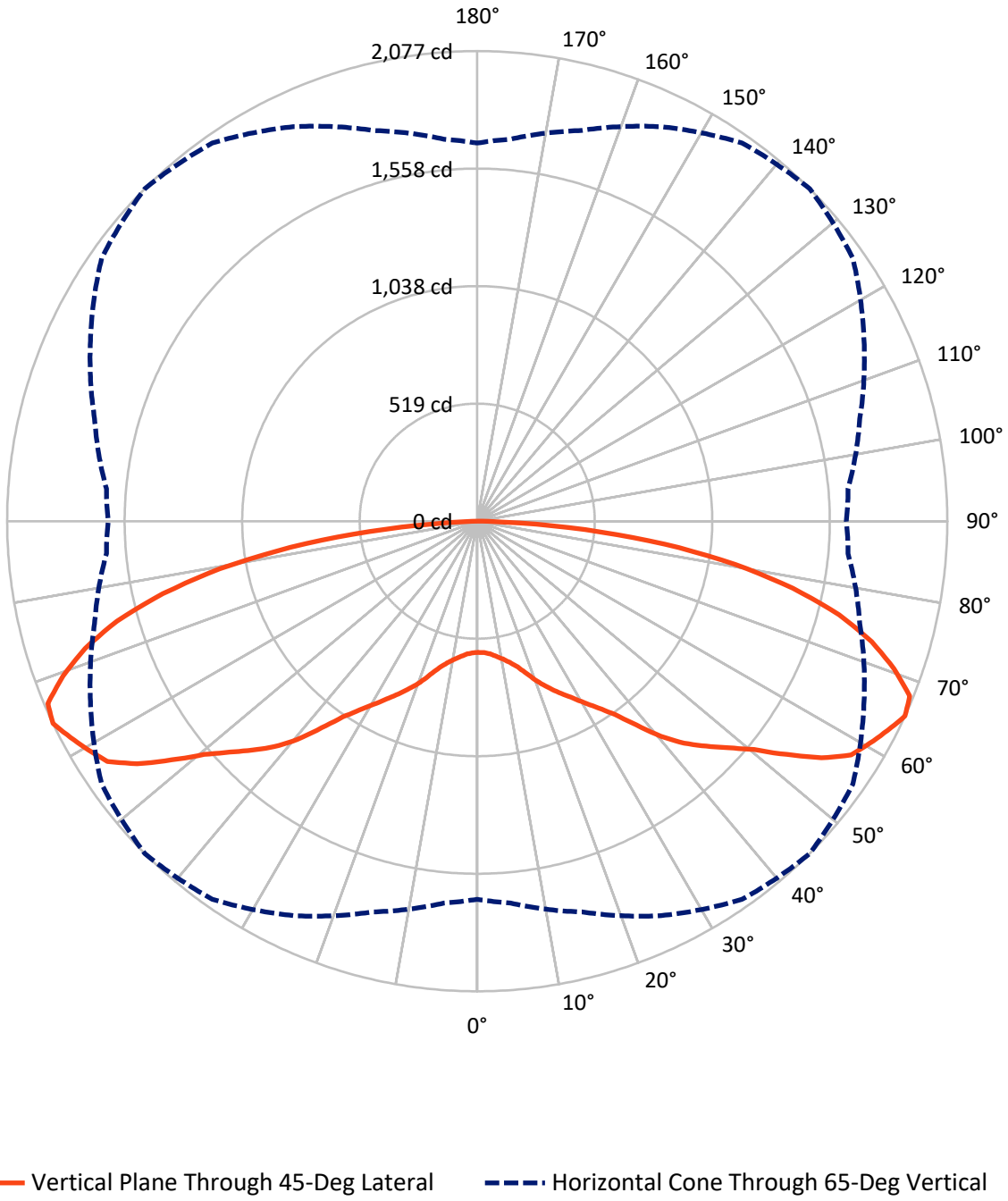
## Luminous Intensity Polar Plot



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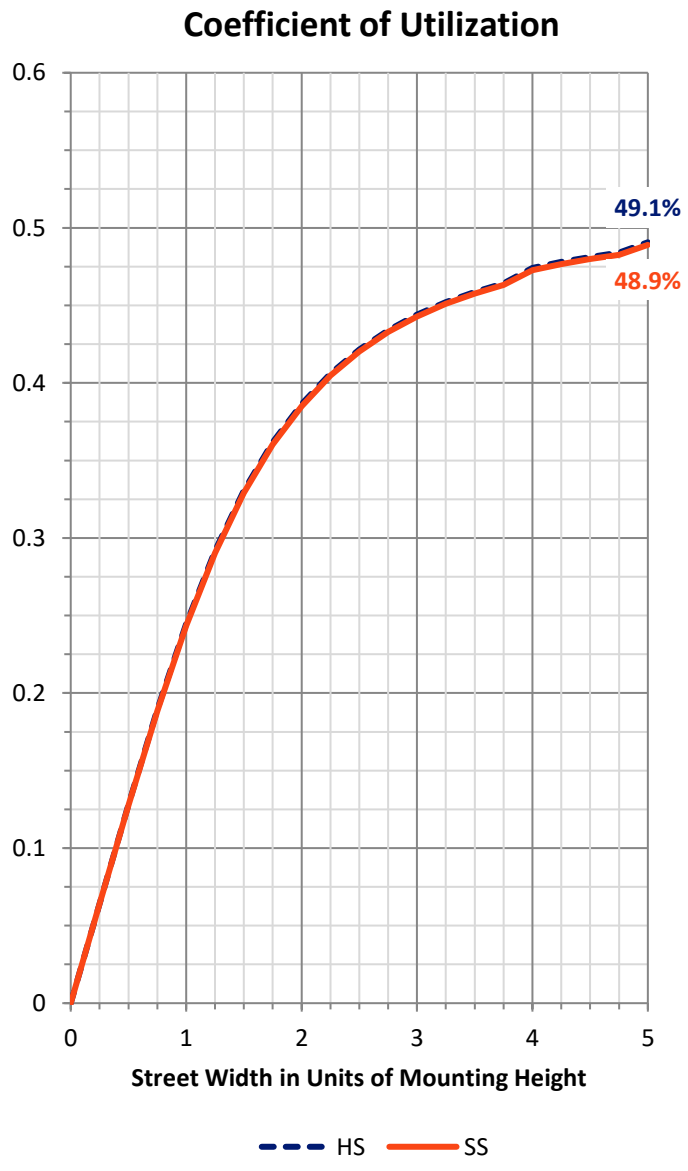
REPORT NUMBER: P879978
CATALOG NUMBER: MEM2-HSN-VA-80-735-U-WQ

