

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

Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: INVUE

Report Number: P871354

Luminaire Tested: EMM2-HSN-SA3A-830-U-5MQ

Issue Date: 09/05/2024

Test Information

Test Method: LM-79-2024
Report Number: P871354
Test Lab: INNOVATION CENTER(G3)
Issue Date: 5/19/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: INVUE
Catalog Number: EMM2-HSN-SA3A-830-U-5MQ
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 130W 80CRI 3000K FIXTURE w/
TYPE V SQUARE MEDIUM DISTRIBUTION OPTIC
Light Source: (30) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15303.9 lumens
Efficiency: N/A
Efficacy: 135.4 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): 113
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 7.77%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

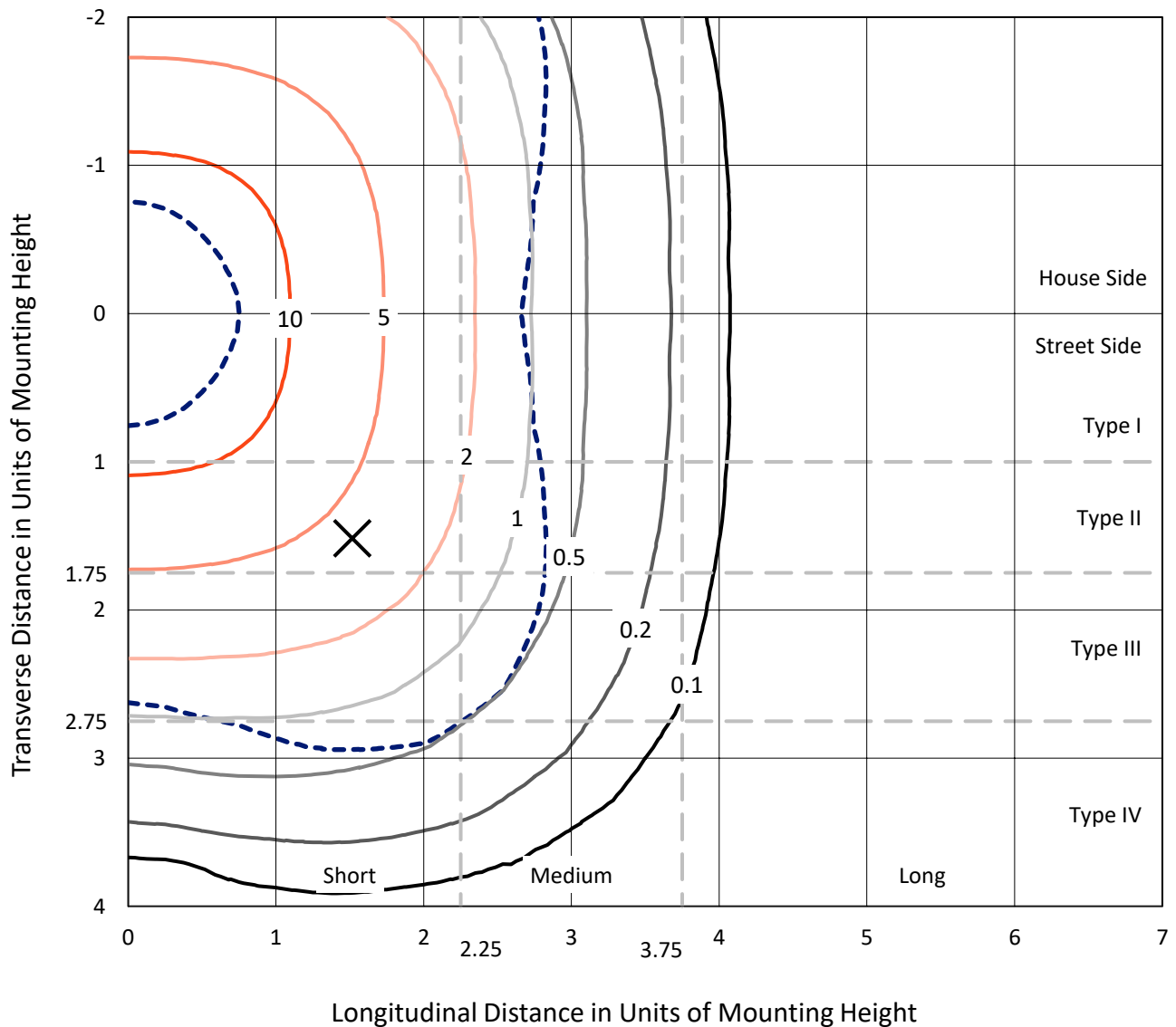


REPORT NUMBER: P871354

CATALOG NUMBER: EMM2-HSN-SA3A-830-U-5MQ

Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

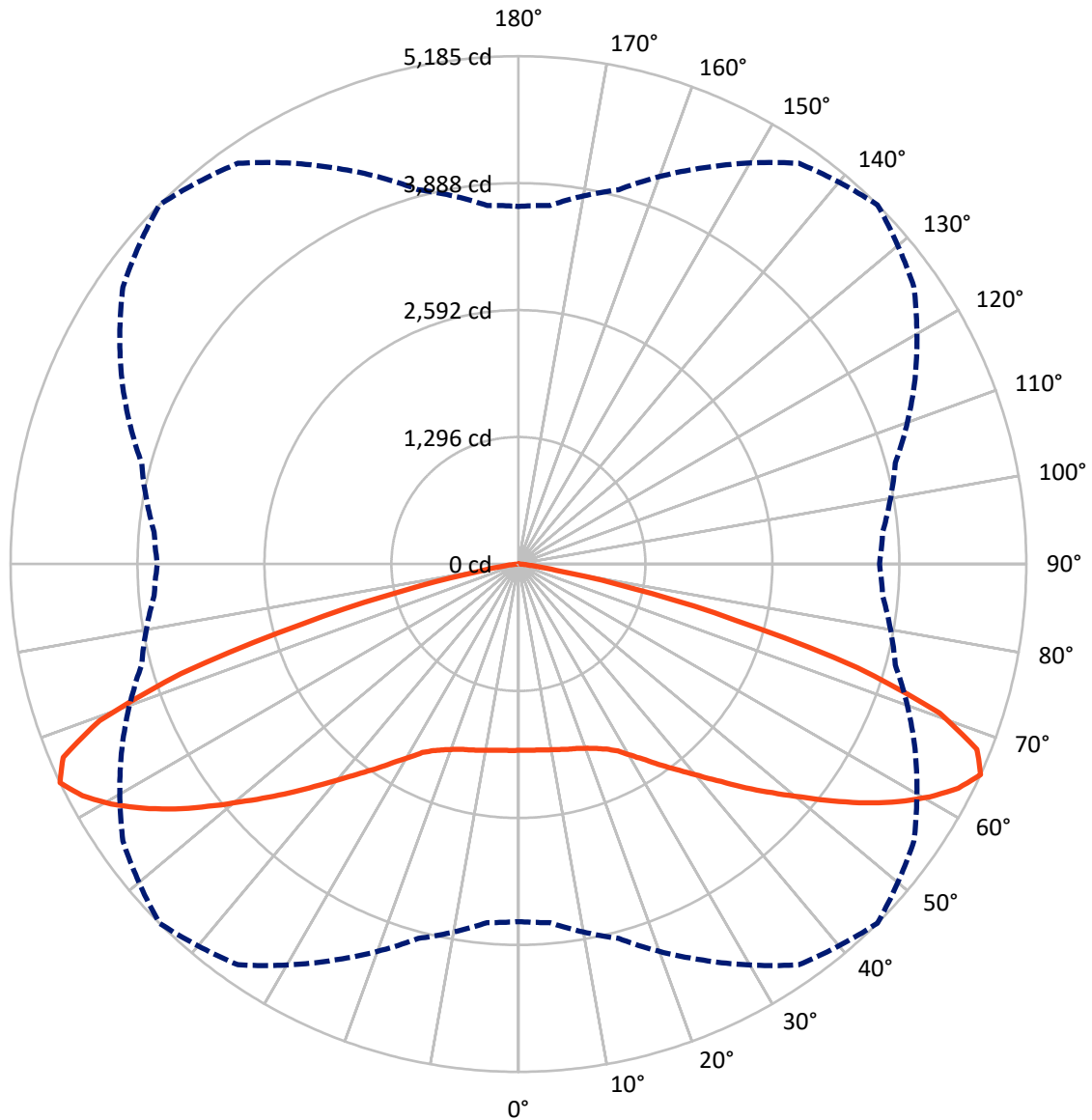


Based on 10 foot mounting height. Maximum calculated value = 19 fc
 Type V - Short - N/A

REPORT NUMBER: P871354

CATALOG NUMBER: EMM2-HSN-SA3A-830-U-5MQ

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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CATALOG NUMBER: EMM2-HSN-SA3A-830-U-5MQ

