

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: P879747

Luminaire Tested: **EMM2-HSN-VA8-735-U-CQ**

Issue Date: 10/01/2024



Test Information

Test Method: LM-79-08
Report Number: P879747
Test Lab: INNOVATION CENTER(G3)
Issue Date: 10/01/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HSN-VA8-735-U-CQ
Description: EPIC MODERN SHORT HOUSING 8W 70CRI 3500K WAVESTREAM FIXTURE w/
TYPE V CONCENTRATED DISTRIBUTION OPTIC
Light Source: (1) 3500K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

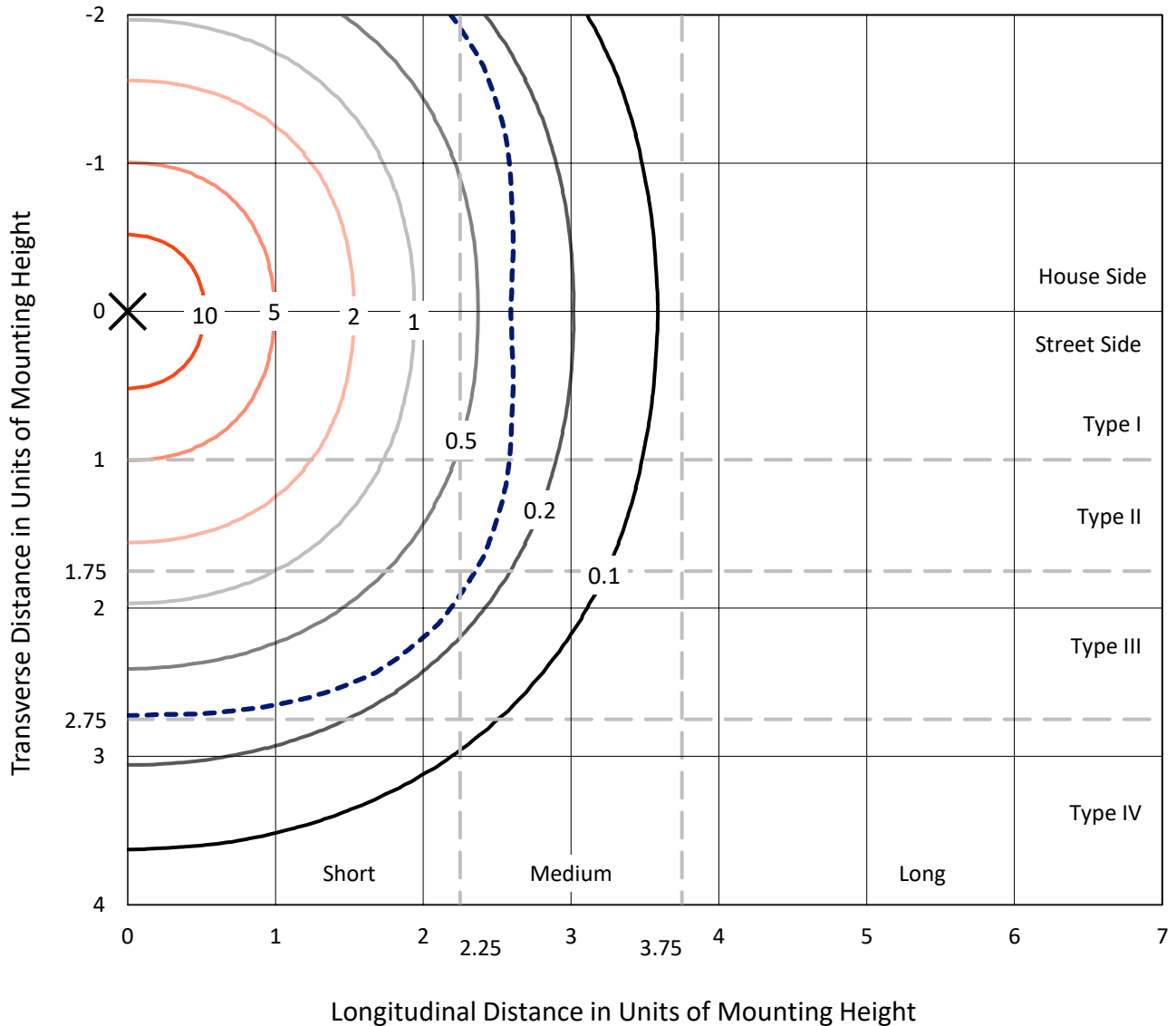
Lumens per Lamp: N/A
Luminaire Lumens: 13855.8 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short
BUG Rating: B3 - U0 - G2

Input Watts (W): 156
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.995
Total Harmonic Distortion (THDi): 6.6%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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 CATALOG NUMBER: EMM2-HSN-VA8-735-U-CQ

