

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: P868675

Luminaire Tested: **EMM2-HTN-SA3B-730-U-T5R**

Issue Date: 08/22/2024



Test Information

Test Method: LM-79-08
Report Number: P868675
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/22/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HTN-SA3B-730-U-T5R
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 150W 70CRI 3000K
FIXTURE w/ TYPE V ROUND DISTRIBUTION OPTIC
Light Source: (30) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

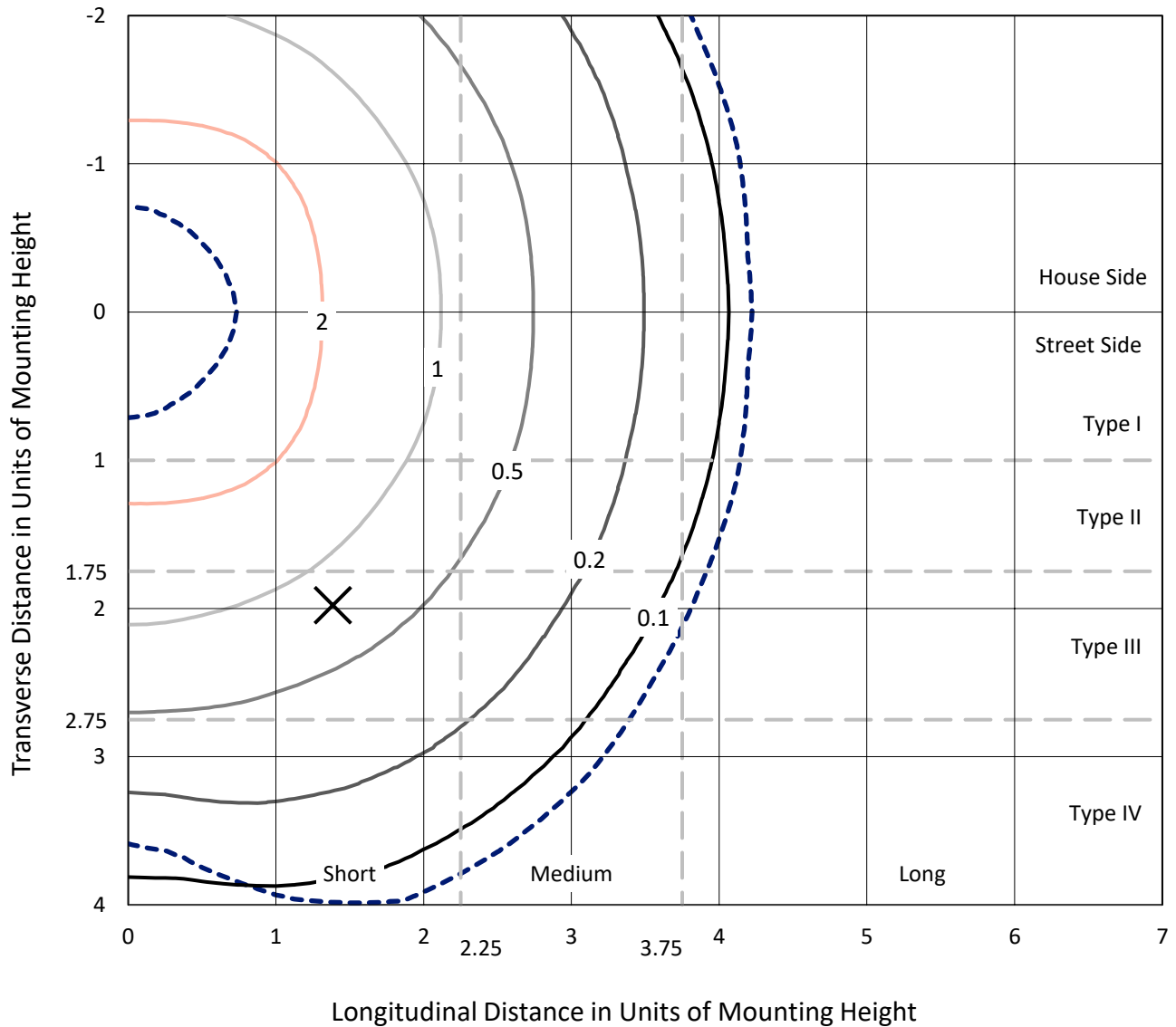
Lumens per Lamp: N/A
Luminaire Lumens: 18428.2 lumens
Efficiency: N/A
Efficacy: 137.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G2