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 3827.6 | 0.0 | 3827.6 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| **Street Side** | Lumens | 3827.6 | 0.0 | 3827.6 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| **Total** | Lumens | 7655.2 | 0.0 | 7655.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 57.2 | 0.7 |
| 10°-20° | 192.6 | 2.5 |
| 20°-30° | 387.0 | 5.1 |
| 30°-40° | 655.0 | 8.6 |
| 40°-50° | 1047.2 | 13.7 |
| 50°-60° | 1512.5 | 19.8 |
| 60°-70° | 1821.3 | 23.8 |
| 70°-80° | 1508.9 | 19.7 |
| 80°-90° | 473.5 | 6.2 |
| 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° | 7655.2 | 100.0 |
| 0°-180° | 7655.2 | 100.0 |



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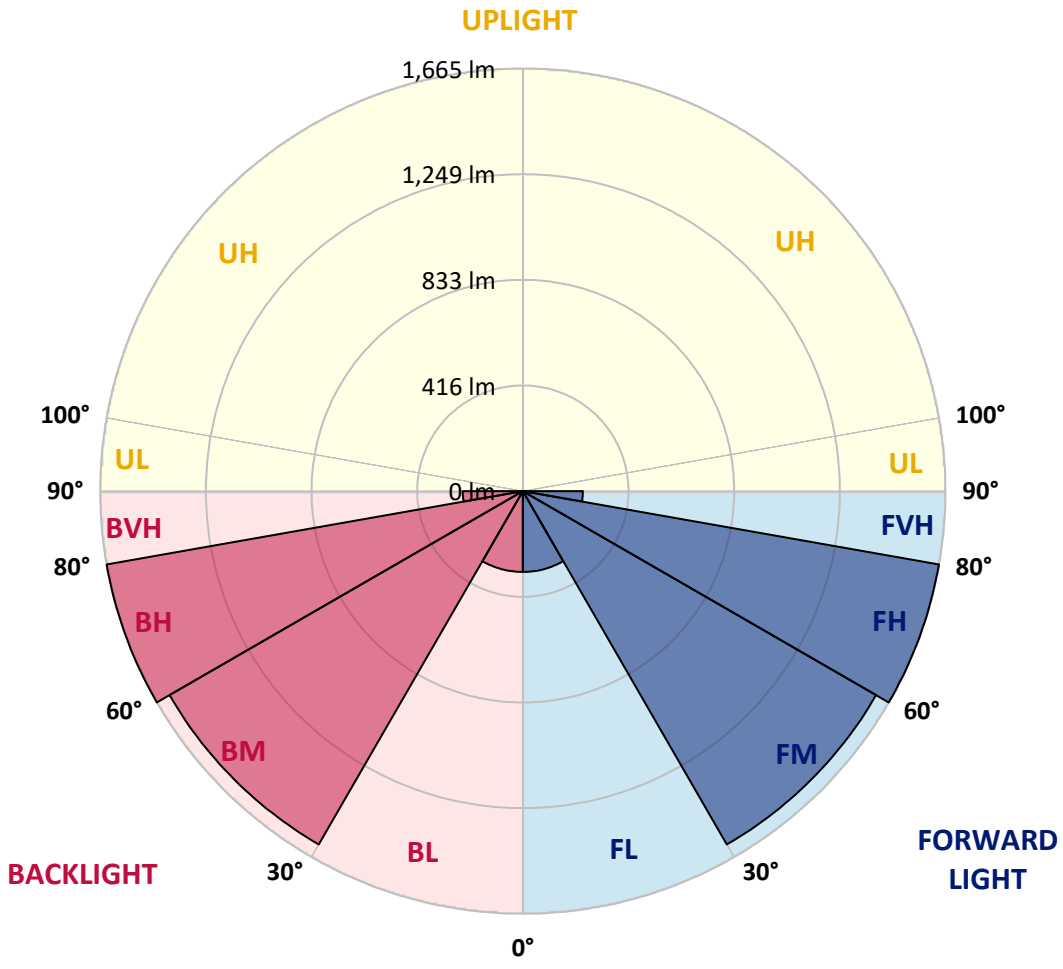
Scaled Data Report

REPORT NUMBER: P879978
CATALOG NUMBER: MEM2-HSN-VA-80-735-U-WQ

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 318.4 | 4.2 | | | |
| FM | (30°-60°) | 1607.4 | 21.0 | | | |
| FH | (60°-80°) | 1665.1 | 21.8 | | | G1/1800 |
| FVH | (80°-90°) | 236.7 | 3.1 | | | G3/500 |
| BL | (0°-30°) | 318.4 | 4.2 | B1/500 | | |
| BM | (30°-60°) | 1607.4 | 21.0 | B2/2500 | | |
| BH | (60°-80°) | 1665.1 | 21.8 | B3/2500 | | G1/1800 |
| BVH | (80°-90°) | 236.7 | 3.1 | | | G3/500 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G3**
Type V Short