Iso-Footcandle Lines of Horizontal Illumination

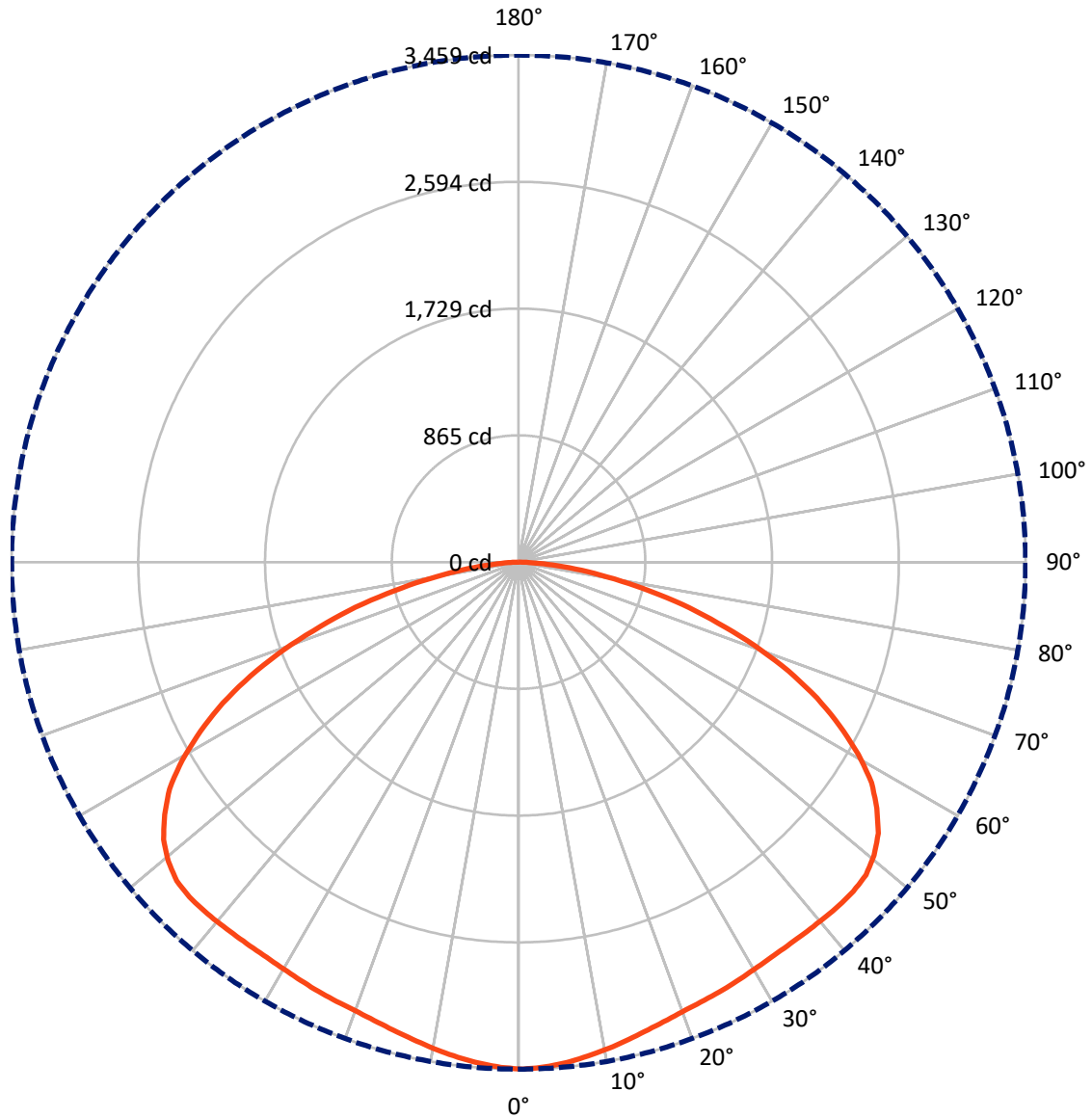
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 15.4 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 0-Deg Vertical

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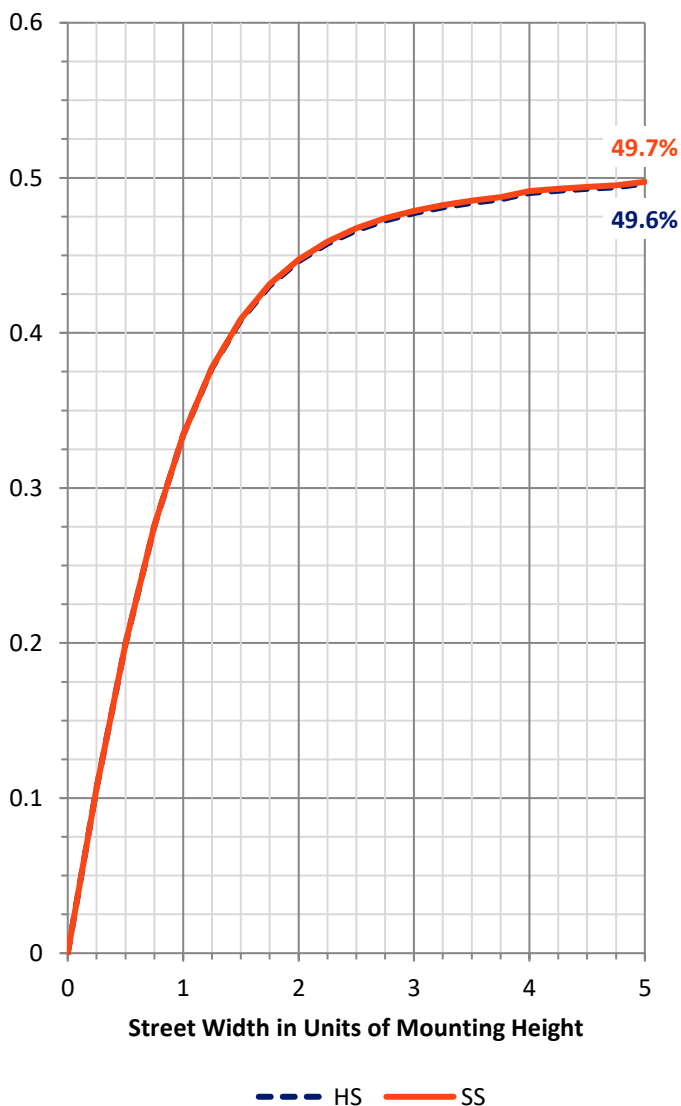
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6927.9 | 0.0 | 6927.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 6927.9 | 0.0 | 6927.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 13855.8 | 0.0 | 13855.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 325.9 | 2.4 |
| 10°-20° | 940.4 | 6.8 |
| 20°-30° | 1505.6 | 10.9 |
| 30°-40° | 2039.6 | 14.7 |
| 40°-50° | 2518.7 | 18.2 |
| 50°-60° | 2706.1 | 19.5 |
| 60°-70° | 2275.7 | 16.4 |
| 70°-80° | 1270.7 | 9.2 |
| 80°-90° | 273.0 | 2.0 |
| 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° | 13855.8 | 100.0 |
| 0°-180° | 13855.8 | 100.0 |