Input Watts (W): 134
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 6.70%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P868675
 CATALOG NUMBER: EMM2-HTN-SA3B-730-U-T5R

Iso-Footcandle Lines of Horizontal Illumination

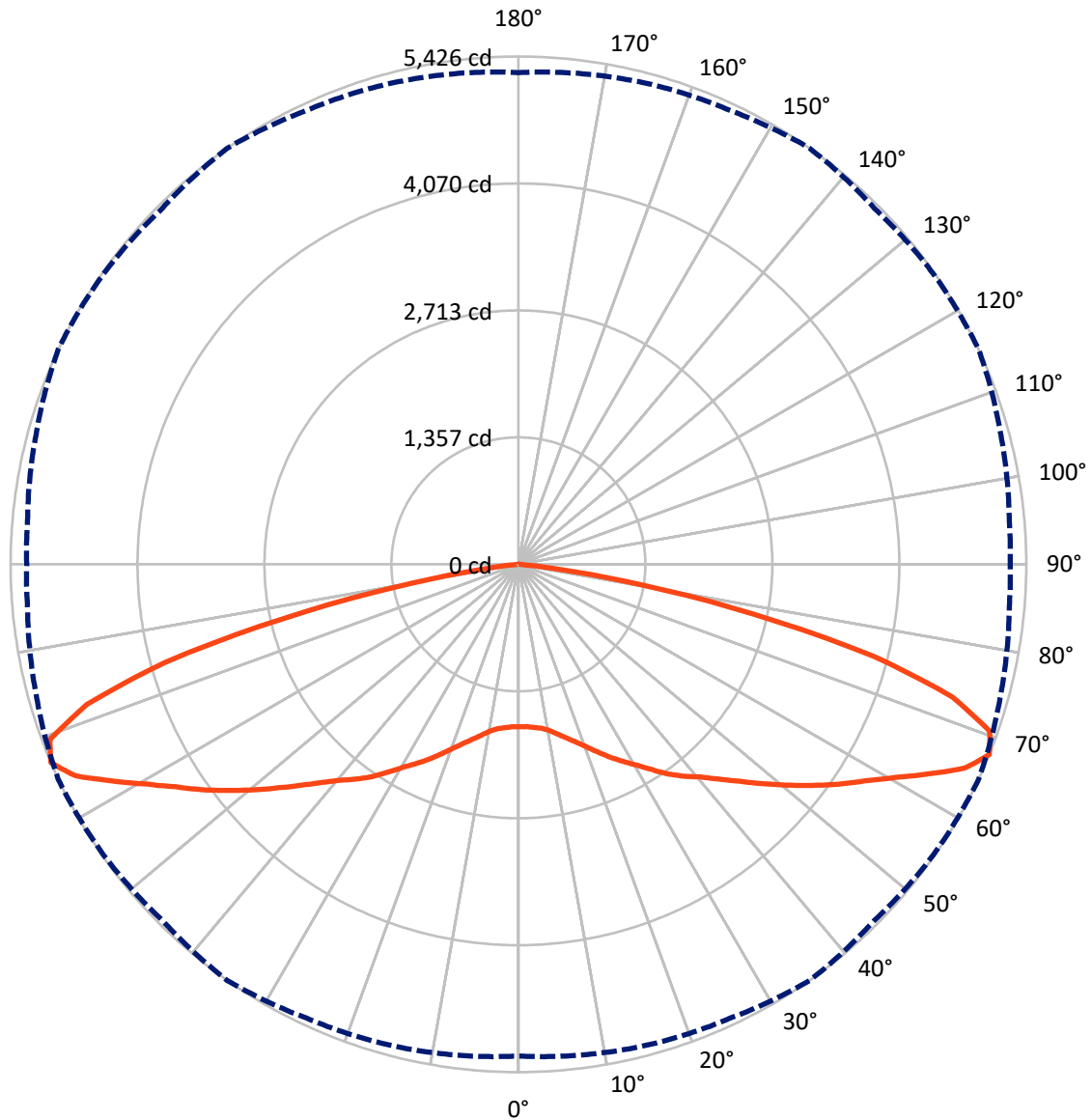
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.4 fc
 Type V - Short - N/A

REPORT NUMBER: P868675
CATALOG NUMBER: EMM2-HTN-SA3B-730-U-T5R

Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P868675
 CATALOG NUMBER: EMM2-HTN-SA3B-730-U-T5R

