

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: INVUE

Report Number: P880440

Luminaire Tested: **EMM2-HTN-VA5-730-U-CQ**

Issue Date: 10/01/2024



Test Information

Test Method: LM-79-08
Report Number: P880440
Test Lab: INNOVATION CENTER(G3)
Issue Date: 10/01/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HTN-VA5-730-U-CQ
Description: EPIC MODERN TALL HOUSING 5W 70CRI 3000K VISUAL COMFORT FIXTURE w/
TYPE V CONCENTRATED DISTRIBUTION OPTIC
Light Source: (1) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

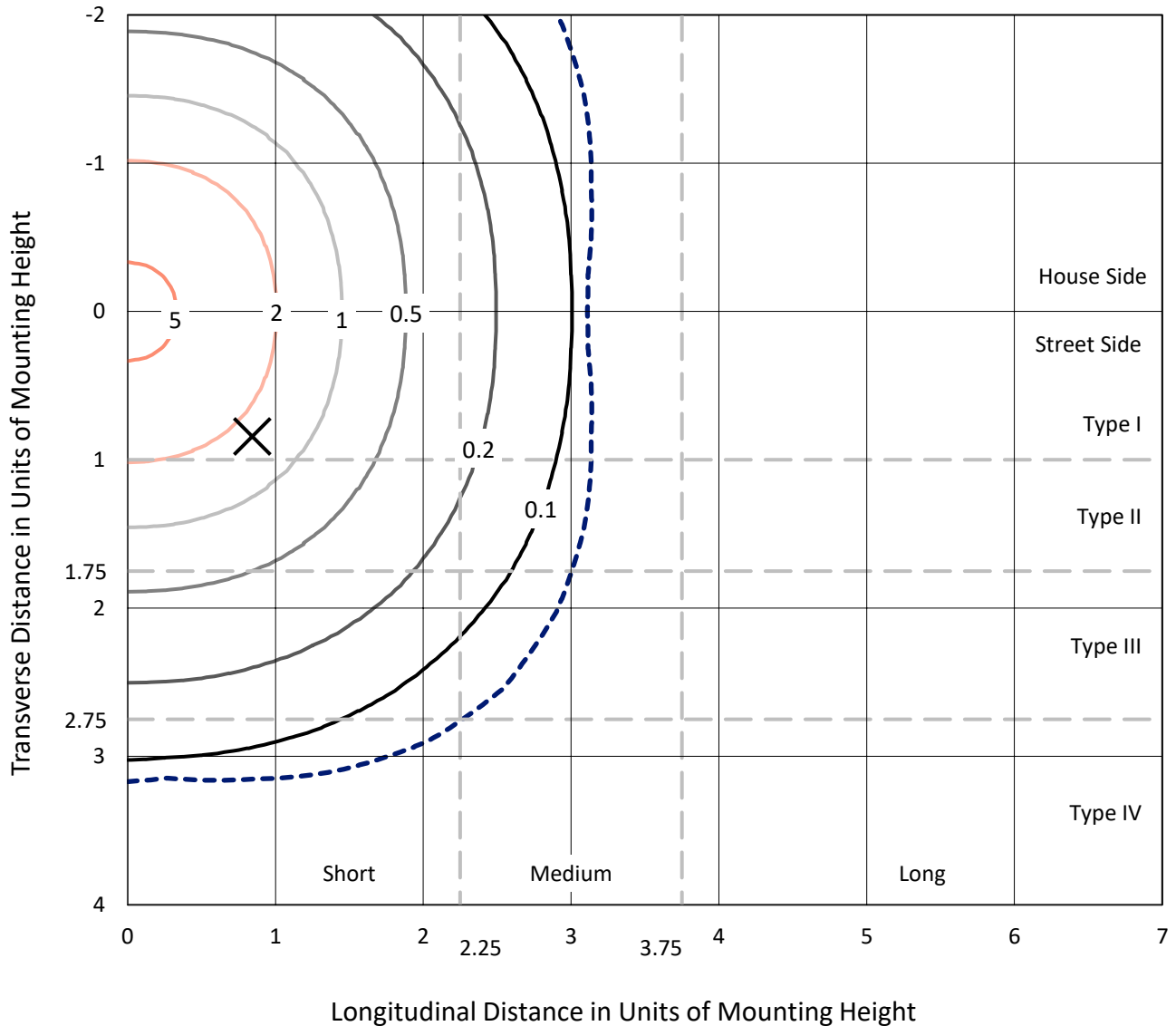
Lumens per Lamp: N/A
Luminaire Lumens: 5947.8 lumens
Efficiency: N/A
Efficacy: 76.3 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short
BUG Rating: B2 - U0 - G1

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

REPORT NUMBER: P880440
 CATALOG NUMBER: EMM2-HTN-VA5-730-U-CQ

Iso-Footcandle Lines of Horizontal Illumination

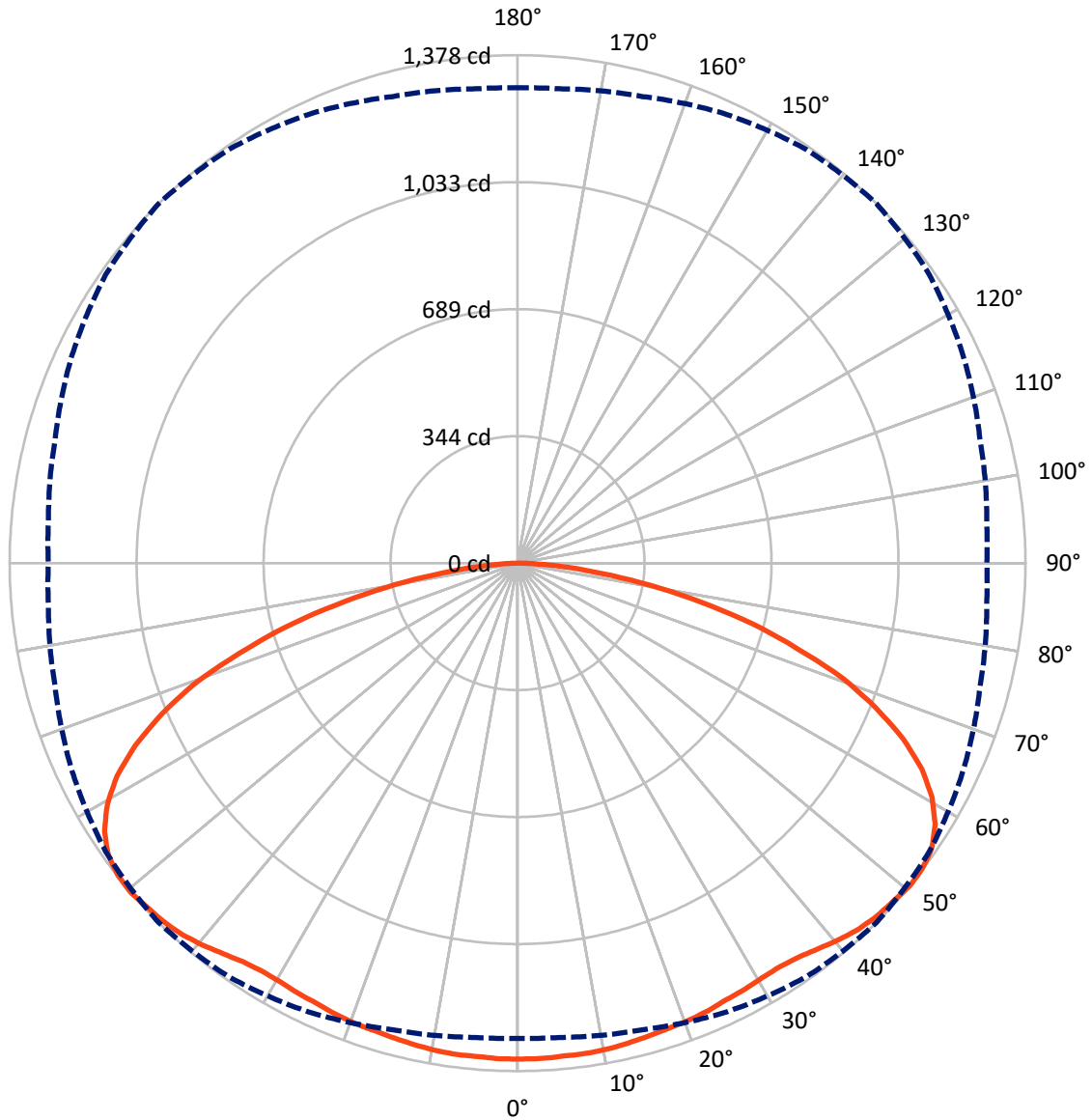
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 6 fc
 Type V - Short - N/A