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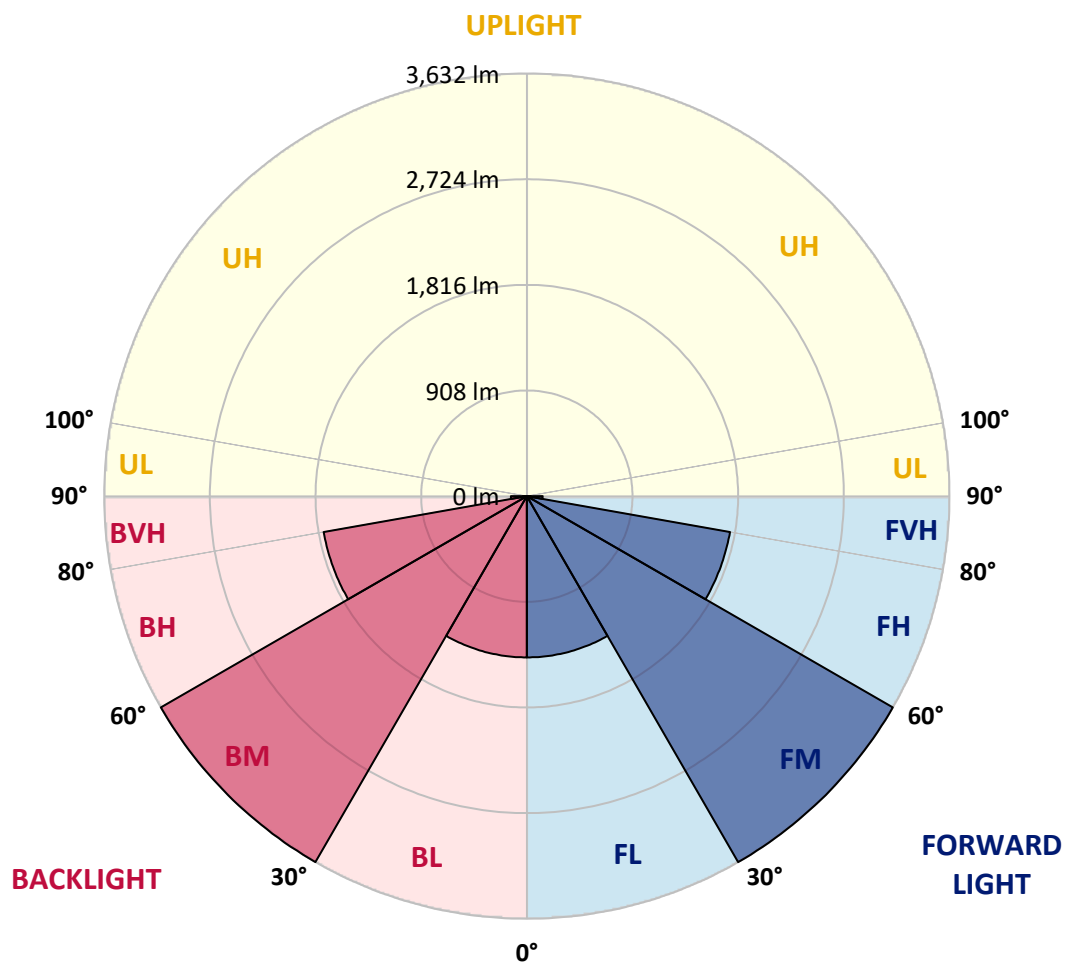
CATALOG NUMBER: EMM2-HSN-VA8-735-U-CQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1386.0 | 10.0 | | | |
| FM (30°-60°) | 3632.2 | 26.2 | | | |
| FH (60°-80°) | 1773.2 | 12.8 | | | G1/1800 |
| FVH (80°-90°) | 136.5 | 1.0 | | | G2/225 |
| BL (0°-30°) | 1386.0 | 10.0 | B3/2500 | | |
| BM (30°-60°) | 3632.2 | 26.2 | B3/5000 | | |
| BH (60°-80°) | 1773.2 | 12.8 | B3/2500 | | G1/1800 |
| BVH (80°-90°) | 136.5 | 1.0 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G2