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9214.1 | 0.0 | 9214.1 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 9214.1 | 0.0 | 9214.1 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 18428.2 | 0.0 | 18428.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 168.8 | 0.9 |
| 10°-20° | 553.2 | 3.0 |
| 20°-30° | 1057.4 | 5.7 |
| 30°-40° | 1708.7 | 9.3 |
| 40°-50° | 2501.0 | 13.6 |
| 50°-60° | 3586.4 | 19.5 |
| 60°-70° | 5026.6 | 27.3 |
| 70°-80° | 3546.8 | 19.2 |
| 80°-90° | 279.2 | 1.5 |
| 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° | 18428.2 | 100.0 |
| 0°-180° | 18428.2 | 100.0 |



REPORT NUMBER: P868675

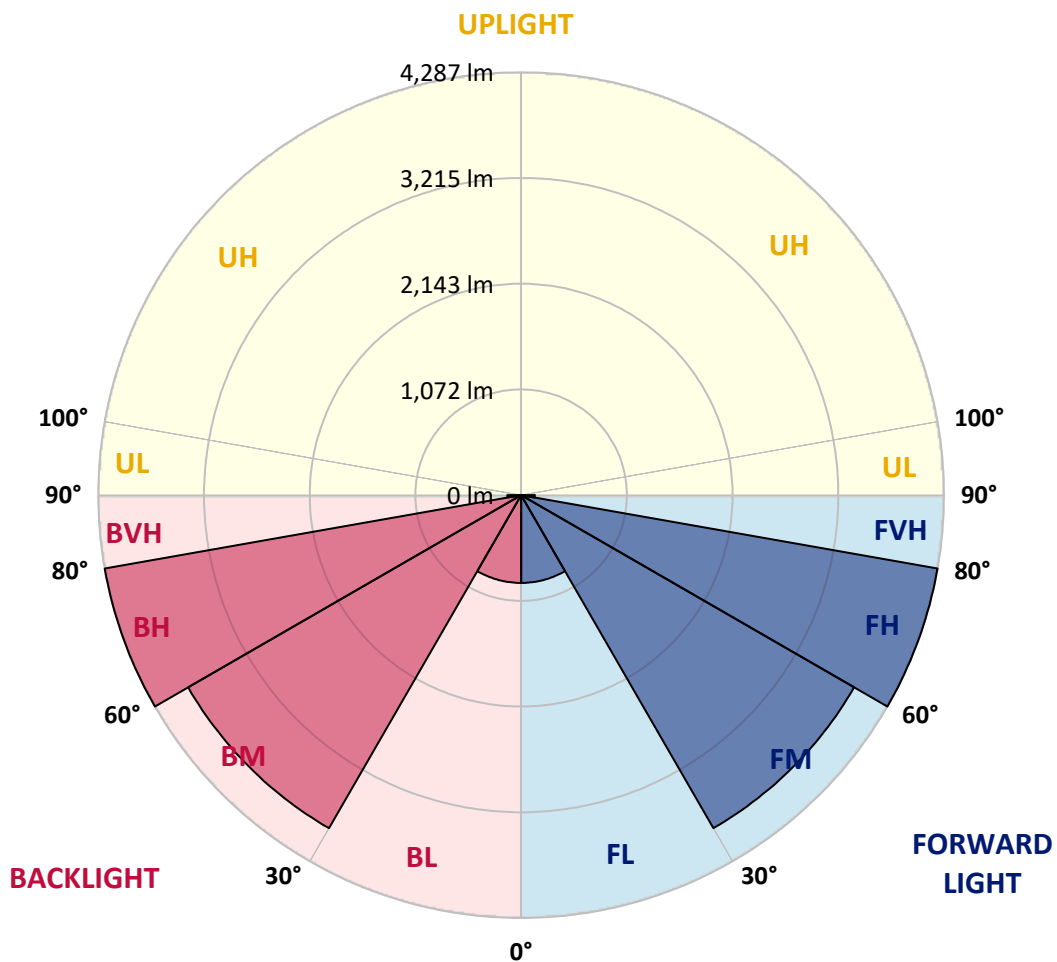
CATALOG NUMBER: EMM2-HTN-SA3B-730-U-T5R

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 889.7 | 4.8 | | | |
| FM (30°-60°) | 3898.1 | 21.2 | | | |
| FH (60°-80°) | 4286.7 | 23.3 | | | G2/5000 |
| FVH (80°-90°) | 139.6 | 0.8 | | | G2/225 |
| BL (0°-30°) | 889.7 | 4.8 | B2/1000 | | |
| BM (30°-60°) | 3898.1 | 21.2 | B3/5000 | | |
| BH (60°-80°) | 4286.7 | 23.3 | B4/5000 | | G2/5000 |
| BVH (80°-90°) | 139.6 | 0.8 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G2