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7651.9 | 0.0 | 7651.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 7651.9 | 0.0 | 7651.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 15303.9 | 0.0 | 15303.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 182.8 | 1.2 |
| 10°-20° | 556.6 | 3.6 |
| 20°-30° | 979.0 | 6.4 |
| 30°-40° | 1583.3 | 10.3 |
| 40°-50° | 2466.2 | 16.1 |
| 50°-60° | 3606.2 | 23.6 |
| 60°-70° | 4152.7 | 27.1 |
| 70°-80° | 1696.0 | 11.1 |
| 80°-90° | 81.1 | 0.5 |
| 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° | 15303.9 | 100.0 |
| 0°-180° | 15303.9 | 100.0 |



REPORT NUMBER: P871354

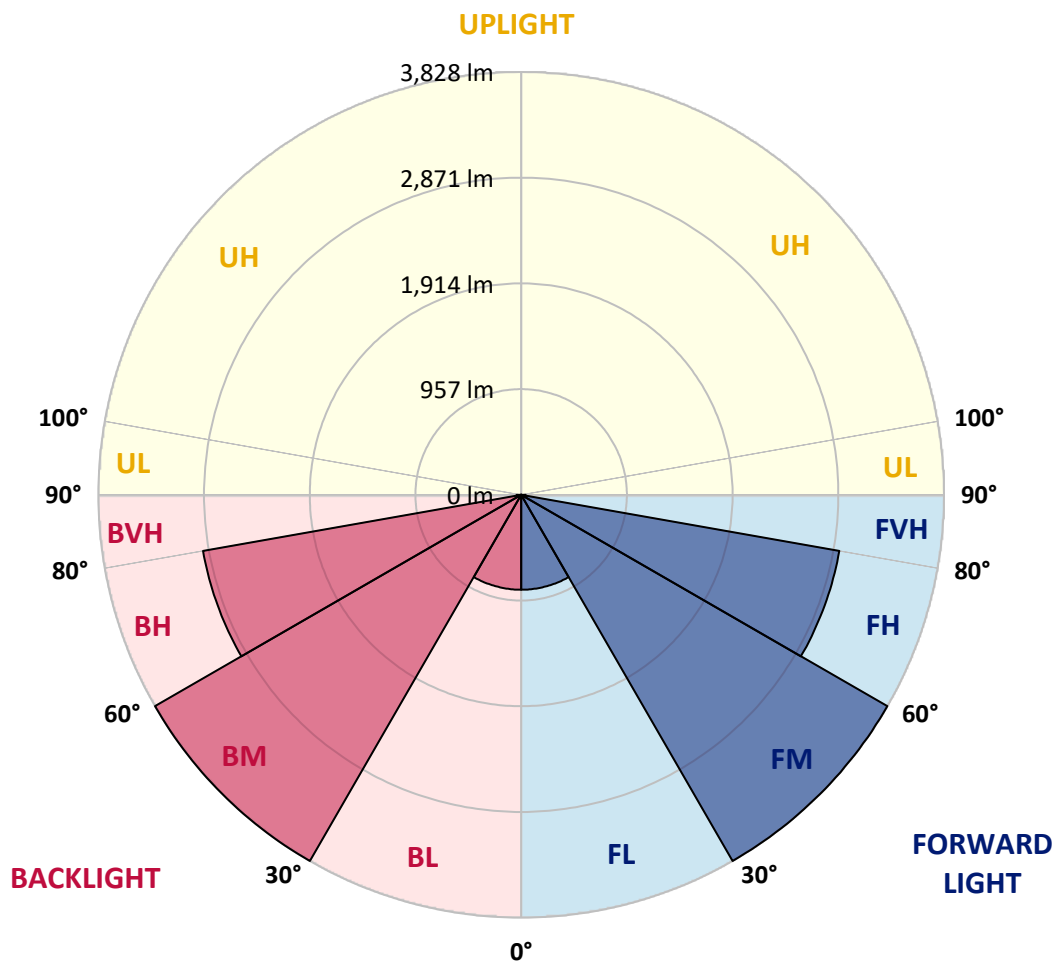
CATALOG NUMBER: EMM2-HSN-SA3A-830-U-5MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 859.2 | 5.6 | | | |
| FM | (30°-60°) | 3827.8 | 25.0 | | | |
| FH | (60°-80°) | 2924.3 | 19.1 | | | G2/5000 |
| FVH | (80°-90°) | 40.6 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 859.2 | 5.6 | B2/1000 | | |
| BM | (30°-60°) | 3827.8 | 25.0 | B3/5000 | | |
| BH | (60°-80°) | 2924.3 | 19.1 | B4/5000 | | G2/5000 |
| BVH | (80°-90°) | 40.6 | 0.3 | | | G1/100 |
| 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: P871354