Type V Short





REPORT NUMBER: P879747

CATALOG NUMBER: EMM2-HSN-VA8-735-U-CQ

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 | 3458.6 |
| 2.5° | 3448.3 | 3451.7 | 3450.8 | 3450.8 | 3450.8 | 3452.6 | 3452.6 | 3452.6 | 3453.4 | 3453.4 | 3454.3 |
| 5° | 3428.5 | 3431.1 | 3431.1 | 3431.1 | 3432.8 | 3433.7 | 3433.7 | 3434.5 | 3436.2 | 3435.4 | 3434.5 |
| 7.5° | 3401.9 | 3404.5 | 3404.5 | 3404.5 | 3406.2 | 3407.9 | 3407.9 | 3407.0 | 3409.6 | 3409.6 | 3408.7 |
| 10° | 3373.5 | 3374.4 | 3375.2 | 3377.0 | 3379.5 | 3380.4 | 3379.5 | 3379.5 | 3378.7 | 3379.5 | 3379.5 |
| 12.5° | 3340.0 | 3344.3 | 3345.2 | 3346.9 | 3351.2 | 3352.0 | 3352.0 | 3351.2 | 3350.3 | 3350.3 | 3349.5 |
| 15° | 3310.0 | 3311.7 | 3314.3 | 3317.7 | 3322.8 | 3324.6 | 3325.4 | 3322.8 | 3320.3 | 3319.4 | 3320.3 |
| 17.5° | 3282.5 | 3285.0 | 3288.5 | 3291.9 | 3298.8 | 3302.2 | 3302.2 | 3298.8 | 3295.4 | 3293.6 | 3293.6 |
| 20° | 3260.1 | 3262.7 | 3267.0 | 3272.2 | 3281.6 | 3285.9 | 3284.2 | 3280.7 | 3274.7 | 3272.2 | 3273.0 |
| 22.5° | 3245.5 | 3249.0 | 3252.4 | 3260.1 | 3270.4 | 3275.6 | 3273.9 | 3267.9 | 3261.0 | 3256.7 | 3256.7 |
| 25° | 3233.5 | 3236.1 | 3241.2 | 3251.5 | 3262.7 | 3268.7 | 3266.1 | 3258.4 | 3249.0 | 3243.8 | 3242.9 |
| 27.5° | 3219.8 | 3223.2 | 3230.1 | 3243.8 | 3257.6 | 3262.7 | 3261.0 | 3249.8 | 3238.7 | 3231.8 | 3230.1 |
| 30° | 3206.9 | 3210.3 | 3219.8 | 3235.2 | 3252.4 | 3260.1 | 3255.8 | 3243.8 | 3230.1 | 3221.5 | 3220.6 |
| 32.5° | 3198.3 | 3202.6 | 3213.7 | 3233.5 | 3254.1 | 3265.3 | 3261.0 | 3246.4 | 3228.3 | 3217.2 | 3216.3 |
| 35° | 3194.8 | 3199.1 | 3215.5 | 3239.5 | 3265.3 | 3280.7 | 3274.7 | 3256.7 | 3234.4 | 3220.6 | 3218.9 |
| 37.5° | 3195.7 | 3200.9 | 3221.5 | 3253.3 | 3285.9 | 3302.2 | 3294.5 | 3271.3 | 3242.9 | 3224.0 | 3221.5 |
| 40° | 3199.1 | 3205.2 | 3231.8 | 3271.3 | 3310.0 | 3325.4 | 3313.4 | 3279.0 | 3240.4 | 3213.7 | 3208.6 |
| 42.5° | 3203.4 | 3212.9 | 3245.5 | 3291.9 | 3332.3 | 3345.2 | 3323.7 | 3273.0 | 3218.9 | 3184.5 | 3180.2 |
| 45° | 3202.6 | 3210.3 | 3248.1 | 3303.1 | 3346.0 | 3352.9 | 3317.7 | 3254.1 | 3190.5 | 3145.9 | 3142.4 |
| 47.5° | 3188.0 | 3195.7 | 3238.7 | 3299.6 | 3341.7 | 3343.5 | 3301.4 | 3228.3 | 3153.6 | 3102.1 | 3096.9 |
| 50° | 3142.4 | 3152.7 | 3200.9 | 3267.9 | 3315.1 | 3316.0 | 3269.6 | 3188.8 | 3102.1 | 3041.9 | 3033.3 |
| 52.5° | 3072.9 | 3080.6 | 3136.4 | 3208.6 | 3261.8 | 3268.7 | 3218.0 | 3124.4 | 3025.6 | 2961.2 | 2955.2 |
| 55° | 2964.6 | 2980.1 | 3039.4 | 3114.9 | 3173.4 | 3181.1 | 3130.4 | 3029.0 | 2927.7 | 2853.8 | 2846.9 |
| 57.5° | 2839.2 | 2841.8 | 2904.5 | 2986.9 | 3047.9 | 3056.5 | 3001.6 | 2898.5 | 2792.8 | 2724.1 | 2706.9 |
| 60° | 2662.2 | 2672.5 | 2731.8 | 2812.6 | 2877.0 | 2888.2 | 2835.8 | 2736.1 | 2626.1 | 2548.0 | 2547.1 |
| 62.5° | 2457.8 | 2469.8 | 2529.9 | 2615.8 | 2681.1 | 2692.3 | 2636.5 | 2539.4 | 2429.4 | 2362.4 | 2338.4 |
| 65° | 2236.1 | 2239.6 | 2299.7 | 2384.7 | 2444.0 | 2450.0 | 2406.2 | 2314.3 | 2200.9 | 2132.2 | 2116.7 |
| 67.5° | 1987.0 | 1990.4 | 2036.8 | 2116.7 | 2180.3 | 2188.9 | 2144.2 | 2060.0 | 1957.8 | 1885.6 | 1877.9 |
| 70° | 1711.2 | 1712.1 | 1757.6 | 1822.9 | 1886.5 | 1904.5 | 1864.2 | 1783.4 | 1685.5 | 1627.9 | 1612.5 |
| 72.5° | 1420.9 | 1428.6 | 1469.0 | 1536.9 | 1591.0 | 1595.3 | 1562.6 | 1493.0 | 1413.2 | 1365.9 | 1357.3 |
| 75° | 1155.4 | 1150.3 | 1184.6 | 1225.9 | 1268.0 | 1281.7 | 1255.1 | 1207.8 | 1134.0 | 1092.7 | 1101.3 |
| 77.5° | 867.6 | 869.4 | 896.0 | 933.8 | 960.4 | 984.5 | 954.4 | 932.1 | 872.8 | 825.6 | 827.3 |
| 80° | 613.4 | 611.7 | 636.6 | 654.6 | 684.7 | 688.1 | 671.8 | 641.7 | 603.9 | 584.2 | 582.4 |
| 82.5° | 388.3 | 380.6 | 399.5 | 422.7 | 435.5 | 429.5 | 433.0 | 413.2 | 383.1 | 372.8 | 363.4 |
| 85° | 198.4 | 196.7 | 207.0 | 215.6 | 225.1 | 225.1 | 219.9 | 204.5 | 198.4 | 186.4 | 183.0 |
| 87.5° | 67.9 | 70.4 | 73.9 | 71.3 | 75.6 | 73.9 | 72.2 | 61.0 | 54.1 | 50.7 | 47.2 |
| 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: SP1-2407-176-8

Test Date: 09/25/2024

Luminaire Tested: MEM2-HTN-VA-130-735-U-RW

Data in this report applies to families of products including MEM2-HTN-VA-130-735-U-RW

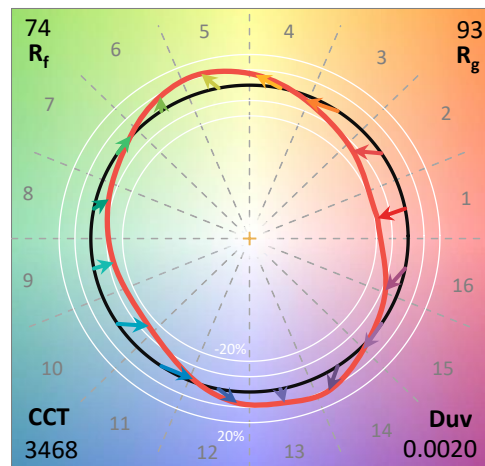
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-176-8
 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-130-735-U-RW**
 Description: EPIC MODERN VISUAL COMFORT 130W WAVESTREAM RECTANGULAR WIDE

Spectral Parameters

CCT (K): 3468
 CIE u': 0.2356
 CIE v': 0.5145
 Duv: 0.0020
 CIE x: 0.4092
 CIE y: 0.3972
 CIE z: 0.1936
 Peak Wavelength (nm): 590
 Dominant Wavelength (nm): 580
 Purity: 42.03411
 Rf: 74.1
 Rg: 93.4

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 70.6 | | |
| R1: | 66.2 | R9: | -41.3 |
| R2: | 79.1 | R10: | 52.2 |
| R3: | 90.8 | R11: | 63.6 |
| R4: | 68.4 | R12: | 47.5 |
| R5: | 66.3 | R13: | 68.3 |
| R6: | 71.1 | R14: | 94.8 |
| R7: | 78.4 | R15: | 57.6 |
| R8: | 44.5 | | |