Type V Short





REPORT NUMBER: P868675

CATALOG NUMBER: EMM2-HTN-SA3B-730-U-T5R

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 | 1735.9 |
| 2.5° | 1746.6 | 1743.1 | 1739.5 | 1739.5 | 1735.9 | 1739.5 | 1735.9 | 1739.5 | 1735.9 | 1735.9 | 1735.9 |
| 5° | 1757.4 | 1753.8 | 1753.8 | 1753.8 | 1750.2 | 1750.2 | 1750.2 | 1750.2 | 1746.6 | 1743.1 | 1746.6 |
| 7.5° | 1768.2 | 1768.2 | 1764.6 | 1771.8 | 1768.2 | 1771.8 | 1771.8 | 1775.3 | 1768.2 | 1764.6 | 1768.2 |
| 10° | 1796.9 | 1796.9 | 1796.9 | 1804.0 | 1804.0 | 1814.8 | 1814.8 | 1818.4 | 1814.8 | 1807.6 | 1807.6 |
| 12.5° | 1857.8 | 1854.2 | 1854.2 | 1854.2 | 1861.4 | 1868.6 | 1875.8 | 1875.8 | 1872.2 | 1861.4 | 1861.4 |
| 15° | 1926.0 | 1933.1 | 1926.0 | 1922.4 | 1926.0 | 1933.1 | 1940.3 | 1940.3 | 1936.7 | 1933.1 | 1933.1 |
| 17.5° | 2008.5 | 2012.1 | 2004.9 | 1997.7 | 1997.7 | 2008.5 | 2012.1 | 2012.1 | 2008.5 | 2001.3 | 2001.3 |
| 20° | 2080.2 | 2083.8 | 2083.8 | 2080.2 | 2083.8 | 2091.0 | 2094.5 | 2098.1 | 2087.4 | 2076.6 | 2076.6 |
| 22.5° | 2141.2 | 2144.8 | 2151.9 | 2166.3 | 2180.6 | 2187.8 | 2184.2 | 2184.2 | 2166.3 | 2155.5 | 2151.9 |
| 25° | 2216.5 | 2227.2 | 2241.6 | 2259.5 | 2284.6 | 2302.6 | 2295.4 | 2281.0 | 2266.7 | 2245.2 | 2241.6 |
| 27.5° | 2363.5 | 2363.5 | 2349.2 | 2356.4 | 2385.1 | 2403.0 | 2395.8 | 2385.1 | 2356.4 | 2342.0 | 2338.4 |
| 30° | 2478.3 | 2478.3 | 2478.3 | 2471.1 | 2489.1 | 2510.6 | 2503.4 | 2485.5 | 2471.1 | 2464.0 | 2464.0 |
| 32.5° | 2589.5 | 2582.3 | 2593.1 | 2607.4 | 2614.6 | 2621.8 | 2621.8 | 2607.4 | 2582.3 | 2571.6 | 2571.6 |
| 35° | 2693.5 | 2700.7 | 2711.4 | 2732.9 | 2750.9 | 2740.1 | 2722.2 | 2711.4 | 2686.3 | 2664.8 | 2664.8 |
| 37.5° | 2793.9 | 2801.1 | 2811.9 | 2844.1 | 2872.8 | 2869.2 | 2847.7 | 2819.0 | 2786.7 | 2768.8 | 2758.1 |
| 40° | 2865.6 | 2869.2 | 2897.9 | 2948.1 | 2987.6 | 3001.9 | 2984.0 | 2944.6 | 2894.3 | 2858.5 | 2862.1 |
| 42.5° | 2951.7 | 2958.9 | 3005.5 | 3077.3 | 3134.6 | 3156.2 | 3131.1 | 3077.3 | 3005.5 | 2958.9 | 2958.9 |
| 45° | 3077.3 | 3080.8 | 3141.8 | 3231.5 | 3306.8 | 3342.7 | 3306.8 | 3231.5 | 3138.2 | 3091.6 | 3088.0 |
| 47.5° | 3202.8 | 3213.5 | 3281.7 | 3389.3 | 3500.5 | 3543.5 | 3504.1 | 3407.2 | 3296.0 | 3238.7 | 3231.5 |
| 50° | 3346.2 | 3353.4 | 3435.9 | 3583.0 | 3708.5 | 3765.9 | 3715.7 | 3593.7 | 3471.8 | 3400.0 | 3403.6 |
| 52.5° | 3486.1 | 3507.6 | 3618.8 | 3773.0 | 3923.7 | 3988.2 | 3916.5 | 3783.8 | 3654.7 | 3586.5 | 3583.0 |
| 55° | 3694.1 | 3719.2 | 3816.1 | 3988.2 | 4146.0 | 4217.8 | 4149.6 | 4002.6 | 3862.7 | 3787.4 | 3773.0 |
| 57.5° | 3956.0 | 3970.3 | 4056.4 | 4232.1 | 4364.8 | 4433.0 | 4393.5 | 4257.2 | 4124.5 | 4031.3 | 4013.3 |
| 60° | 4253.6 | 4268.0 | 4336.1 | 4515.5 | 4623.1 | 4673.3 | 4658.9 | 4580.0 | 4490.4 | 4447.3 | 4436.6 |
| 62.5° | 4676.9 | 4680.4 | 4716.3 | 4820.3 | 4927.9 | 4949.4 | 4913.6 | 4895.6 | 4924.3 | 4877.7 | 4888.5 |
| 65° | 5161.0 | 5161.0 | 5150.3 | 5164.6 | 5247.1 | 5222.0 | 5196.9 | 5275.8 | 5261.5 | 5182.6 | 5168.2 |
| 67.5° | 5254.3 | 5275.8 | 5318.8 | 5351.1 | 5426.4 | 5379.8 | 5412.1 | 5426.4 | 5336.8 | 5265.0 | 5254.3 |
| 70° | 4702.0 | 4727.1 | 4967.4 | 5114.4 | 5344.0 | 5387.0 | 5283.0 | 5229.2 | 5128.8 | 4996.1 | 4960.2 |
| 72.5° | 3206.4 | 3331.9 | 4024.1 | 4497.5 | 4849.0 | 4902.8 | 4845.4 | 4777.3 | 4576.4 | 4472.4 | 4400.7 |
| 75° | 2560.8 | 2628.9 | 3245.8 | 3712.1 | 3920.1 | 3916.5 | 3687.0 | 3611.7 | 3453.8 | 3439.5 | 3453.8 |
| 77.5° | 1563.7 | 1578.1 | 2184.2 | 2550.0 | 2575.1 | 2560.8 | 2467.5 | 2410.2 | 2431.7 | 2324.1 | 2342.0 |
| 80° | 477.0 | 520.0 | 824.9 | 1244.5 | 1337.8 | 1294.7 | 1276.8 | 1298.3 | 1319.8 | 1352.1 | 1402.3 |
| 82.5° | 96.8 | 121.9 | 165.0 | 358.7 | 408.9 | 405.3 | 401.7 | 444.7 | 484.2 | 502.1 | 609.7 |
| 85° | 10.8 | 10.8 | 14.3 | 28.7 | 61.0 | 96.8 | 100.4 | 89.7 | 136.3 | 132.7 | 93.3 |
| 87.5° | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-157-4