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REPORT NUMBER: P879978
CATALOG NUMBER: MEM2-HSN-VA-80-735-U-WQ

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 579.4 | 579.4 | 579.4 | 579.4 | 579.4 | *579.4* | 579.4 | 579.4 | 579.4 | 579.4 | 579.4 |
| 2.5° | 581.7 | 581.7 | 581.7 | 581.7 | 581.7 | *581.7* | 581.7 | 581.7 | 581.7 | 581.7 | 581.7 |
| 5° | 591.1 | 591.1 | 591.1 | 588.7 | 588.7 | *588.7* | 591.1 | 591.1 | 591.1 | 591.1 | 591.1 |
| 7.5° | 602.8 | 602.8 | 602.8 | 602.8 | 602.8 | *602.8* | 600.4 | 600.4 | 600.4 | 600.4 | 602.8 |
| 10° | 619.1 | 621.4 | 621.4 | 619.1 | 619.1 | *619.1* | 616.8 | 616.8 | 619.1 | 619.1 | 616.8 |
| 12.5° | 642.5 | 642.5 | 642.5 | 642.5 | 640.1 | *640.1* | 640.1 | 640.1 | 640.1 | 640.1 | 640.1 |
| 15° | 668.2 | 668.2 | 668.2 | 668.2 | 668.2 | *668.2* | 668.2 | 668.2 | 665.8 | 663.5 | 663.5 |
| 17.5° | 700.9 | 698.5 | 703.2 | 700.9 | 705.5 | *707.9* | 703.2 | 700.9 | 698.5 | 696.2 | 693.9 |
| 20° | 740.6 | 742.9 | 747.6 | 749.9 | 752.3 | *754.6* | 747.6 | 745.3 | 740.6 | 738.3 | 735.9 |
| 22.5° | 787.3 | 787.3 | 792.0 | 792.0 | 796.7 | *796.7* | 794.3 | 787.3 | 782.6 | 782.6 | 780.3 |
| 25° | 827.0 | 829.4 | 834.0 | 834.0 | 838.7 | *838.7* | 836.4 | 831.7 | 824.7 | 820.0 | 817.7 |
| 27.5° | 869.1 | 869.1 | 871.4 | 878.4 | 880.8 | *880.8* | 878.4 | 871.4 | 862.1 | 857.4 | 857.4 |
| 30° | 908.8 | 911.1 | 913.5 | 922.8 | 927.5 | *929.8* | 920.5 | 913.5 | 901.8 | 897.1 | 897.1 |
| 32.5° | 955.5 | 955.5 | 960.2 | 974.2 | 981.2 | *983.6* | 974.2 | 962.5 | 948.5 | 939.2 | 939.2 |
| 35° | 1006.9 | 1004.6 | 1018.6 | 1032.6 | 1049.0 | *1049.0* | 1042.0 | 1023.3 | 1002.3 | 990.6 | 988.2 |
| 37.5° | 1074.7 | 1077.0 | 1091.0 | 1116.7 | 1142.4 | *1142.4* | 1135.4 | 1102.7 | 1079.3 | 1058.3 | 1053.6 |
| 40° | 1154.1 | 1156.4 | 1182.1 | 1212.5 | 1240.5 | *1249.9* | 1235.9 | 1203.2 | 1163.5 | 1133.1 | 1130.7 |
| 42.5° | 1221.9 | 1231.2 | 1256.9 | 1299.0 | 1327.0 | *1341.0* | 1320.0 | 1282.6 | 1238.2 | 1203.2 | 1196.2 |
| 45° | 1287.3 | 1296.6 | 1329.3 | 1373.7 | 1408.8 | *1418.1* | 1399.4 | 1355.0 | 1303.6 | 1266.2 | 1261.6 |
| 47.5° | 1348.0 | 1357.4 | 1390.1 | 1448.5 | 1485.9 | *1495.2* | 1478.8 | 1427.4 | 1364.4 | 1327.0 | 1322.3 |
| 50° | 1404.1 | 1425.1 | 1464.8 | 1527.9 | 1581.6 | *1586.3* | 1563.0 | 1502.2 | 1436.8 | 1385.4 | 1378.4 |
| 52.5° | 1481.2 | 1490.5 | 1546.6 | 1630.7 | 1691.4 | *1712.5* | 1675.1 | 1609.7 | 1513.9 | 1453.1 | 1441.5 |
| 55° | 1574.6 | 1579.3 | 1640.0 | 1738.2 | 1817.6 | *1845.6* | 1798.9 | 1714.8 | 1605.0 | 1544.3 | 1534.9 |
| 57.5° | 1628.4 | 1649.4 | 1719.5 | 1824.6 | 1911.1 | *1948.4* | 1904.0 | 1794.2 | 1686.8 | 1609.7 | 1588.6 |
| 60° | 1651.7 | 1672.8 | 1749.9 | 1876.0 | 1969.5 | *1992.8* | 1960.1 | 1852.6 | 1712.5 | 1626.0 | 1612.0 |
| 62.5° | 1675.1 | 1696.1 | 1773.2 | 1911.1 | 2002.2 | *2034.9* | 1983.5 | 1887.7 | 1735.8 | 1651.7 | 1633.0 |
| 65° | *1670.4* | *1693.8* | *1787.2* | *1922.7* | *2039.5* | *2076.9* | *2025.5* | *1885.4* | *1749.9* | *1644.7* | *1630.7* |
| 67.5° | 1623.7 | 1644.7 | 1742.8 | 1892.4 | 2020.9 | *2060.6* | 2004.5 | 1859.7 | 1707.8 | 1600.3 | 1584.0 |
| 70° | 1530.2 | 1555.9 | 1651.7 | 1815.3 | 1934.4 | *1953.1* | 1911.1 | 1780.2 | 1621.4 | 1506.9 | 1485.9 |
| 72.5° | 1404.1 | 1429.8 | 1527.9 | 1696.1 | 1789.6 | *1822.3* | 1775.5 | 1663.4 | 1502.2 | 1385.4 | 1366.7 |
| 75° | 1254.6 | 1270.9 | 1362.0 | 1520.9 | 1621.4 | *1651.7* | 1616.7 | 1495.2 | 1331.7 | 1238.2 | 1217.2 |
| 77.5° | 1079.3 | 1102.7 | 1184.5 | 1317.6 | 1397.1 | *1425.1* | 1392.4 | 1306.0 | 1154.1 | 1074.7 | 1058.3 |
| 80° | 848.1 | 876.1 | 950.9 | 1051.3 | 1135.4 | *1156.4* | 1128.4 | 1035.0 | 939.2 | 852.7 | 834.0 |
| 82.5° | 612.1 | 619.1 | 686.9 | 759.3 | 822.4 | *834.0* | 813.0 | 761.6 | 661.2 | 602.8 | 577.1 |
| 85° | 320.1 | 329.4 | 378.5 | 432.2 | 471.9 | *478.9* | 469.6 | 413.5 | 380.8 | 327.1 | 306.0 |
| 87.5° | 72.4 | 74.8 | 88.8 | 98.1 | 119.1 | *116.8* | 123.8 | 98.1 | 93.4 | 77.1 | 67.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-176-4

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-735-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-735-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