REPORT NUMBER: P880440
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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 50-Deg Vertical

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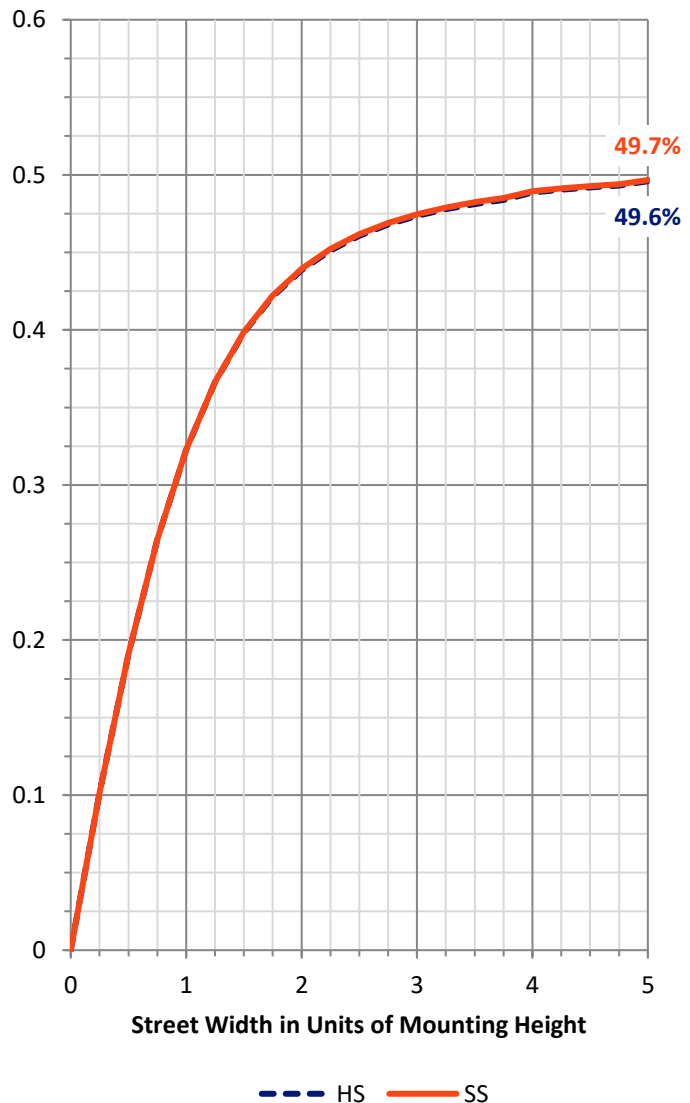
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2973.9 | 0.0 | 2973.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 2973.9 | 0.0 | 2973.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 5947.8 | 0.0 | 5947.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 128.1 | 2.2 |
| 10°-20° | 376.8 | 6.3 |
| 20°-30° | 606.2 | 10.2 |
| 30°-40° | 818.4 | 13.8 |
| 40°-50° | 1028.9 | 17.3 |
| 50°-60° | 1156.6 | 19.4 |
| 60°-70° | 1053.3 | 17.7 |
| 70°-80° | 636.0 | 10.7 |
| 80°-90° | 143.4 | 2.4 |
| 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° | 5947.8 | 100.0 |
| 0°-180° | 5947.8 | 100.0 |



REPORT NUMBER: P880440

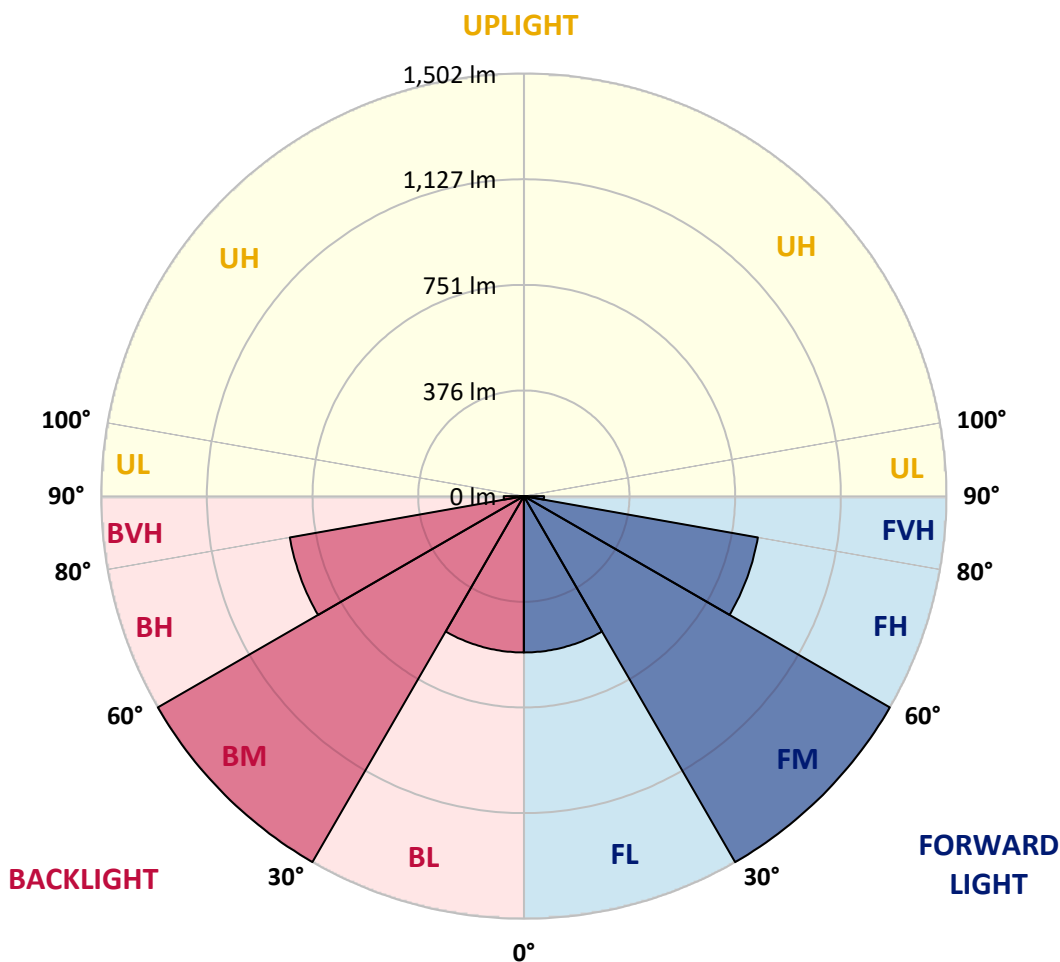
CATALOG NUMBER: EMM2-HTN-VA5-730-U-CQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 555.6 | 9.3 | | | |
| FM (30°-60°) | 1502.0 | 25.3 | | | |
| FH (60°-80°) | 844.6 | 14.2 | | | G1/1800 |
| FVH (80°-90°) | 71.7 | 1.2 | | | G1/100 |
| BL (0°-30°) | 555.6 | 9.3 | B2/1000 | | |
| BM (30°-60°) | 1502.0 | 25.3 | B2/2500 | | |
| BH (60°-80°) | 844.6 | 14.2 | B2/1000 | | G1/1800 |
| BVH (80°-90°) | 71.7 | 1.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G1