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-730-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-730-U-5WQ-2

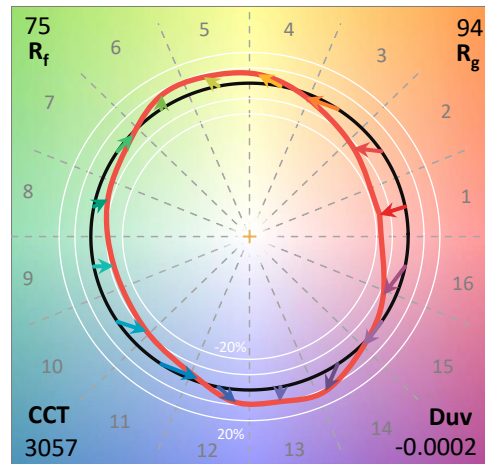
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/20/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-SA-40-730-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 3057
 CIE u': 0.2487
 CIE v': 0.5199
 Duv: -0.0002
 CIE x: 0.4326
 CIE y: 0.4020
 CIE z: 0.1654
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 50.50735
 Rf: 74.6
 Rg: 94

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 68.1 | R9: | -34.8 |
| R2: | 82.0 | R10: | 58.5 |
| R3: | 93.5 | R11: | 62.5 |
| R4: | 67.5 | R12: | 47.5 |
| R5: | 67.2 | R13: | 70.7 |
| R6: | 74.9 | R14: | 96.4 |
| R7: | 77.4 | R15: | 60.0 |
| R8: | 43.1 | | |