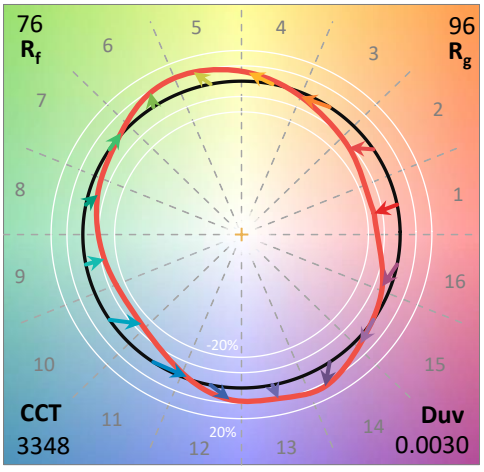
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-176-4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 09/27/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Streetworks |
| Catalog Number: | **MEM2-HTN-VA-30-735-U-WQ** |
| Description: | EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3348 |
| CIE u': | 0.2384 |
| CIE v': | 0.5184 |
| Duv: | 0.0030 |
| CIE x: | 0.4177 |
| CIE y: | 0.4036 |
| CIE z: | 0.1787 |
| Peak Wavelength (nm): | 593 |
| Dominant Wavelength (nm): | 580 |
| Purity: | 46.5223 |
| Rf: | 75.8 |
| Rg: | 95.8 |

| | |
|---|---|
| CRI (Ra): | 73.4 |
| R1: | 70.8 |
| R2: | 79.9 |
| R3: | 87.6 |
| R4: | 72.6 |
| R5: | 69.3 |
| R6: | 71.3 |
| R7: | 82.1 |
| R8: | 53.3 |
| R9: | -19.2 |
| R10: | 52.5 |
| R11: | 68.0 |
| R12: | 42.6 |
| R13: | 72.0 |
| R14: | 92.6 |
| R15: | 63.8 |




## Test Conditions

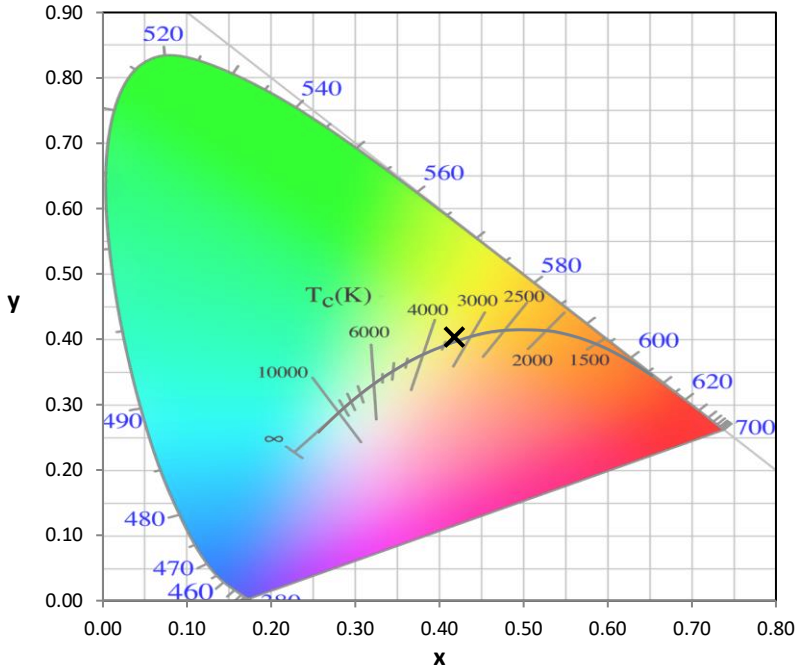
| | |
|---|---|
| Stabilization Time: | 30M |
| Operation Time: | 1H 30M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-176-4

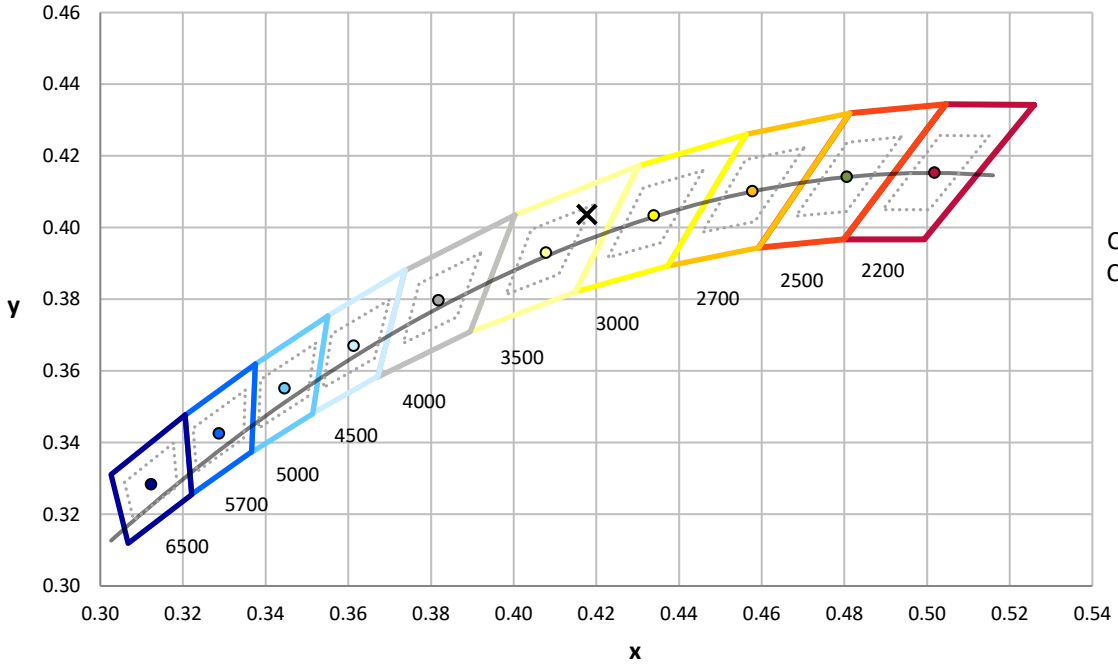
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC 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: SP1-2407-176-4