Test Conditions

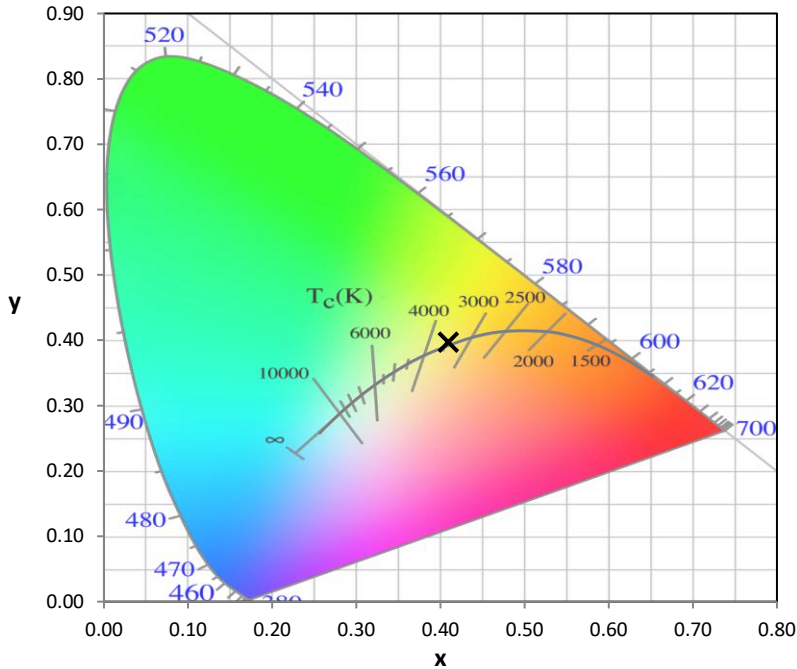
Stabilization Time: 46M
 Operation Time: 1H 46M
 Sphere Temperature (°C): 25.2

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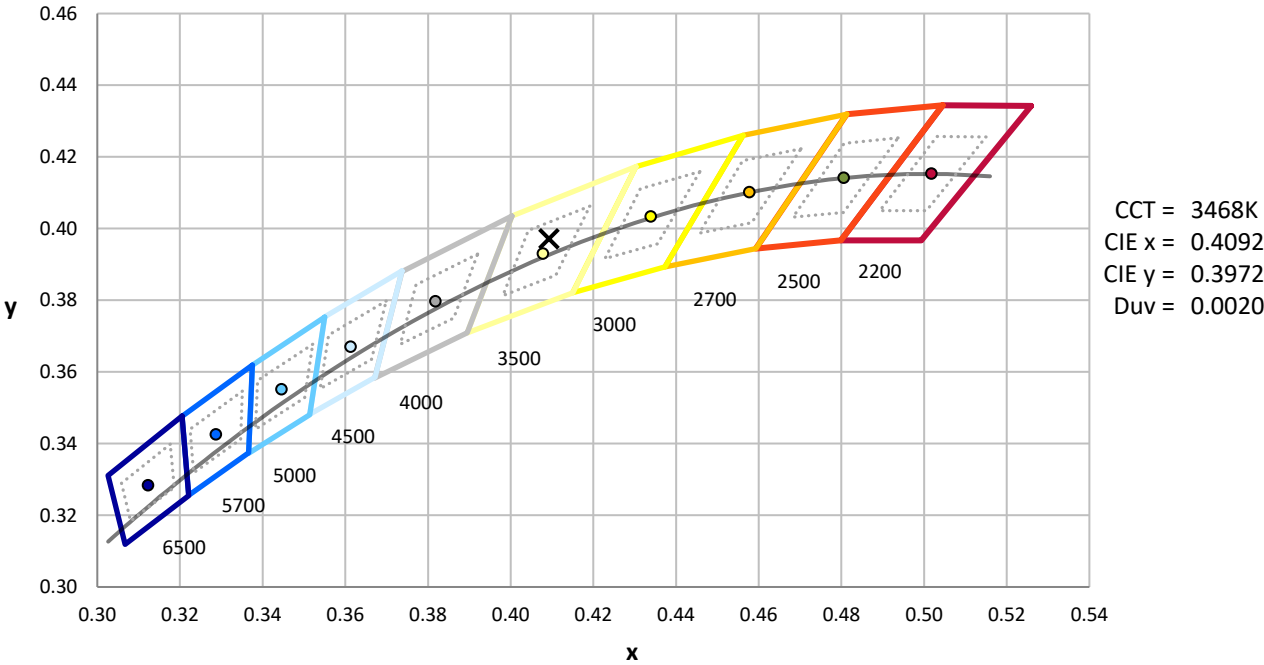
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 |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



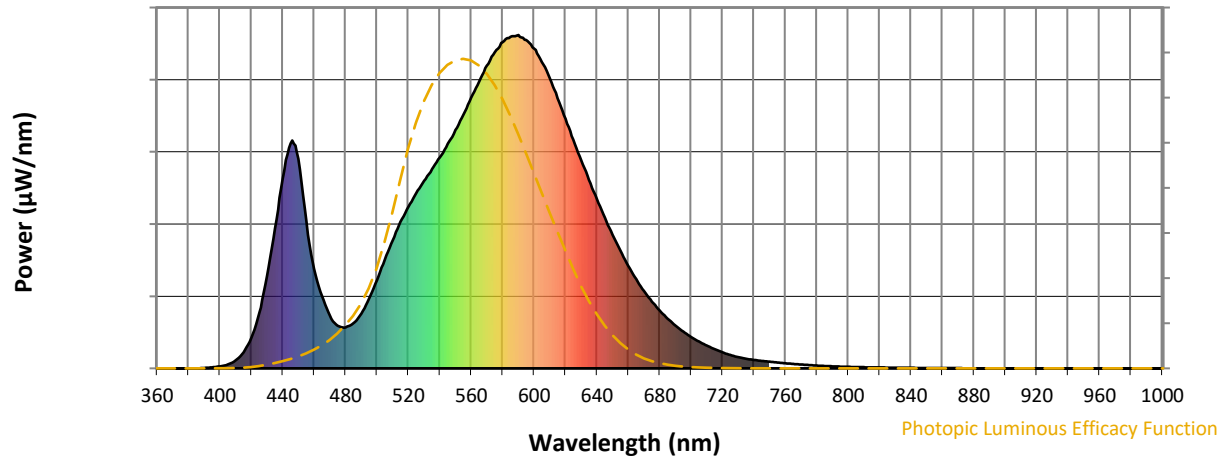
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 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 | 164 | NR | 620 | 749 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 209 | NR | 625 | 686 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 265 | NR | 630 | 624 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 325 | NR | 635 | 566 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 384 | NR | 640 | 508 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 439 | NR | 645 | 452 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 485 | NR | 650 | 401 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 526 | NR | 655 | 353 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 562 | NR | 660 | 308 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 598 | NR | 665 | 268 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 633 | NR | 670 | 232 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 48 | NR | 545 | 674 | NR | 675 | 200 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 91 | NR | 550 | 715 | NR | 680 | 174 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 166 | NR | 555 | 761 | NR | 685 | 149 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 276 | NR | 560 | 812 | NR | 690 | 129 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 420 | NR | 565 | 860 | NR | 695 | 110 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 568 | NR | 570 | 908 | NR | 700 | 94 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 675 | NR | 575 | 948 | NR | 705 | 80 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 629 | NR | 580 | 978 | NR | 710 | 68 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 443 | NR | 585 | 994 | NR | 715 | 58 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 299 | NR | 590 | 1000 | NR | 720 | 48 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 217 | NR | 595 | 985 | NR | 725 | 40 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 959 | NR | 730 | 34 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 127 | NR | 605 | 918 | NR | 735 | 29 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 123 | NR | 610 | 869 | NR | 740 | 25 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 135 | NR | 615 | 810 | NR | 745 | 22 | NR | 875 | 0 | NR | | | |