CATALOG NUMBER: EMM2-HSN-SA3A-830-U-5MQ

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 | 1901.6 |
| 2.5° | 1907.5 | 1907.5 | 1904.5 | 1904.5 | 1898.7 | 1904.5 | 1901.6 | 1904.5 | 1901.6 | 1901.6 | 1904.5 |
| 5° | 1913.4 | 1913.4 | 1907.5 | 1910.4 | 1904.5 | 1907.5 | 1904.5 | 1910.4 | 1907.5 | 1904.5 | 1910.4 |
| 7.5° | 1922.2 | 1922.2 | 1916.3 | 1919.2 | 1913.4 | 1916.3 | 1913.4 | 1919.2 | 1916.3 | 1916.3 | 1919.2 |
| 10° | 1931.0 | 1933.9 | 1928.0 | 1925.1 | 1925.1 | 1928.0 | 1931.0 | 1933.9 | 1931.0 | 1931.0 | 1936.9 |
| 12.5° | 1945.7 | 1948.6 | 1942.7 | 1939.8 | 1939.8 | 1942.7 | 1945.7 | 1951.6 | 1942.7 | 1942.7 | 1942.7 |
| 15° | 1960.4 | 1960.4 | 1957.4 | 1954.5 | 1957.4 | 1960.4 | 1960.4 | 1966.3 | 1960.4 | 1954.5 | 1954.5 |
| 17.5° | 1966.3 | 1969.2 | 1966.3 | 1972.1 | 1975.1 | 1978.0 | 1981.0 | 1981.0 | 1972.1 | 1969.2 | 1969.2 |
| 20° | 1986.8 | 1989.8 | 1983.9 | 1986.8 | 1995.6 | 2007.4 | 2007.4 | 2007.4 | 2007.4 | 1998.6 | 1998.6 |
| 22.5° | 2022.1 | 2025.0 | 2022.1 | 2022.1 | 2033.9 | 2045.6 | 2045.6 | 2054.4 | 2042.7 | 2036.8 | 2036.8 |
| 25° | 2080.9 | 2080.9 | 2077.9 | 2080.9 | 2086.8 | 2092.6 | 2104.4 | 2110.3 | 2110.3 | 2107.3 | 2110.3 |
| 27.5° | 2151.4 | 2154.4 | 2151.4 | 2151.4 | 2148.5 | 2160.2 | 2177.9 | 2186.7 | 2189.6 | 2192.6 | 2192.6 |
| 30° | 2245.5 | 2251.3 | 2248.4 | 2251.3 | 2257.2 | 2266.0 | 2271.9 | 2274.9 | 2274.9 | 2269.0 | 2269.0 |
| 32.5° | 2348.3 | 2354.2 | 2348.3 | 2363.0 | 2383.6 | 2383.6 | 2377.7 | 2389.5 | 2380.7 | 2374.8 | 2368.9 |
| 35° | 2468.8 | 2468.8 | 2474.7 | 2480.6 | 2510.0 | 2524.7 | 2524.7 | 2518.8 | 2501.2 | 2492.4 | 2498.2 |
| 37.5° | 2607.0 | 2609.9 | 2615.8 | 2618.7 | 2645.2 | 2671.6 | 2668.7 | 2654.0 | 2633.4 | 2609.9 | 2609.9 |
| 40° | 2771.6 | 2765.7 | 2768.6 | 2789.2 | 2809.8 | 2842.1 | 2845.0 | 2824.5 | 2789.2 | 2765.7 | 2765.7 |
| 42.5° | 2921.5 | 2924.4 | 2936.2 | 2962.6 | 3009.6 | 3036.1 | 3021.4 | 2986.1 | 2947.9 | 2918.5 | 2915.6 |