## CIE 1931 Chromaticity Diagram




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

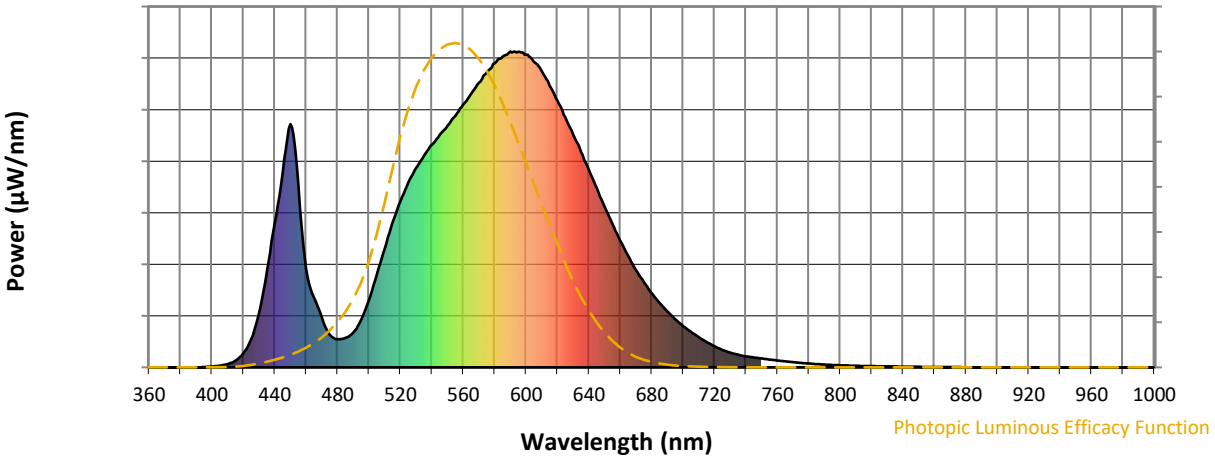



CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

## Photopic Flux vs. Wavelength

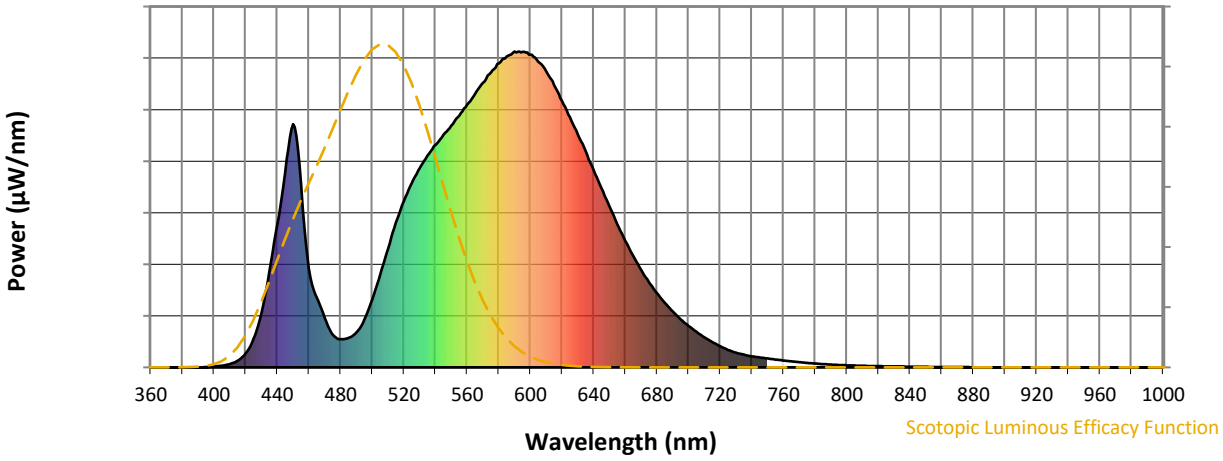



## Photopic Lumens: NR

| 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 | 110 | NR | 620 | 844 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 150 | NR | 625 | 792 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 214 | NR | 630 | 737 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 293 | NR | 635 | 683 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 376 | NR | 640 | 625 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 458 | NR | 645 | 566 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 526 | NR | 650 | 509 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 584 | NR | 655 | 453 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 631 | NR | 660 | 401 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 671 | NR | 665 | 353 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 704 | NR | 670 | 308 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 737 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 44 | NR | 550 | 766 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 90 | NR | 555 | 797 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 171 | NR | 560 | 832 | NR | 690 | 177 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 305 | NR | 565 | 866 | NR | 695 | 152 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 455 | NR | 570 | 901 | NR | 700 | 131 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 615 | NR | 575 | 933 | NR | 705 | 112 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 771 | NR | 580 | 963 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 579 | NR | 585 | 984 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 313 | NR | 590 | 1000 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 221 | NR | 595 | 999 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 156 | NR | 600 | 990 | NR | 730 | 46 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 968 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 89 | NR | 610 | 937 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 93 | NR | 615 | 893 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-176-4

## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.31**

| 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 | 110 | NR | 620 | 844 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 150 | NR | 625 | 792 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 214 | NR | 630 | 737 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 293 | NR | 635 | 683 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 376 | NR | 640 | 625 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 458 | NR | 645 | 566 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 526 | NR | 650 | 509 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 584 | NR | 655 | 453 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 631 | NR | 660 | 401 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 671 | NR | 665 | 353 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 704 | NR | 670 | 308 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 737 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 44 | NR | 550 | 766 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 90 | NR | 555 | 797 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 171 | NR | 560 | 832 | NR | 690 | 177 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 305 | NR | 565 | 866 | NR | 695 | 152 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 455 | NR | 570 | 901 | NR | 700 | 131 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 615 | NR | 575 | 933 | NR | 705 | 112 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 771 | NR | 580 | 963 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 579 | NR | 585 | 984 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 313 | NR | 590 | 1000 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 221 | NR | 595 | 999 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 156 | NR | 600 | 990 | NR | 730 | 46 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 968 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 89 | NR | 610 | 937 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 93 | NR | 615 | 893 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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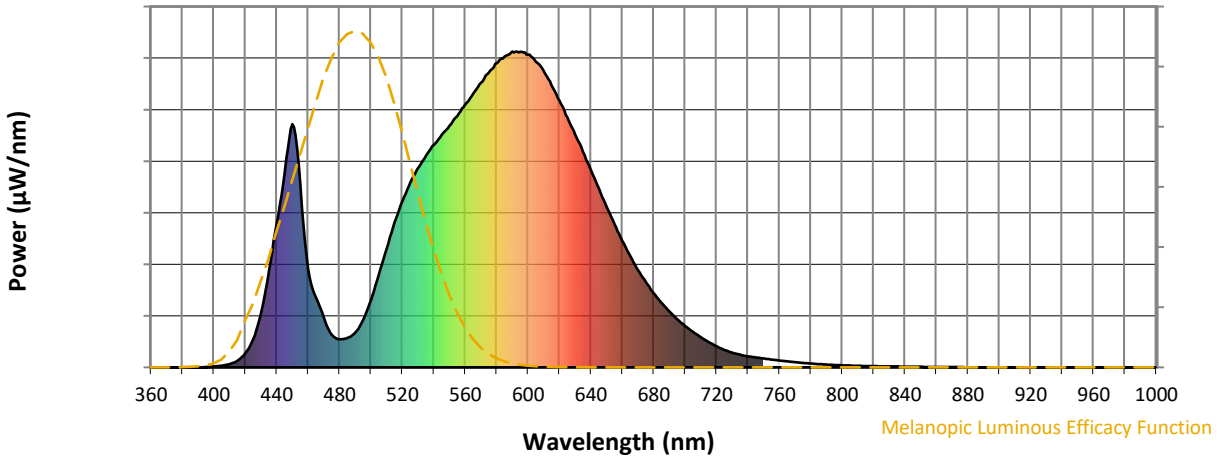
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.4**