Type V Short





REPORT NUMBER: P880440

CATALOG NUMBER: EMM2-HTN-VA5-730-U-CQ

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 |
| 2.5° | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 | 1344.9 |
| 5° | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1344.9 |
| 7.5° | 1340.2 | 1342.5 | 1342.5 | 1340.2 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 | 1342.5 |
| 10° | 1337.9 | 1337.9 | 1340.2 | 1340.2 | 1340.2 | 1340.2 | 1340.2 | 1340.2 | 1340.2 | 1340.2 | 1337.9 |
| 12.5° | 1333.2 | 1335.5 | 1335.5 | 1335.5 | 1335.5 | 1335.5 | 1335.5 | 1335.5 | 1335.5 | 1335.5 | 1335.5 |
| 15° | 1330.9 | 1330.9 | 1330.9 | 1330.9 | 1330.9 | 1330.9 | 1330.9 | 1330.9 | 1328.5 | 1328.5 | 1330.9 |
| 17.5° | 1323.8 | 1323.8 | 1326.2 | 1326.2 | 1326.2 | 1326.2 | 1326.2 | 1326.2 | 1323.8 | 1323.8 | 1323.8 |
| 20° | 1319.2 | 1319.2 | 1321.5 | 1321.5 | 1321.5 | 1323.8 | 1321.5 | 1319.2 | 1319.2 | 1319.2 | 1319.2 |
| 22.5° | 1314.5 | 1314.5 | 1316.8 | 1316.8 | 1319.2 | 1319.2 | 1316.8 | 1316.8 | 1314.5 | 1314.5 | 1314.5 |
| 25° | 1309.8 | 1309.8 | 1309.8 | 1312.2 | 1314.5 | 1312.2 | 1312.2 | 1309.8 | 1307.5 | 1305.2 | 1305.2 |
| 27.5° | 1302.8 | 1302.8 | 1302.8 | 1307.5 | 1307.5 | 1309.8 | 1307.5 | 1305.2 | 1300.5 | 1298.2 | 1298.2 |
| 30° | 1295.8 | 1295.8 | 1298.2 | 1302.8 | 1305.2 | 1305.2 | 1302.8 | 1298.2 | 1293.5 | 1291.2 | 1291.2 |
| 32.5° | 1288.8 | 1291.2 | 1293.5 | 1300.5 | 1302.8 | 1305.2 | 1300.5 | 1295.8 | 1288.8 | 1284.2 | 1284.2 |
| 35° | 1288.8 | 1288.8 | 1295.8 | 1302.8 | 1309.8 | 1312.2 | 1307.5 | 1298.2 | 1288.8 | 1281.8 | 1281.8 |
| 37.5° | 1291.2 | 1293.5 | 1302.8 | 1312.2 | 1321.5 | 1326.2 | 1319.2 | 1307.5 | 1293.5 | 1284.2 | 1284.2 |
| 40° | 1300.5 | 1300.5 | 1312.2 | 1328.5 | 1340.2 | 1342.5 | 1335.5 | 1319.2 | 1300.5 | 1288.8 | 1286.5 |
| 42.5° | 1305.2 | 1307.5 | 1319.2 | 1337.9 | 1351.9 | 1356.5 | 1347.2 | 1328.5 | 1305.2 | 1288.8 | 1286.5 |
| 45° | 1305.2 | 1307.5 | 1321.5 | 1342.5 | 1361.2 | 1365.9 | 1356.5 | 1333.2 | 1307.5 | 1291.2 | 1286.5 |
| 47.5° | 1298.2 | 1300.5 | 1319.2 | 1344.9 | 1365.9 | 1370.5 | 1358.9 | 1335.5 | 1305.2 | 1286.5 | 1281.8 |
| 50° | 1288.8 | 1291.2 | 1309.8 | 1342.5 | 1368.2 | 1377.5 | 1363.5 | 1333.2 | 1298.2 | 1277.2 | 1272.5 |
| 52.5° | 1270.1 | 1272.5 | 1298.2 | 1333.2 | 1365.9 | 1375.2 | 1358.9 | 1326.2 | 1284.2 | 1260.8 | 1256.1 |
| 55° | 1242.1 | 1246.8 | 1272.5 | 1314.5 | 1351.9 | 1363.5 | 1344.9 | 1307.5 | 1263.1 | 1235.1 | 1230.5 |
| 57.5° | 1204.8 | 1207.1 | 1237.5 | 1284.2 | 1323.8 | 1335.5 | 1316.8 | 1277.2 | 1228.1 | 1197.8 | 1195.4 |
| 60° | 1151.1 | 1155.7 | 1190.8 | 1237.5 | 1279.5 | 1291.2 | 1272.5 | 1230.5 | 1179.1 | 1146.4 | 1144.1 |
| 62.5° | 1085.7 | 1090.4 | 1123.1 | 1176.8 | 1218.8 | 1230.5 | 1211.8 | 1167.4 | 1116.0 | 1081.0 | 1078.7 |
| 65° | 1004.0 | 1008.6 | 1041.3 | 1092.7 | 1137.1 | 1148.7 | 1132.4 | 1085.7 | 1034.3 | 1001.6 | 997.0 |
| 67.5° | 912.9 | 917.6 | 947.9 | 992.3 | 1032.0 | 1048.3 | 1032.0 | 992.3 | 943.3 | 903.6 | 898.9 |
| 70° | 803.2 | 803.2 | 833.5 | 877.9 | 915.3 | 936.3 | 915.3 | 875.6 | 826.5 | 793.8 | 793.8 |
| 72.5° | 688.8 | 684.1 | 712.1 | 754.2 | 784.5 | 793.8 | 789.2 | 754.2 | 707.5 | 677.1 | 672.4 |
| 75° | 551.0 | 560.4 | 581.4 | 611.7 | 644.4 | 658.4 | 642.1 | 611.7 | 579.0 | 553.4 | 551.0 |
| 77.5° | 427.3 | 434.3 | 453.0 | 478.6 | 497.3 | 506.7 | 502.0 | 478.6 | 443.6 | 431.9 | 427.3 |
| 80° | 301.2 | 305.9 | 322.2 | 340.9 | 354.9 | 364.2 | 357.2 | 338.6 | 319.9 | 308.2 | 303.5 |
| 82.5° | 196.1 | 193.8 | 207.8 | 219.5 | 231.1 | 228.8 | 226.5 | 212.5 | 205.5 | 196.1 | 193.8 |
| 85° | 100.4 | 102.7 | 102.7 | 114.4 | 116.7 | 121.4 | 119.1 | 114.4 | 102.7 | 98.1 | 100.4 |
| 87.5° | 32.7 | 32.7 | 35.0 | 35.0 | 39.7 | 39.7 | 42.0 | 37.4 | 35.0 | 30.4 | 30.4 |
| 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: SP1-2407-176-3