Test Conditions

Stabilization Time: 21M
 Operation Time: 1H 21M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-4

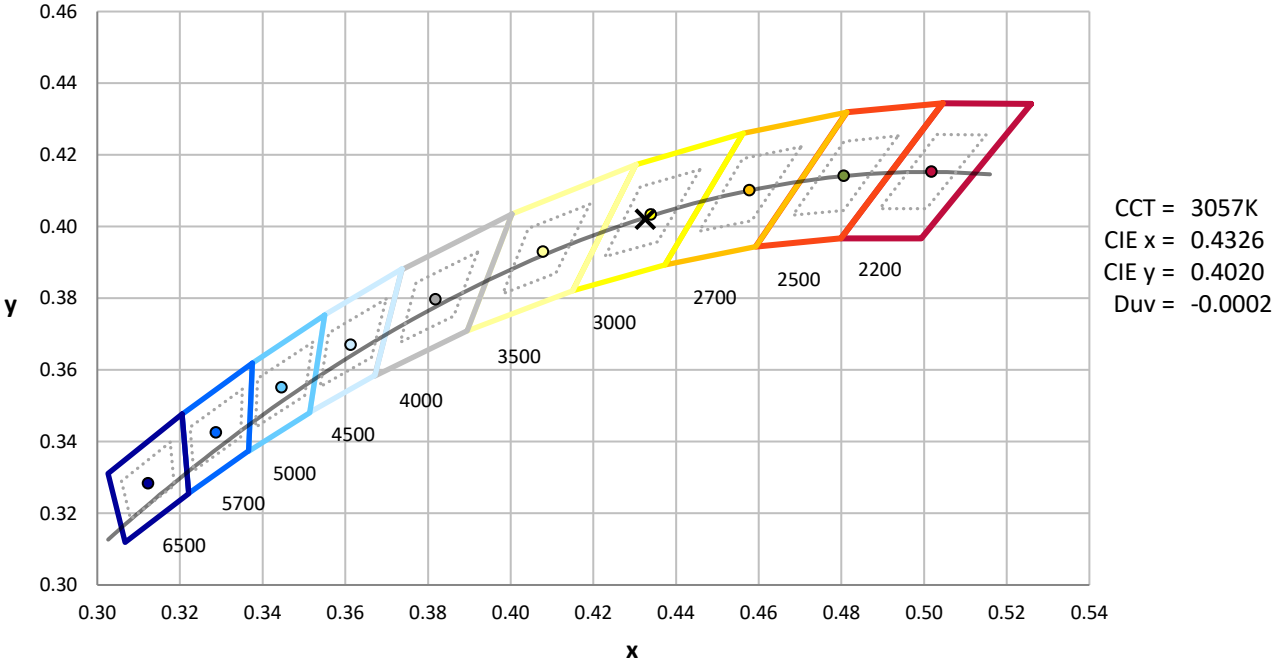
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 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: SP1-2407-157-4

CIE 1931 Chromaticity Diagram



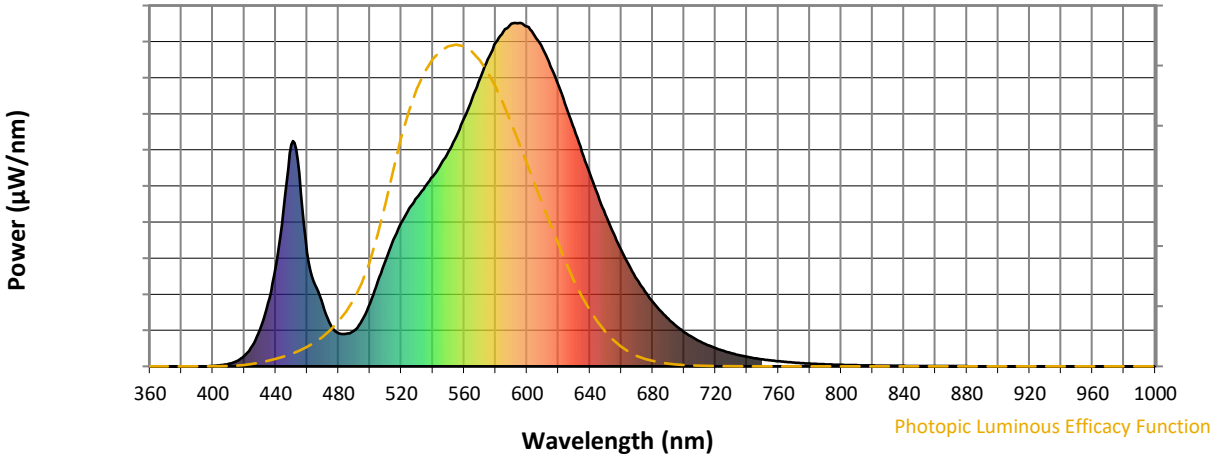
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-4