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Scotopic Flux vs. Wavelength



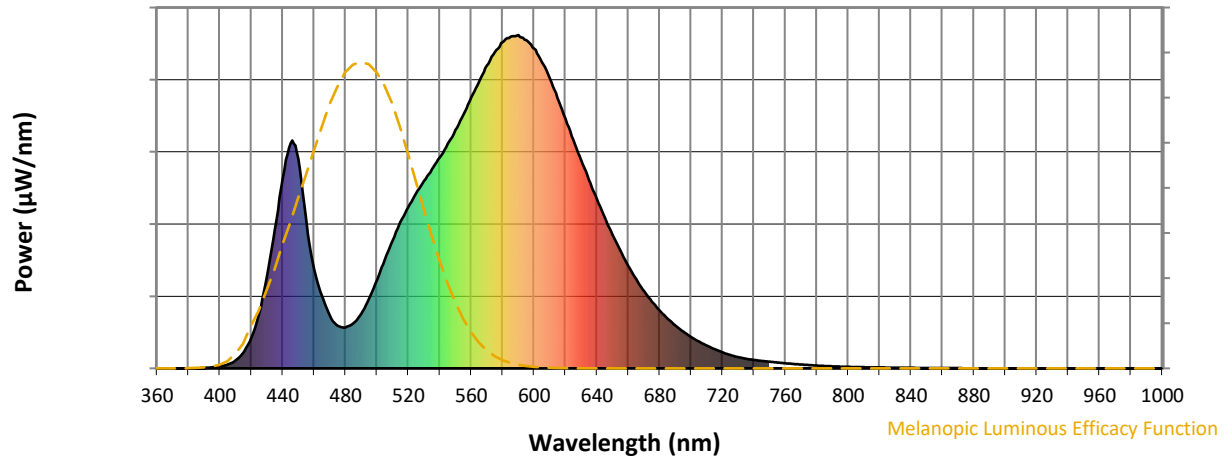
Scotopic Lumens: NR

S/P: 1.35

| 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 | 164 | NR | 620 | 749 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 209 | NR | 625 | 686 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 265 | NR | 630 | 624 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 325 | NR | 635 | 566 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 384 | NR | 640 | 508 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 439 | NR | 645 | 452 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 485 | NR | 650 | 401 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 526 | NR | 655 | 353 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 562 | NR | 660 | 308 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 598 | NR | 665 | 268 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 633 | NR | 670 | 232 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 48 | NR | 545 | 674 | NR | 675 | 200 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 91 | NR | 550 | 715 | NR | 680 | 174 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 166 | NR | 555 | 761 | NR | 685 | 149 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 276 | NR | 560 | 812 | NR | 690 | 129 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 420 | NR | 565 | 860 | NR | 695 | 110 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 568 | NR | 570 | 908 | NR | 700 | 94 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 675 | NR | 575 | 948 | NR | 705 | 80 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 629 | NR | 580 | 978 | NR | 710 | 68 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 443 | NR | 585 | 994 | NR | 715 | 58 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 299 | NR | 590 | 1000 | NR | 720 | 48 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 217 | NR | 595 | 985 | NR | 725 | 40 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 959 | NR | 730 | 34 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 127 | NR | 605 | 918 | NR | 735 | 29 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 123 | NR | 610 | 869 | NR | 740 | 25 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 135 | NR | 615 | 810 | NR | 745 | 22 | NR | 875 | 0 | NR | | | |

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Melanopic Flux vs. Wavelength



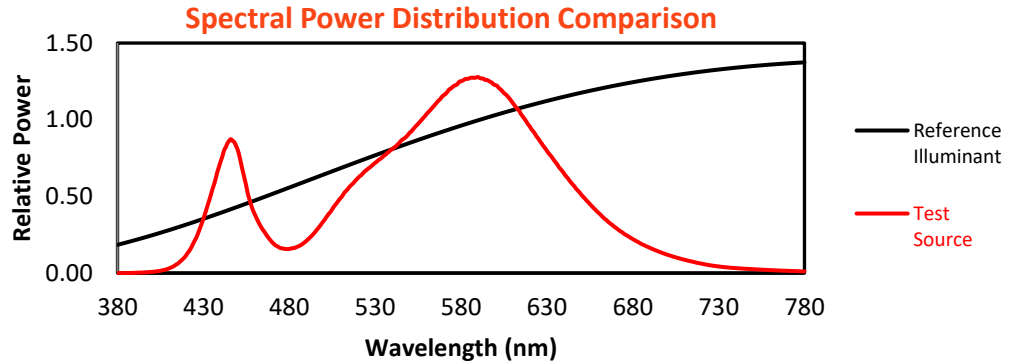
Melanopic Lumens: NR

M/P: 2.54

| 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 | 164 | NR | 620 | 749 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 209 | NR | 625 | 686 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 265 | NR | 630 | 624 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 325 | NR | 635 | 566 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 384 | NR | 640 | 508 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 439 | NR | 645 | 452 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 485 | NR | 650 | 401 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 526 | NR | 655 | 353 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 562 | NR | 660 | 308 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 598 | NR | 665 | 268 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 633 | NR | 670 | 232 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 48 | NR | 545 | 674 | NR | 675 | 200 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 91 | NR | 550 | 715 | NR | 680 | 174 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 166 | NR | 555 | 761 | NR | 685 | 149 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 276 | NR | 560 | 812 | NR | 690 | 129 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 420 | NR | 565 | 860 | NR | 695 | 110 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 568 | NR | 570 | 908 | NR | 700 | 94 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 675 | NR | 575 | 948 | NR | 705 | 80 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 629 | NR | 580 | 978 | NR | 710 | 68 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 443 | NR | 585 | 994 | NR | 715 | 58 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 299 | NR | 590 | 1000 | NR | 720 | 48 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 217 | NR | 595 | 985 | NR | 725 | 40 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 959 | NR | 730 | 34 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 127 | NR | 605 | 918 | NR | 735 | 29 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 123 | NR | 610 | 869 | NR | 740 | 25 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 135 | NR | 615 | 810 | NR | 745 | 22 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 74.1$
 $R_g = 93.4$
 $CIE R_a = 70.6$
 $R_9 = -41.3$