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-730-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-730-U-WQ

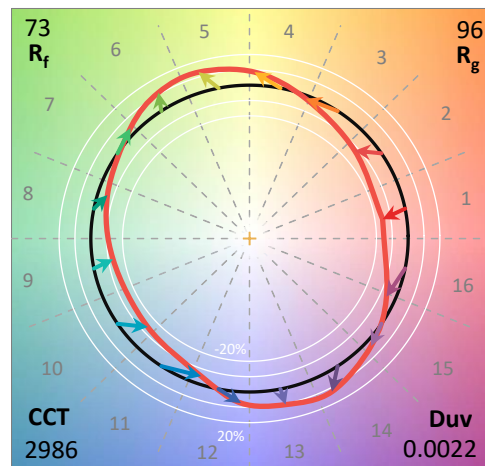
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-176-3
 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-30-730-U-WQ**
 Description: EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K): 2986
 CIE u': 0.2503
 CIE v': 0.5248
 Duv: 0.0022
 CIE x: 0.4413
 CIE y: 0.4112
 CIE z: 0.1476
 Peak Wavelength (nm): 596
 Dominant Wavelength (nm): 582
 Purity: 55.87534
 Rf: 73.2
 Rg: 95.9

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.3 | | |
| R1: | 68.5 | R9: | -25.2 |
| R2: | 79.2 | R10: | 51.0 |
| R3: | 88.4 | R11: | 63.6 |
| R4: | 69.4 | R12: | 39.8 |
| R5: | 66.3 | R13: | 69.9 |
| R6: | 70.0 | R14: | 92.9 |
| R7: | 80.1 | R15: | 61.4 |
| R8: | 48.3 | | |



Test Conditions

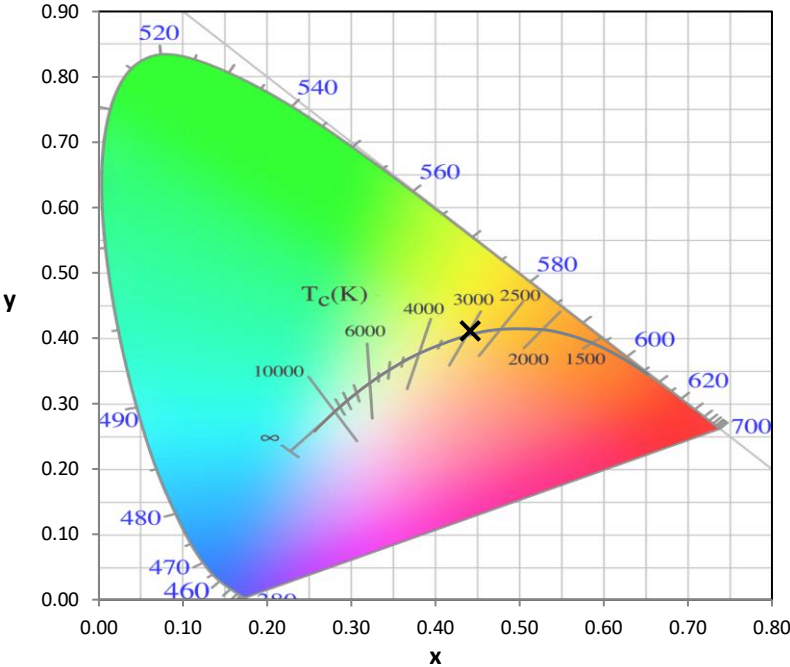
Stabilization Time: 27M
 Operation Time: 1H 27M
 Sphere Temperature (°C): 25.2

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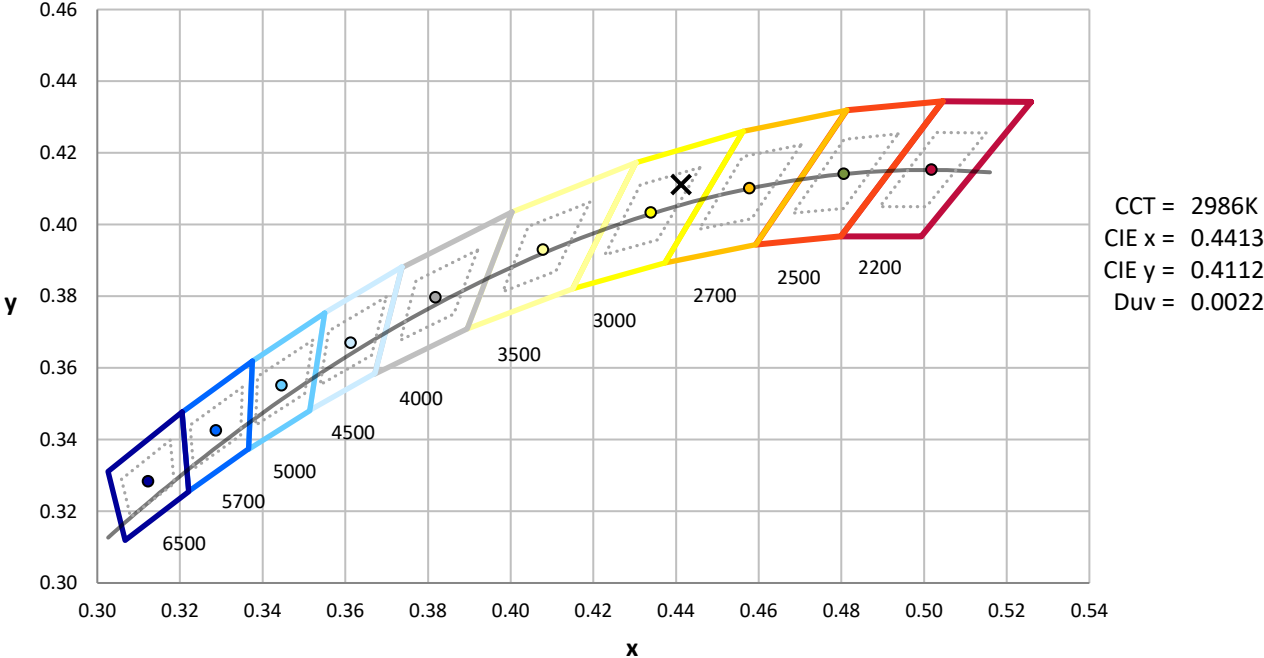
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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CIE 1931 Chromaticity Diagram