| 45° | 3080.2 | 3077.2 | 3109.6 | 3165.4 | 3227.1 | 3259.5 | 3235.9 | 3186.0 | 3127.2 | 3089.0 | 3089.0 |
| 47.5° | 3241.8 | 3238.9 | 3291.8 | 3382.9 | 3462.3 | 3488.7 | 3465.2 | 3400.5 | 3321.2 | 3265.3 | 3256.5 |
| 50° | 3409.4 | 3421.1 | 3476.9 | 3606.3 | 3709.1 | 3738.5 | 3709.1 | 3623.9 | 3518.1 | 3444.6 | 3432.9 |
| 52.5° | 3600.4 | 3609.2 | 3682.7 | 3823.8 | 3950.1 | 4017.7 | 3973.7 | 3847.3 | 3712.1 | 3623.9 | 3612.1 |
| 55° | 3776.7 | 3782.6 | 3888.4 | 4058.9 | 4214.7 | 4305.8 | 4235.2 | 4073.6 | 3903.1 | 3791.4 | 3779.7 |
| 57.5° | 3900.2 | 3914.9 | 4050.1 | 4270.5 | 4470.4 | 4576.2 | 4470.4 | 4297.0 | 4070.6 | 3932.5 | 3923.7 |
| 60° | 3979.5 | 4003.0 | 4158.8 | 4435.1 | 4711.4 | 4826.0 | 4717.2 | 4476.2 | 4197.0 | 4017.7 | 4008.9 |
| 62.5° | 3938.4 | 3970.7 | 4170.6 | 4532.1 | 4917.1 | 5040.5 | 4899.5 | 4561.5 | 4182.3 | 3956.0 | 3932.5 |
| 65° | 3650.4 | 3673.9 | 3956.0 | 4461.5 | 4993.5 | 5184.6 | 4928.9 | 4467.4 | 3982.5 | 3732.7 | 3685.6 |
| 67.5° | 3053.7 | 3094.9 | 3468.1 | 4120.6 | 4828.9 | 5049.4 | 4726.1 | 4129.4 | 3544.5 | 3238.9 | 3186.0 |
| 70° | 2345.4 | 2418.9 | 2827.4 | 3535.7 | 4314.6 | 4564.4 | 4208.8 | 3485.8 | 2798.0 | 2486.5 | 2389.5 |
| 72.5° | 1354.9 | 1469.5 | 2069.1 | 2759.8 | 3432.9 | 3621.0 | 3121.3 | 2436.5 | 1857.5 | 1637.1 | 1610.6 |
| 75° | 449.7 | 490.8 | 984.6 | 1590.1 | 2189.6 | 2283.7 | 1951.6 | 1537.1 | 1222.7 | 1046.3 | 1055.1 |
| 77.5° | 220.4 | 220.4 | 296.8 | 581.9 | 996.4 | 1175.6 | 1066.9 | 743.6 | 534.9 | 405.6 | 393.8 |
| 80° | 176.3 | 176.3 | 205.7 | 285.1 | 335.1 | 393.8 | 335.1 | 243.9 | 199.9 | 182.2 | 191.0 |
| 82.5° | 85.2 | 82.3 | 97.0 | 138.1 | 141.1 | 135.2 | 126.4 | 126.4 | 120.5 | 111.7 | 108.7 |
| 85° | 5.9 | 5.9 | 11.8 | 26.5 | 44.1 | 58.8 | 67.6 | 64.7 | 61.7 | 52.9 | 58.8 |
| 87.5° | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 5.9 | 5.9 | 5.9 | 5.9 |
| 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