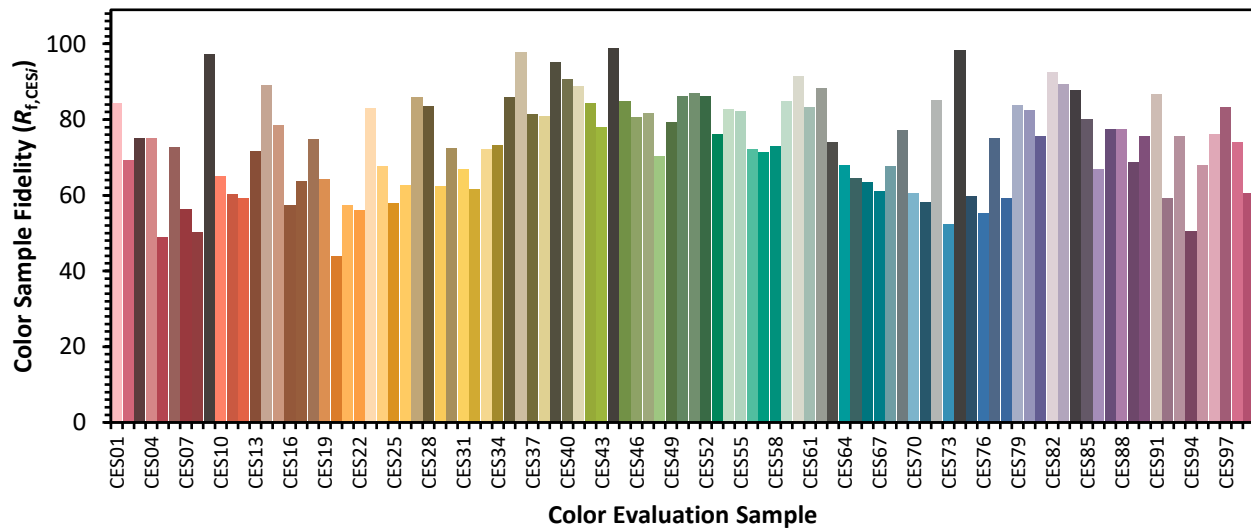


Color Vector Graphics

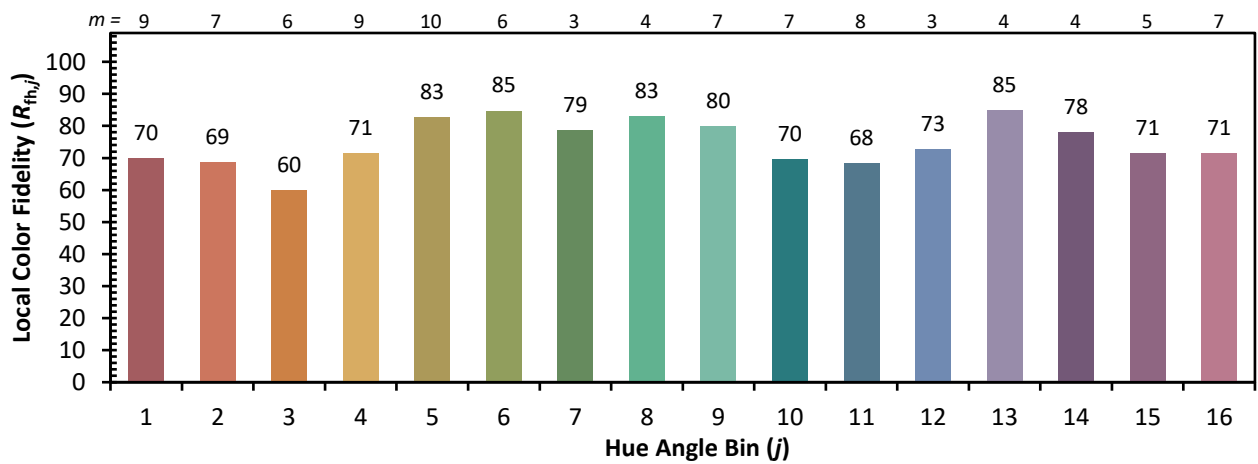
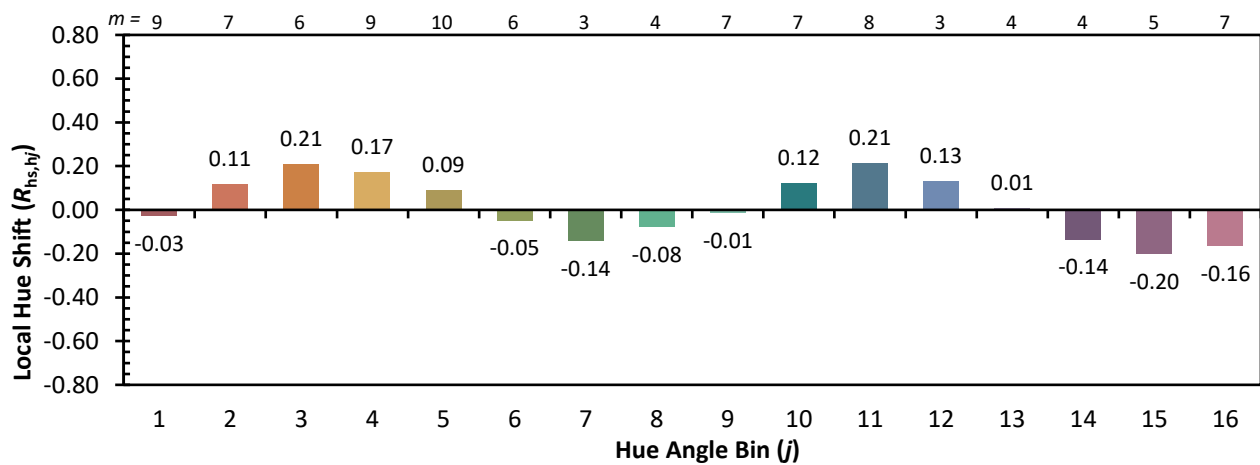
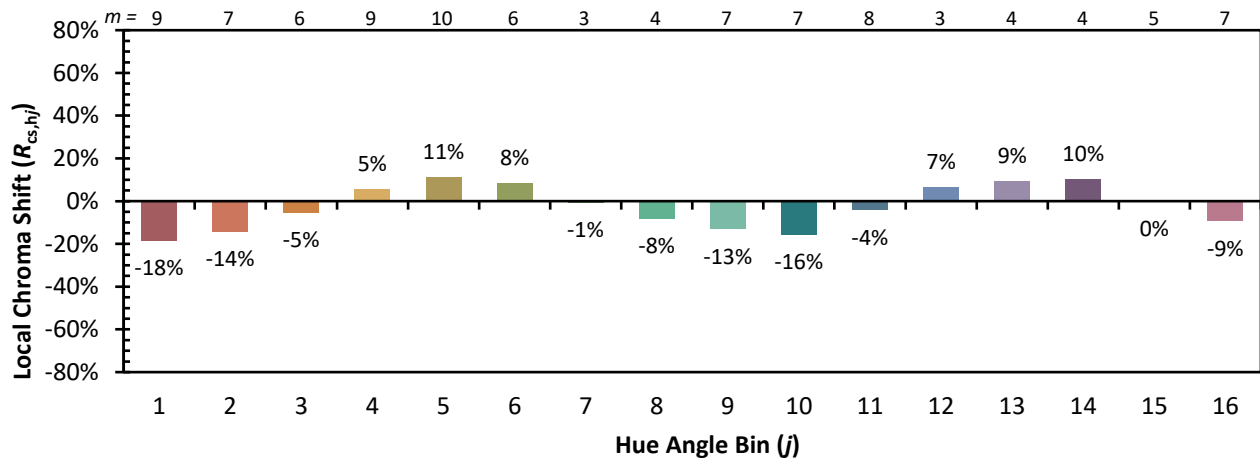