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

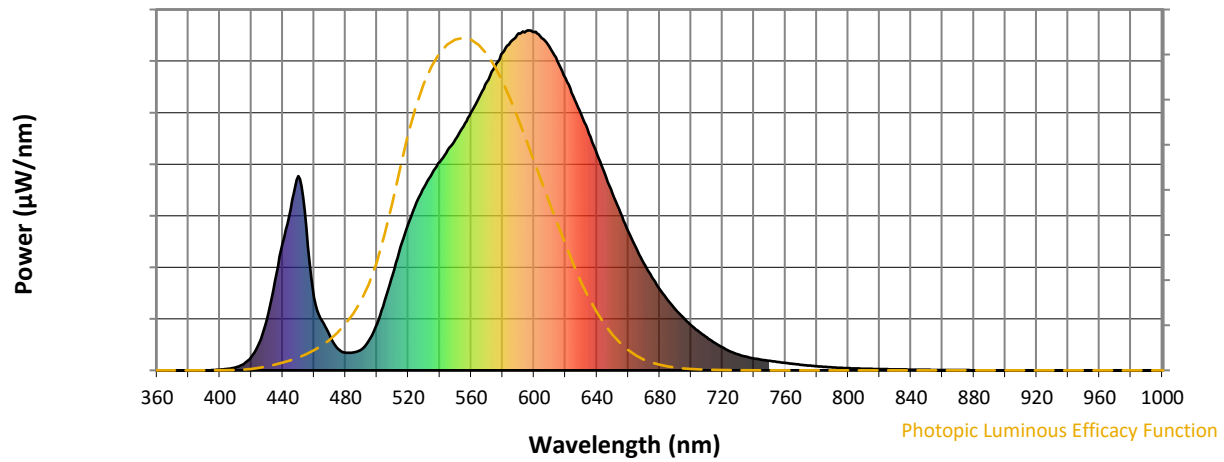


CCT = 2986K
 CIE x = 0.4413
 CIE y = 0.4112
 Duv = 0.0022

Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

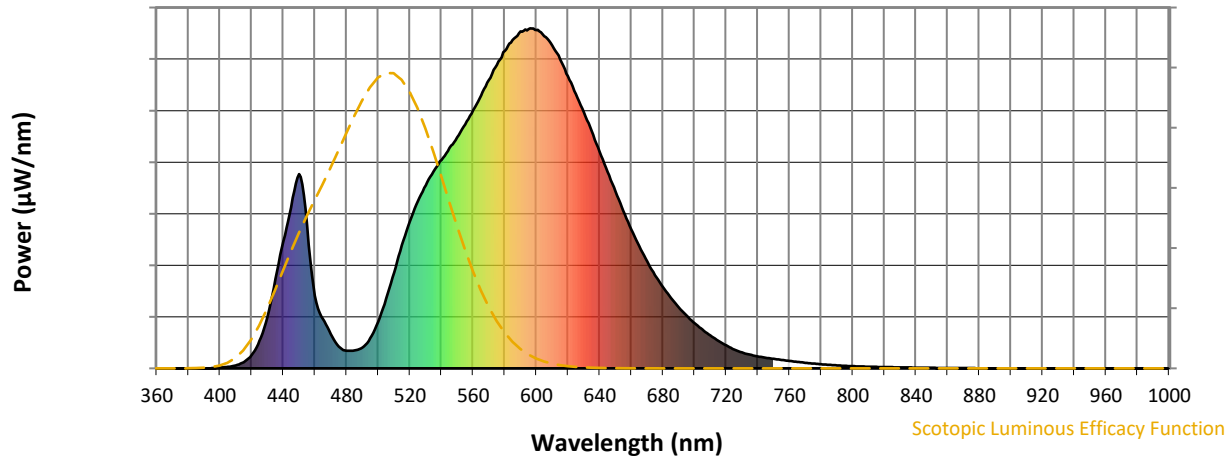


Photopic Lumens: NR

| 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 | 61 | NR | 620 | 859 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 88 | NR | 625 | 807 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 137 | NR | 630 | 753 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 205 | NR | 635 | 697 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 281 | NR | 640 | 637 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 363 | NR | 645 | 578 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 432 | NR | 650 | 520 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 492 | NR | 655 | 463 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 539 | NR | 660 | 409 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 579 | NR | 665 | 359 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 613 | NR | 670 | 315 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 648 | NR | 675 | 274 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 39 | NR | 550 | 680 | NR | 680 | 239 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 81 | NR | 555 | 717 | NR | 685 | 207 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 151 | NR | 560 | 759 | NR | 690 | 180 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 263 | NR | 565 | 803 | NR | 695 | 155 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 375 | NR | 570 | 848 | NR | 700 | 133 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 474 | NR | 575 | 892 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 571 | NR | 580 | 933 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 421 | NR | 585 | 966 | NR | 715 | 81 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 991 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 146 | NR | 595 | 998 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 101 | NR | 600 | 995 | NR | 730 | 47 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 64 | NR | 605 | 977 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 52 | NR | 610 | 949 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 53 | NR | 615 | 908 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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Scotopic Flux vs. Wavelength