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 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-4

Scotopic Flux vs. Wavelength



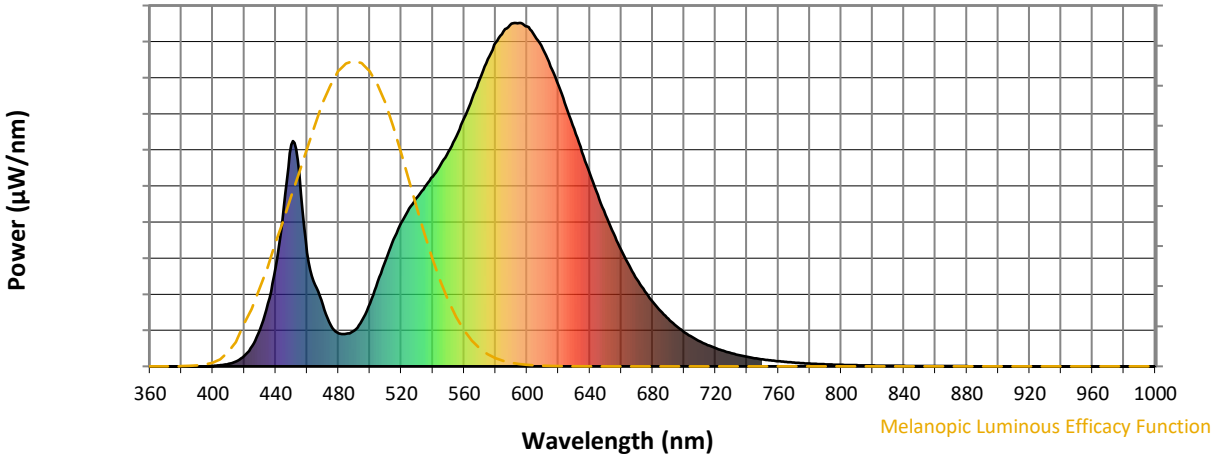
Scotopic Lumens: NR

S/P: 1.23

| 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 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.27

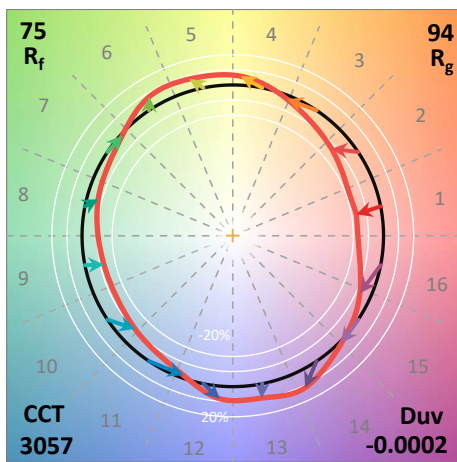
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 74.6$
 $R_g = 94$
 $CIE R_a = 71.7$
 $R_9 = -34.8$