Individual Sample Fidelity Index ($R_{f,i}$)

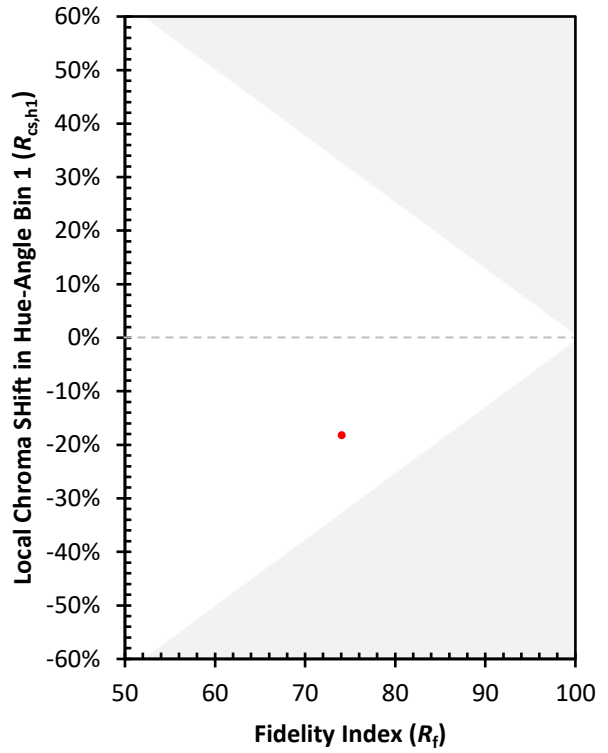
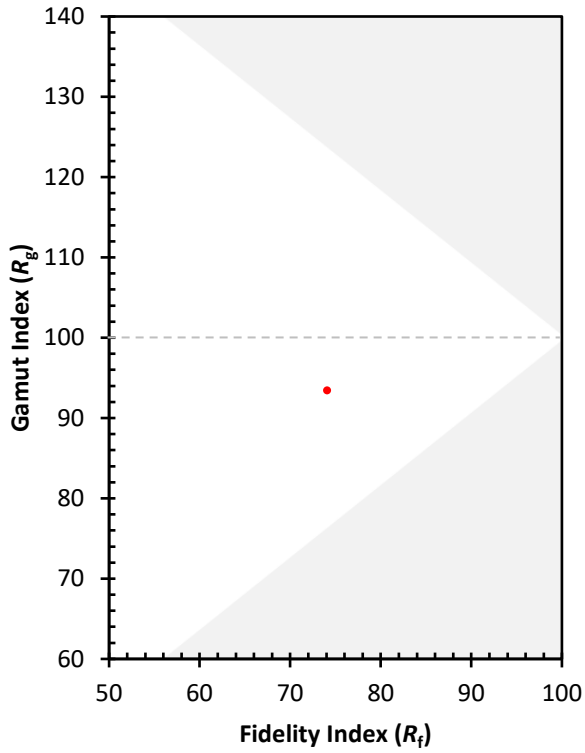
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 87 | CES76 = 55 |
| CES02 = 61 | CES27 = 86 | CES52 = 86 | CES77 = 75 |
| CES03 = 31 | CES28 = 84 | CES53 = 76 | CES78 = 59 |
| CES04 = 70 | CES29 = 62 | CES54 = 83 | CES79 = 84 |
| CES05 = 48 | CES30 = 72 | CES55 = 82 | CES80 = 82 |
| CES06 = 51 | CES31 = 67 | CES56 = 72 | CES81 = 76 |
| CES07 = 40 | CES32 = 62 | CES57 = 71 | CES82 = 93 |
| CES08 = 39 | CES33 = 72 | CES58 = 73 | CES83 = 89 |
| CES09 = 29 | CES34 = 73 | CES59 = 85 | CES84 = 88 |
| CES10 = 75 | CES35 = 86 | CES60 = 92 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 83 | CES86 = 67 |
| CES12 = 64 | CES37 = 82 | CES62 = 88 | CES87 = 78 |
| CES13 = 42 | CES38 = 81 | CES63 = 74 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 68 | CES89 = 69 |
| CES15 = 71 | CES40 = 91 | CES65 = 64 | CES90 = 76 |
| CES16 = 47 | CES41 = 89 | CES66 = 63 | CES91 = 87 |
| CES17 = 50 | CES42 = 84 | CES67 = 61 | CES92 = 59 |
| CES18 = 56 | CES43 = 78 | CES68 = 68 | CES93 = 76 |
| CES19 = 72 | CES44 = 99 | CES69 = 77 | CES94 = 50 |
| CES20 = 65 | CES45 = 85 | CES70 = 61 | CES95 = 68 |
| CES21 = 87 | CES46 = 81 | CES71 = 58 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 85 | CES97 = 83 |
| CES23 = 92 | CES48 = 70 | CES73 = 52 | CES98 = 74 |
| CES24 = 91 | CES49 = 79 | CES74 = 98 | CES99 = 61 |
| CES25 = 72 | CES50 = 86 | CES75 = 60 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)