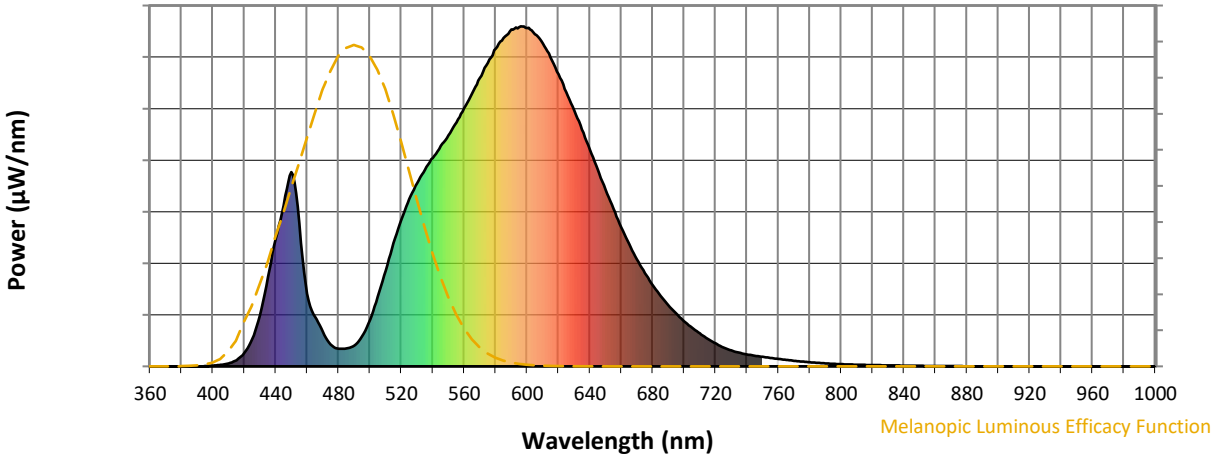
Scotopic Lumens: NR

S/P: 1.15

| 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 | 61 | NR | 620 | 859 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 88 | NR | 625 | 807 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 137 | NR | 630 | 753 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 205 | NR | 635 | 697 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 281 | NR | 640 | 637 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 363 | NR | 645 | 578 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 432 | NR | 650 | 520 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 492 | NR | 655 | 463 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 539 | NR | 660 | 409 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 579 | NR | 665 | 359 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 613 | NR | 670 | 315 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 648 | NR | 675 | 274 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 39 | NR | 550 | 680 | NR | 680 | 239 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 81 | NR | 555 | 717 | NR | 685 | 207 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 151 | NR | 560 | 759 | NR | 690 | 180 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 263 | NR | 565 | 803 | NR | 695 | 155 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 375 | NR | 570 | 848 | NR | 700 | 133 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 474 | NR | 575 | 892 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 571 | NR | 580 | 933 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 421 | NR | 585 | 966 | NR | 715 | 81 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 991 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 146 | NR | 595 | 998 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 101 | NR | 600 | 995 | NR | 730 | 47 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 64 | NR | 605 | 977 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 52 | NR | 610 | 949 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 53 | NR | 615 | 908 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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Melanopic Flux vs. Wavelength



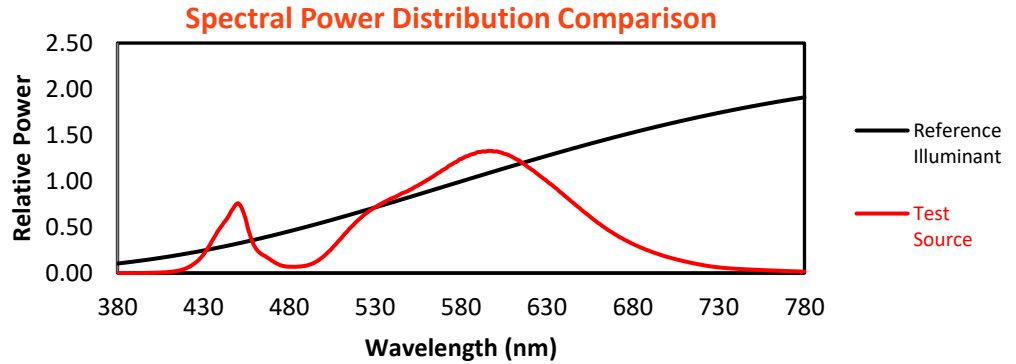
Melanopic Lumens: NR

M/P: 2.01

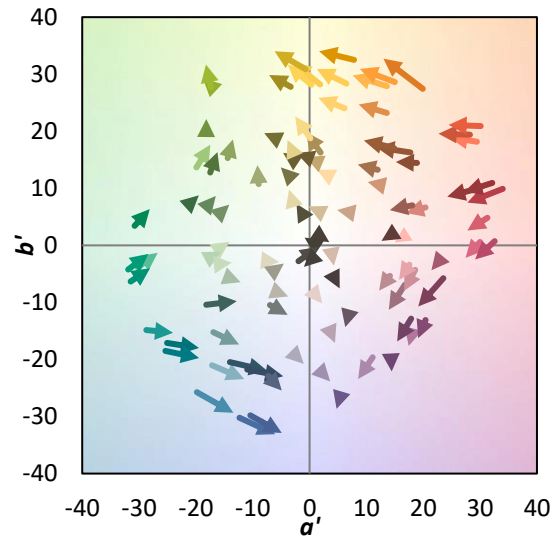
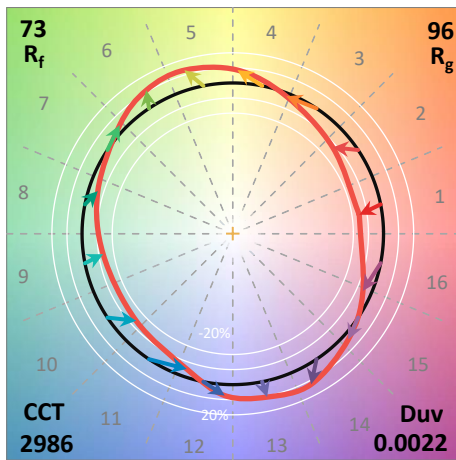
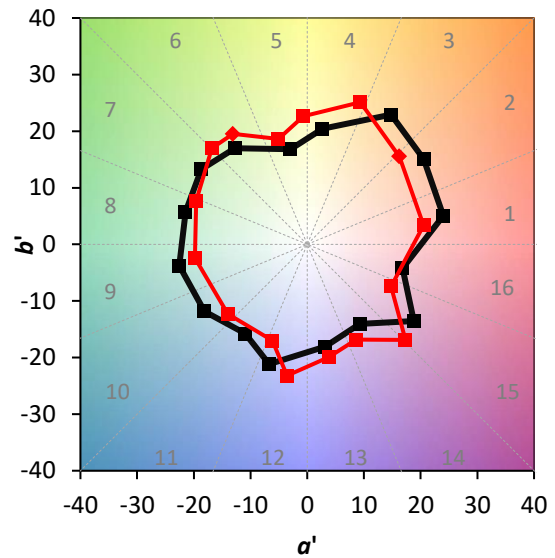
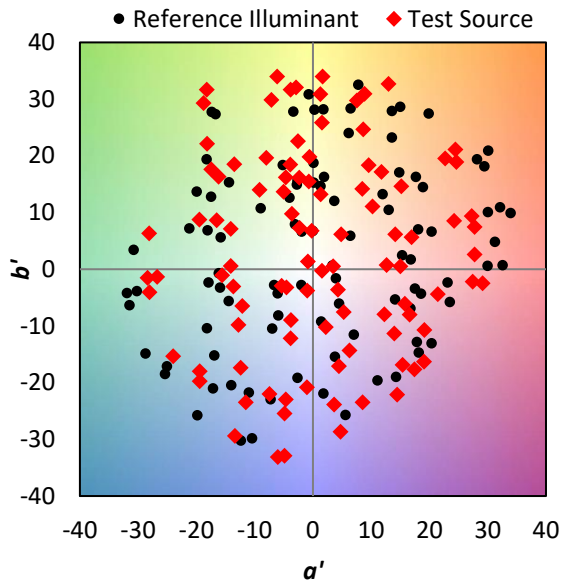
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 61 | NR | 620 | 859 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 88 | NR | 625 | 807 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 137 | NR | 630 | 753 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 205 | NR | 635 | 697 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 281 | NR | 640 | 637 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 363 | NR | 645 | 578 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 432 | NR | 650 | 520 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 492 | NR | 655 | 463 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 539 | NR | 660 | 409 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 579 | NR | 665 | 359 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 613 | NR | 670 | 315 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 648 | NR | 675 | 274 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 39 | NR | 550 | 680 | NR | 680 | 239 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 81 | NR | 555 | 717 | NR | 685 | 207 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 151 | NR | 560 | 759 | NR | 690 | 180 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 263 | NR | 565 | 803 | NR | 695 | 155 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 375 | NR | 570 | 848 | NR | 700 | 133 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 474 | NR | 575 | 892 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 571 | NR | 580 | 933 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 421 | NR | 585 | 966 | NR | 715 | 81 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 991 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 146 | NR | 595 | 998 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 101 | NR | 600 | 995 | NR | 730 | 47 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 64 | NR | 605 | 977 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 52 | NR | 610 | 949 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 53 | NR | 615 | 908 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 73.2$
 $R_g = 95.9$
 $CIE R_a = 71.3$
 $R_9 = -25.2$