| 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 | 110 | NR | 620 | 844 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 150 | NR | 625 | 792 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 214 | NR | 630 | 737 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 293 | NR | 635 | 683 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 376 | NR | 640 | 625 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 458 | NR | 645 | 566 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 526 | NR | 650 | 509 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 584 | NR | 655 | 453 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 631 | NR | 660 | 401 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 671 | NR | 665 | 353 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 704 | NR | 670 | 308 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 737 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 44 | NR | 550 | 766 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 90 | NR | 555 | 797 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 171 | NR | 560 | 832 | NR | 690 | 177 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 305 | NR | 565 | 866 | NR | 695 | 152 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 455 | NR | 570 | 901 | NR | 700 | 131 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 615 | NR | 575 | 933 | NR | 705 | 112 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 771 | NR | 580 | 963 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 579 | NR | 585 | 984 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 313 | NR | 590 | 1000 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 221 | NR | 595 | 999 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 156 | NR | 600 | 990 | NR | 730 | 46 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 968 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 89 | NR | 610 | 937 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 93 | NR | 615 | 893 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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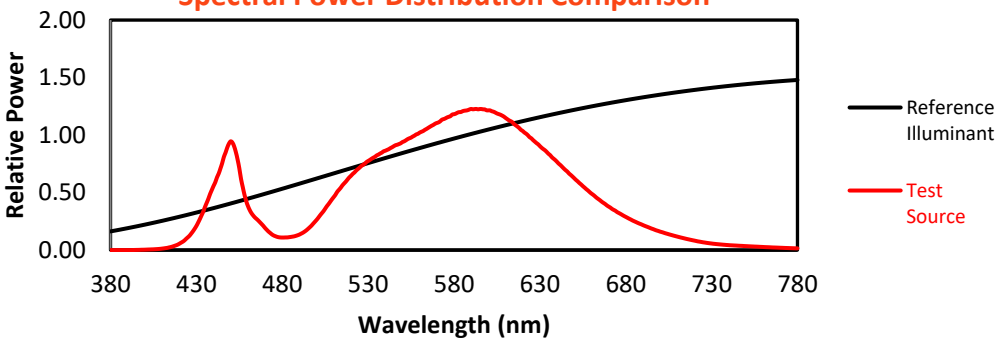
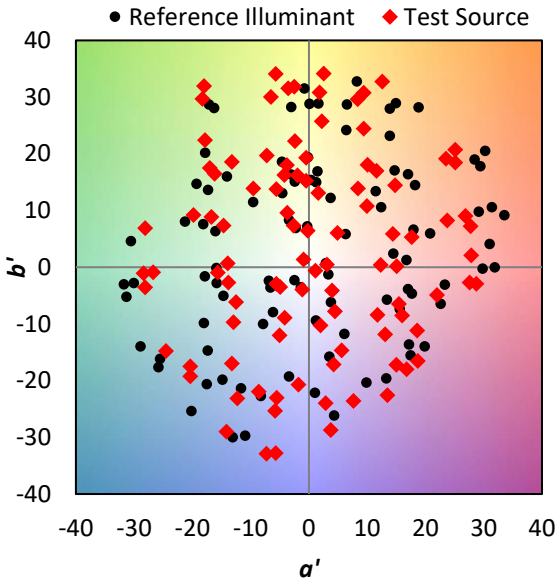
## Summary

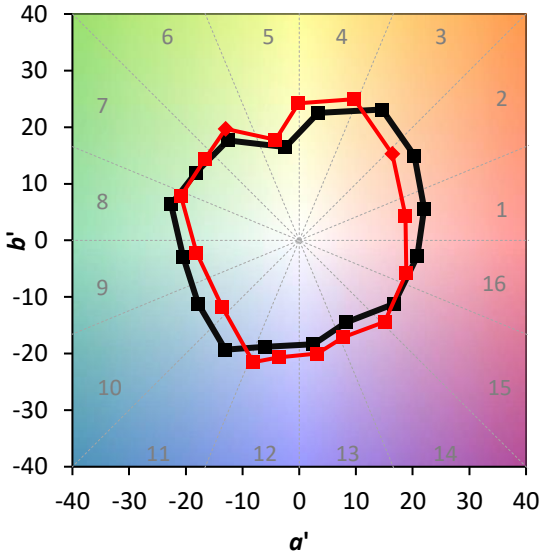
$R_f$ = 75.8
$R_g$ = 95.8
CIE $R_a$ = 73.4
$R_9$ = -19.2

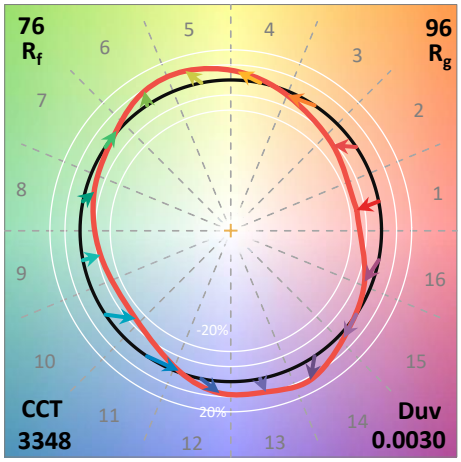
## Spectral Power Distribution Comparison