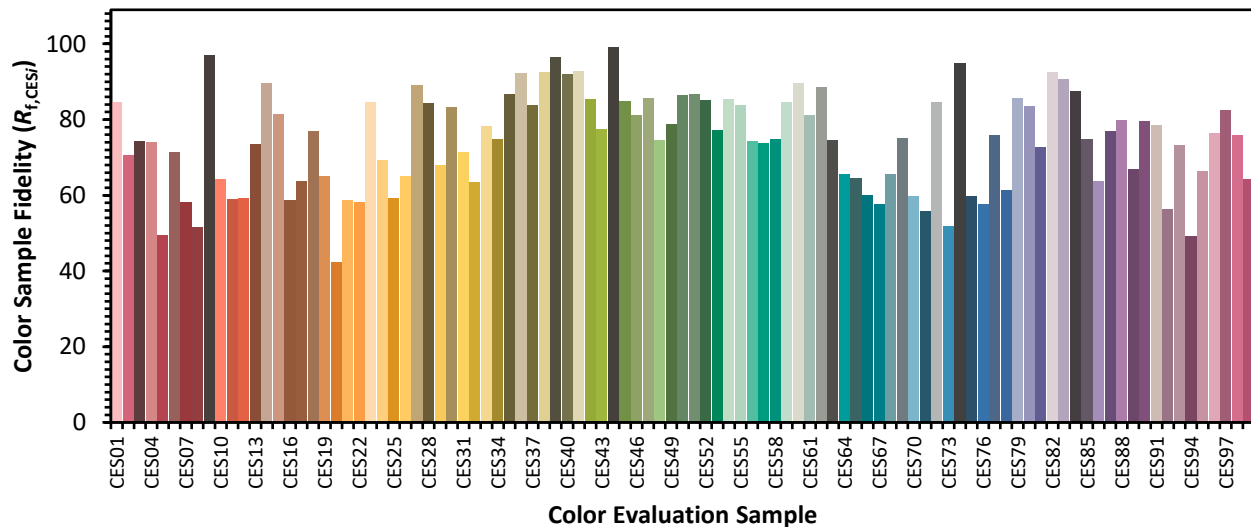


Color Vector Graphics

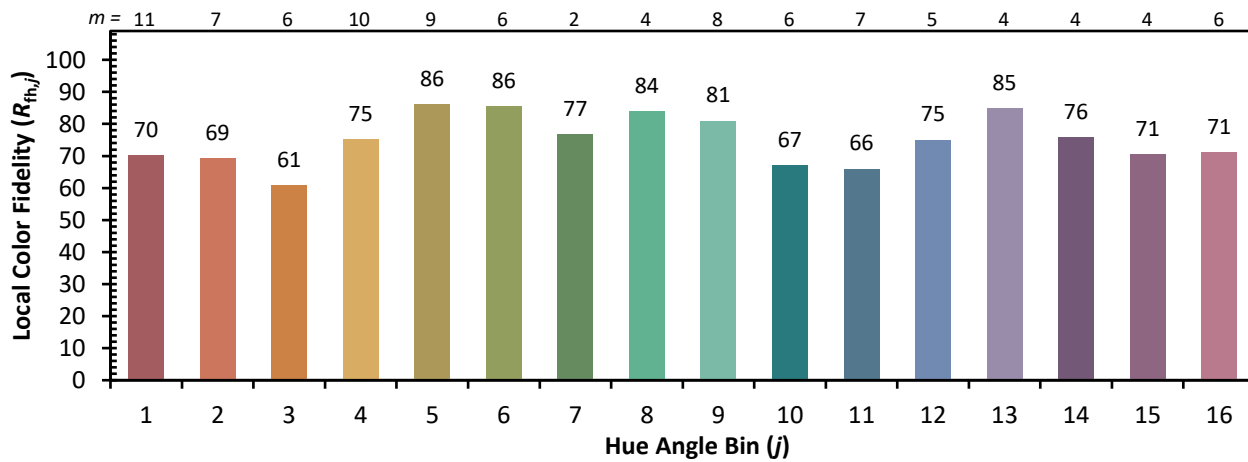


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 87 | CES76 = 58 |
| CES02 = 62 | CES27 = 89 | CES52 = 85 | CES77 = 76 |
| CES03 = 31 | CES28 = 84 | CES53 = 77 | CES78 = 61 |
| CES04 = 71 | CES29 = 68 | CES54 = 85 | CES79 = 86 |
| CES05 = 49 | CES30 = 83 | CES55 = 84 | CES80 = 83 |
| CES06 = 51 | CES31 = 71 | CES56 = 74 | CES81 = 73 |
| CES07 = 41 | CES32 = 64 | CES57 = 74 | CES82 = 93 |
| CES08 = 40 | CES33 = 78 | CES58 = 75 | CES83 = 91 |
| CES09 = 29 | CES34 = 75 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 87 | CES60 = 90 | CES85 = 75 |
| CES11 = 59 | CES36 = 92 | CES61 = 81 | CES86 = 64 |
| CES12 = 65 | CES37 = 84 | CES62 = 89 | CES87 = 77 |
| CES13 = 43 | CES38 = 92 | CES63 = 75 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 65 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 64 | CES90 = 80 |
| CES16 = 47 | CES41 = 93 | CES66 = 60 | CES91 = 78 |
| CES17 = 50 | CES42 = 86 | CES67 = 58 | CES92 = 56 |
| CES18 = 56 | CES43 = 77 | CES68 = 66 | CES93 = 73 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 60 | CES95 = 66 |
| CES21 = 87 | CES46 = 81 | CES71 = 56 | CES96 = 76 |
| CES22 = 79 | CES47 = 86 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 95 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 60 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)