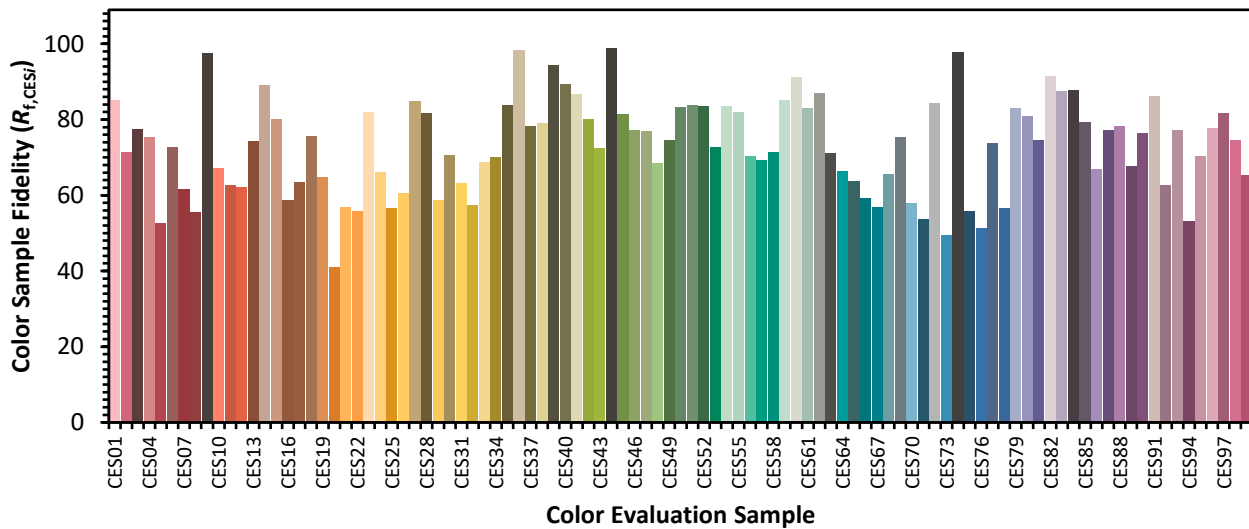


Color Vector Graphics

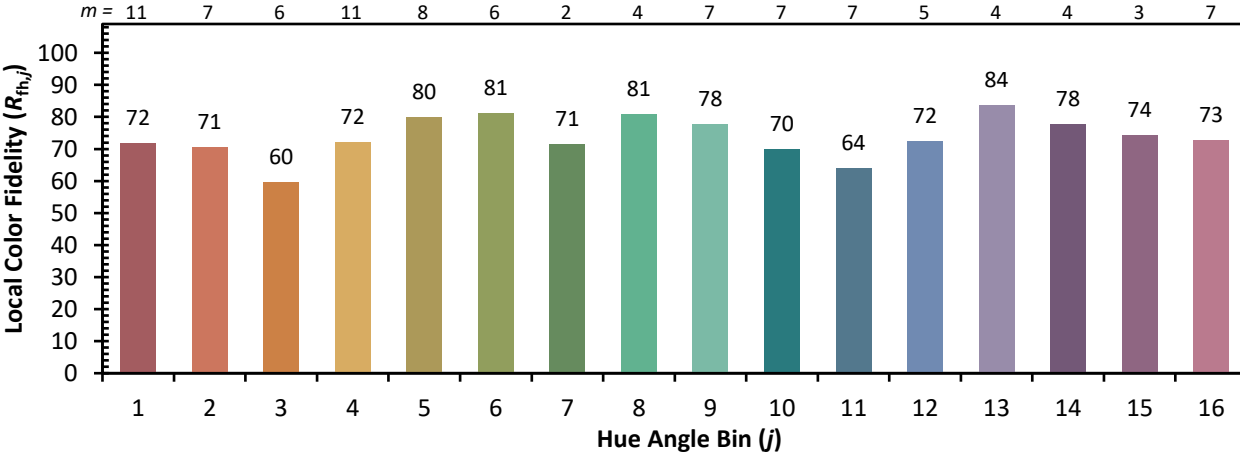
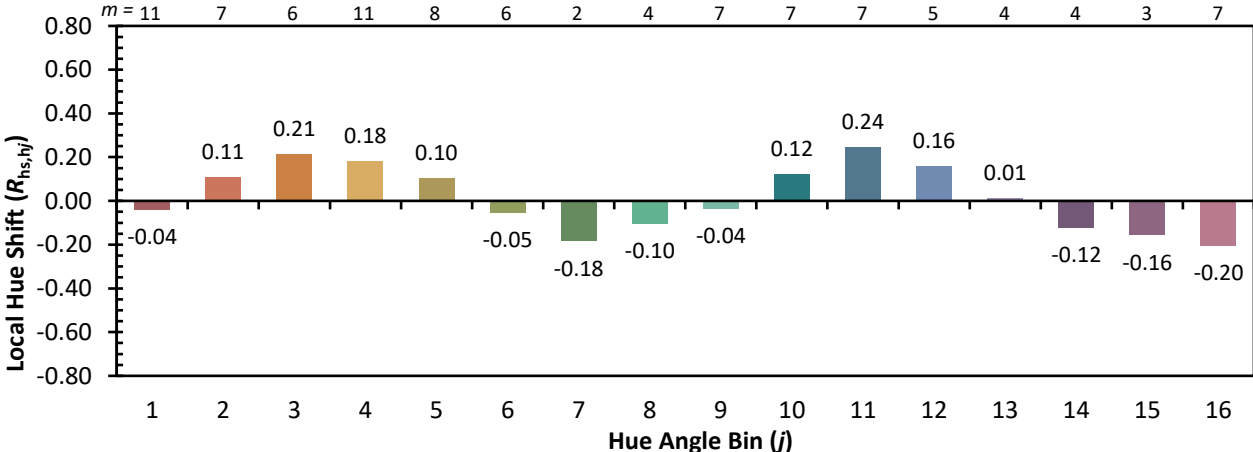
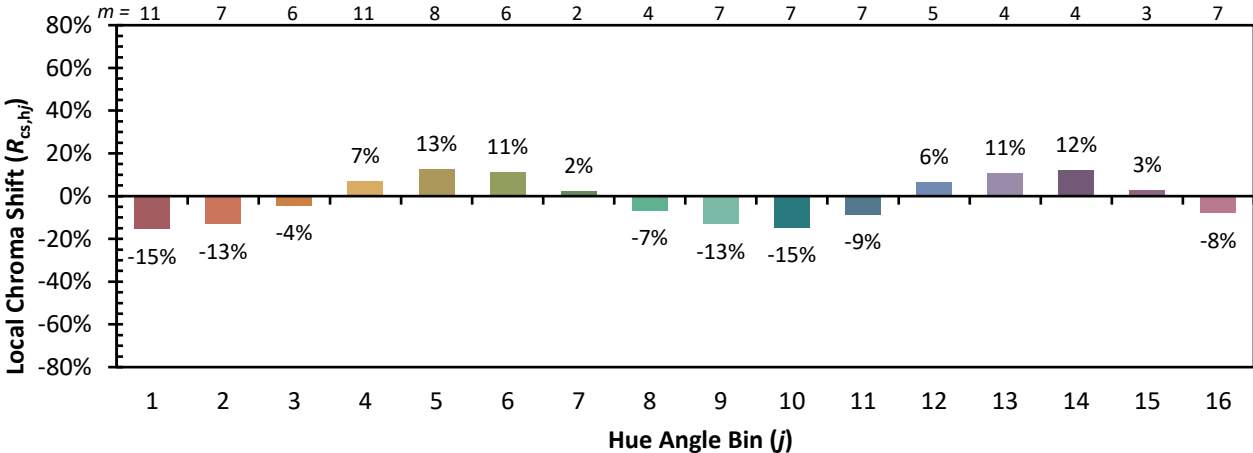