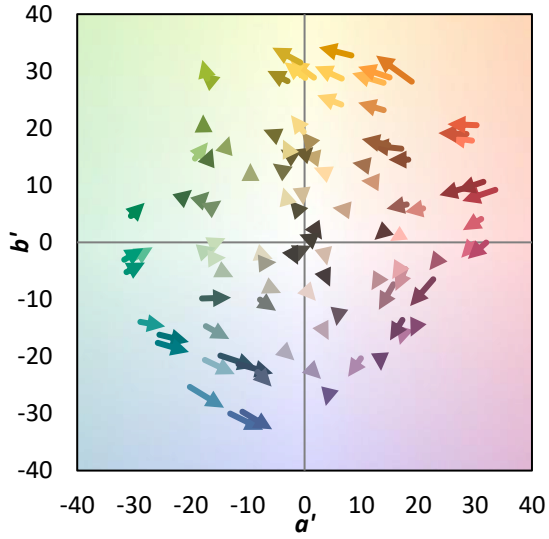



## Color Vector Graphics



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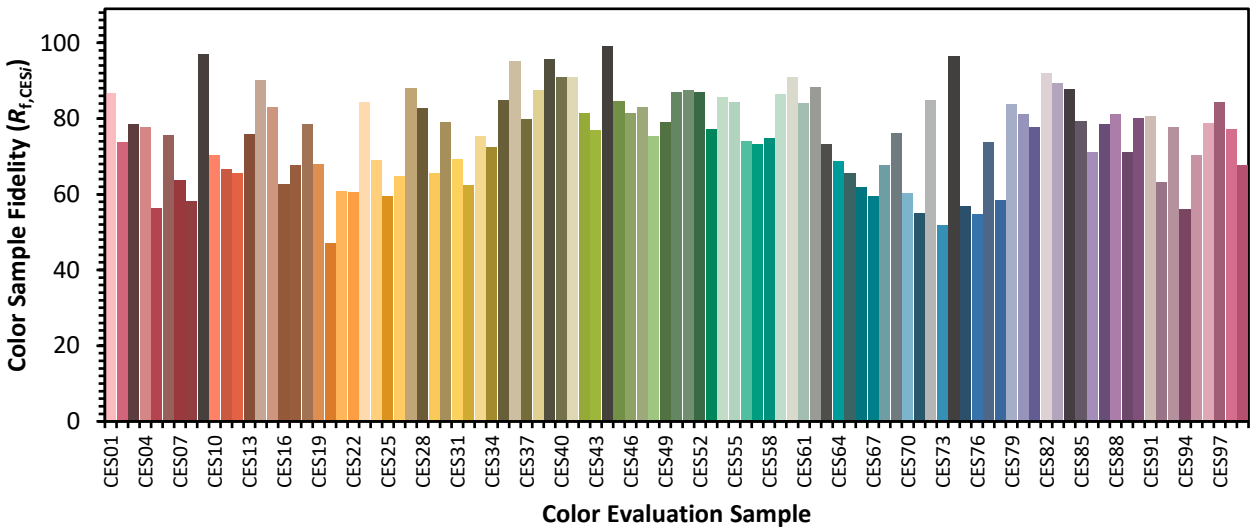
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 65 | CES51 = 88 | CES76 = 55 |
| CES02 = 62 | CES27 = 88 | CES52 = 87 | CES77 = 74 |
| CES03 = 31 | CES28 = 83 | CES53 = 77 | CES78 = 58 |
| CES04 = 70 | CES29 = 66 | CES54 = 86 | CES79 = 84 |
| CES05 = 48 | CES30 = 79 | CES55 = 84 | CES80 = 81 |
| CES06 = 51 | CES31 = 69 | CES56 = 74 | CES81 = 78 |
| CES07 = 41 | CES32 = 62 | CES57 = 73 | CES82 = 92 |
| CES08 = 40 | CES33 = 75 | CES58 = 75 | CES83 = 89 |
| CES09 = 29 | CES34 = 73 | CES59 = 87 | CES84 = 88 |
| CES10 = 75 | CES35 = 85 | CES60 = 91 | CES85 = 79 |
| CES11 = 58 | CES36 = 95 | CES61 = 84 | CES86 = 71 |
| CES12 = 64 | CES37 = 80 | CES62 = 88 | CES87 = 79 |
| CES13 = 43 | CES38 = 88 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 96 | CES64 = 69 | CES89 = 71 |
| CES15 = 71 | CES40 = 91 | CES65 = 66 | CES90 = 80 |
| CES16 = 47 | CES41 = 91 | CES66 = 62 | CES91 = 81 |
| CES17 = 50 | CES42 = 81 | CES67 = 60 | CES92 = 63 |
| CES18 = 56 | CES43 = 77 | CES68 = 68 | CES93 = 78 |
| CES19 = 72 | CES44 = 99 | CES69 = 76 | CES94 = 56 |
| CES20 = 65 | CES45 = 85 | CES70 = 60 | CES95 = 70 |
| CES21 = 87 | CES46 = 82 | CES71 = 55 | CES96 = 79 |
| CES22 = 79 | CES47 = 83 | CES72 = 85 | CES97 = 84 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 77 |
| CES24 = 91 | CES49 = 79 | CES74 = 96 | CES99 = 68 |
| CES25 = 72 | CES50 = 87 | CES75 = 57 | |



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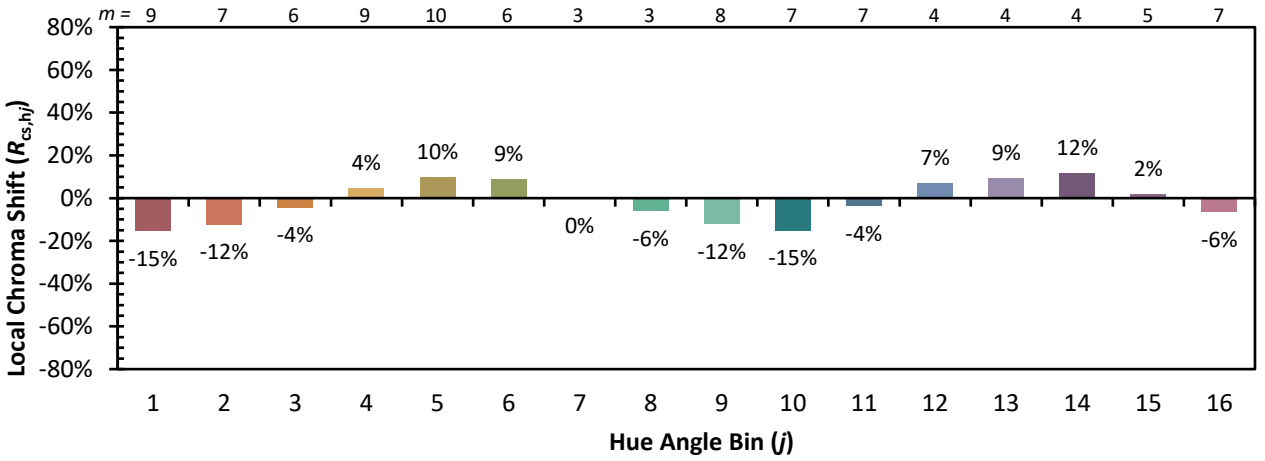
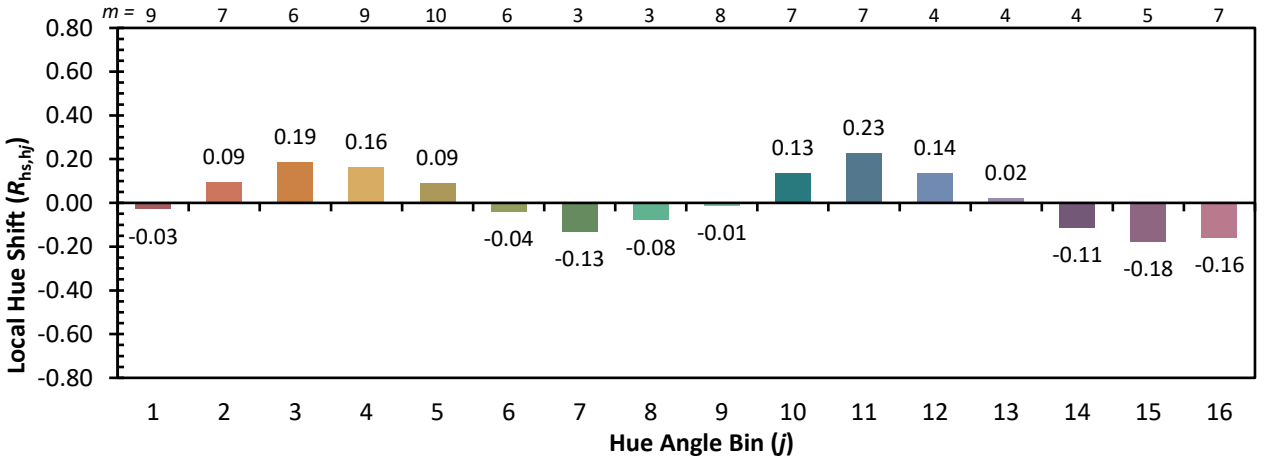
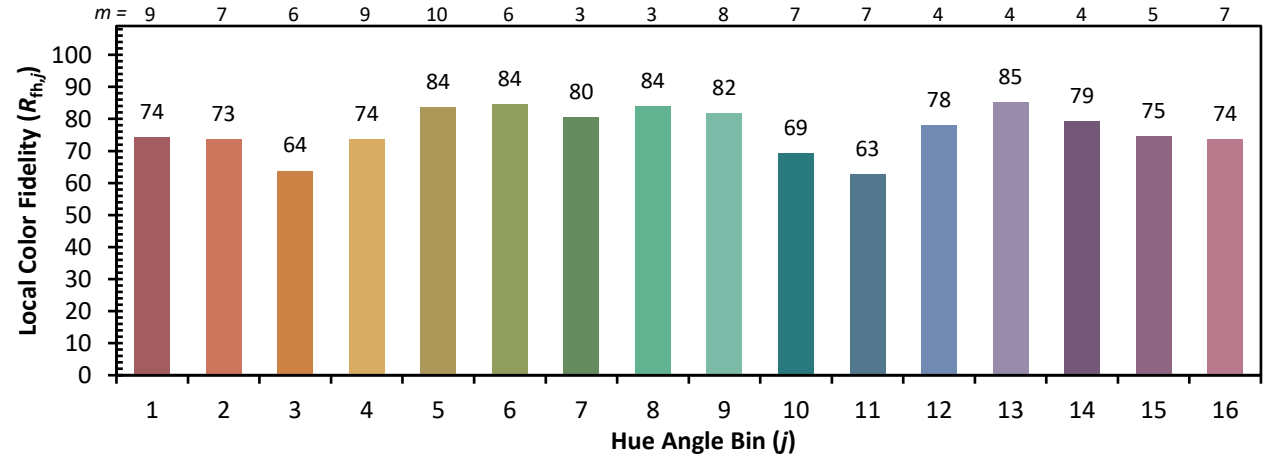
## Color Rendition by Hue-Angle Bin



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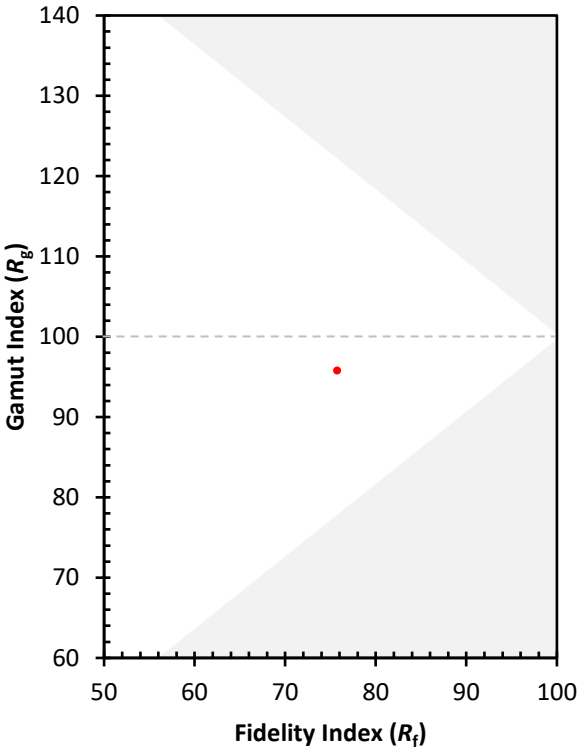
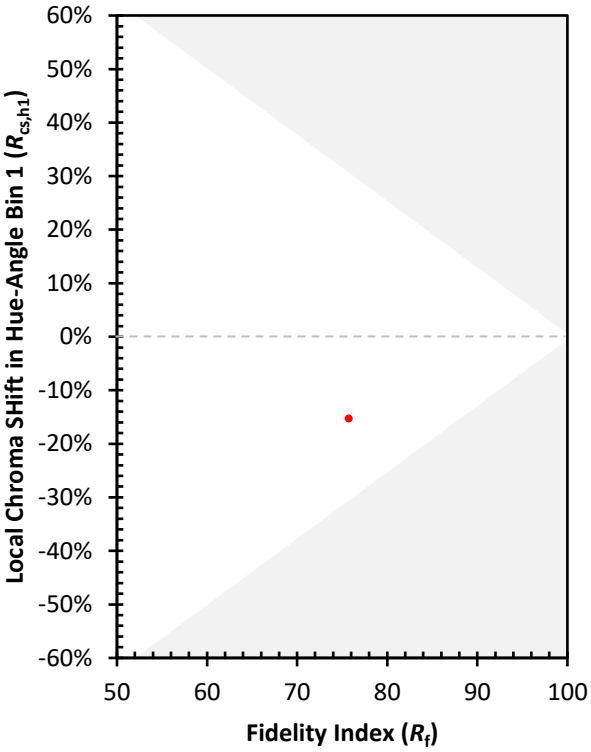
## Measure Comparisons

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