Individual Sample Fidelity Index ($R_{f,i}$)

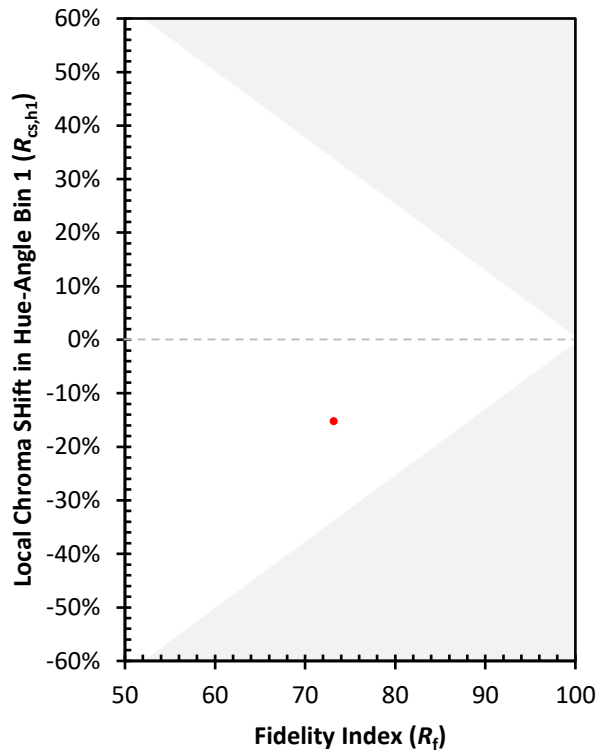
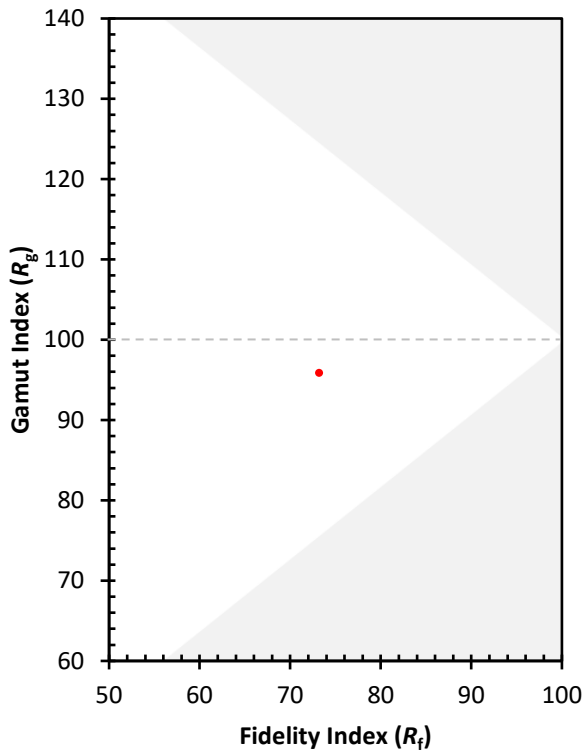
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 61 | CES51 = 84 | CES76 = 51 |
| CES02 = 62 | CES27 = 85 | CES52 = 84 | CES77 = 74 |
| CES03 = 31 | CES28 = 82 | CES53 = 73 | CES78 = 56 |
| CES04 = 71 | CES29 = 59 | CES54 = 84 | CES79 = 83 |
| CES05 = 49 | CES30 = 71 | CES55 = 82 | CES80 = 81 |
| CES06 = 51 | CES31 = 63 | CES56 = 70 | CES81 = 75 |
| CES07 = 41 | CES32 = 57 | CES57 = 69 | CES82 = 92 |
| CES08 = 40 | CES33 = 69 | CES58 = 71 | CES83 = 88 |
| CES09 = 29 | CES34 = 70 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 84 | CES60 = 91 | CES85 = 79 |
| CES11 = 59 | CES36 = 98 | CES61 = 83 | CES86 = 67 |
| CES12 = 65 | CES37 = 78 | CES62 = 87 | CES87 = 77 |
| CES13 = 43 | CES38 = 79 | CES63 = 71 | CES88 = 78 |
| CES14 = 74 | CES39 = 94 | CES64 = 66 | CES89 = 68 |
| CES15 = 71 | CES40 = 89 | CES65 = 64 | CES90 = 76 |
| CES16 = 47 | CES41 = 87 | CES66 = 59 | CES91 = 86 |
| CES17 = 50 | CES42 = 80 | CES67 = 57 | CES92 = 63 |
| CES18 = 56 | CES43 = 73 | CES68 = 66 | CES93 = 77 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 53 |
| CES20 = 66 | CES45 = 81 | CES70 = 58 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 54 | CES96 = 78 |
| CES22 = 79 | CES47 = 77 | CES72 = 84 | CES97 = 82 |
| CES23 = 92 | CES48 = 68 | CES73 = 49 | CES98 = 75 |
| CES24 = 91 | CES49 = 74 | CES74 = 98 | CES99 = 65 |
| CES25 = 73 | CES50 = 83 | CES75 = 56 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)