Test Information

Test Method: LM-79-2019
 Report Number: SP1-2408-195-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **GALN-SB1A-830-U-5WQ**
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K): 3050
 CIE u': 0.2476
 CIE v': 0.5251
 Duv: 0.0034
 CIE x: 0.4383
 CIE y: 0.4131
 CIE z: 0.1487
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 581
 Purity: 55.55201
 Rf: 81.5
 Rg: 99.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 81.0 | | |
| R1: | 79.6 | R9: | 7.1 |
| R2: | 85.6 | R10: | 67.0 |
| R3: | 92.0 | R11: | 82.7 |
| R4: | 82.6 | R12: | 63.2 |
| R5: | 78.9 | R13: | 80.3 |
| R6: | 81.7 | R14: | 95.0 |
| R7: | 85.2 | R15: | 71.7 |
| R8: | 62.0 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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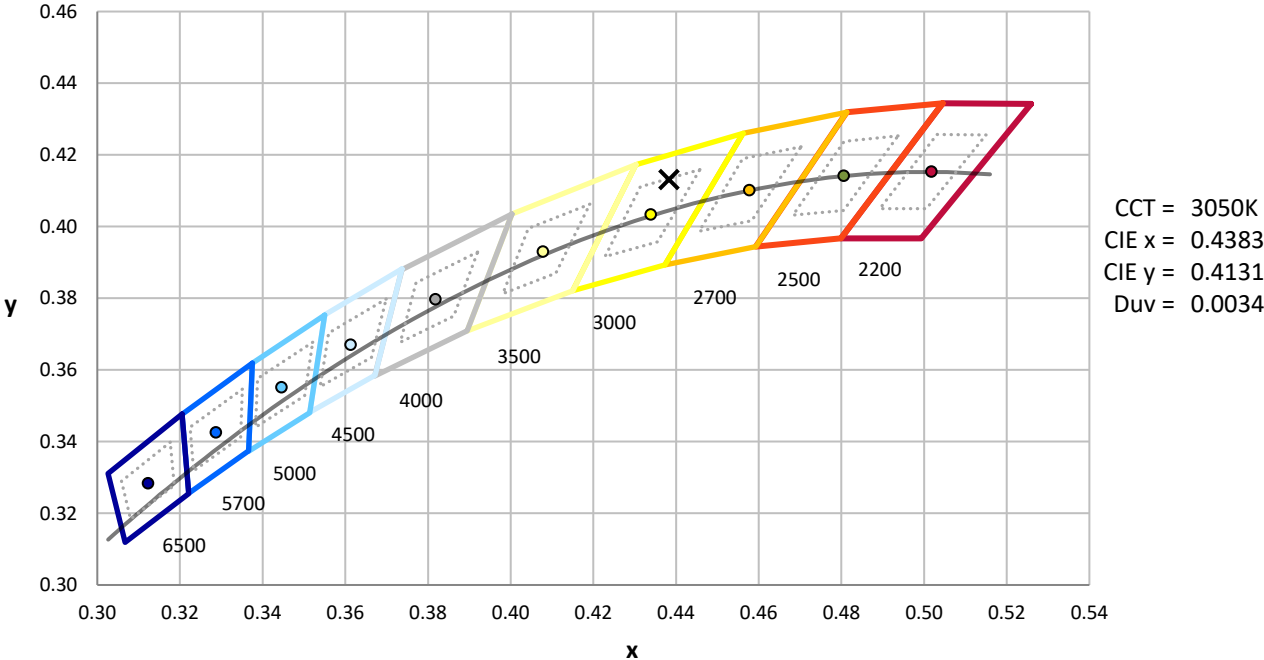
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 |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



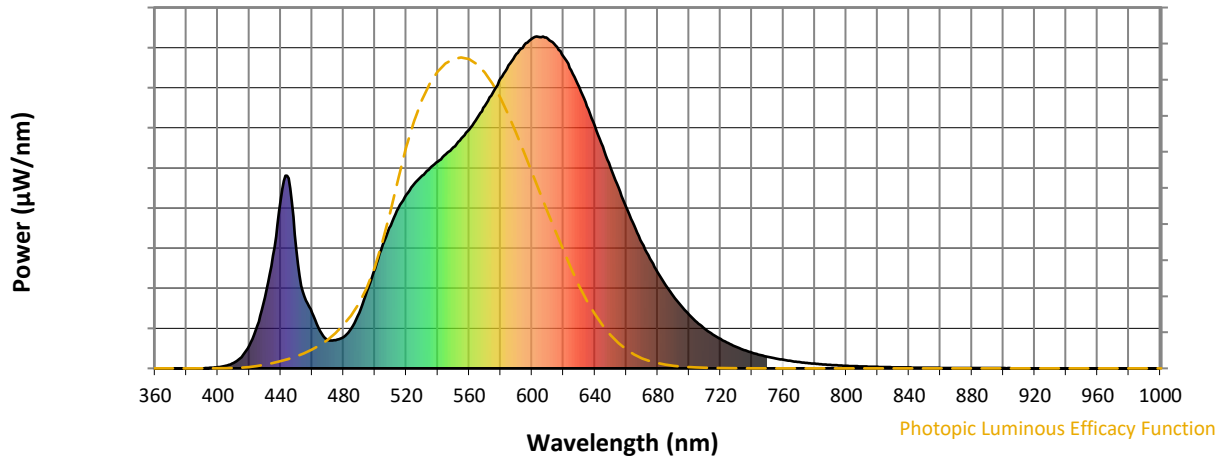
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

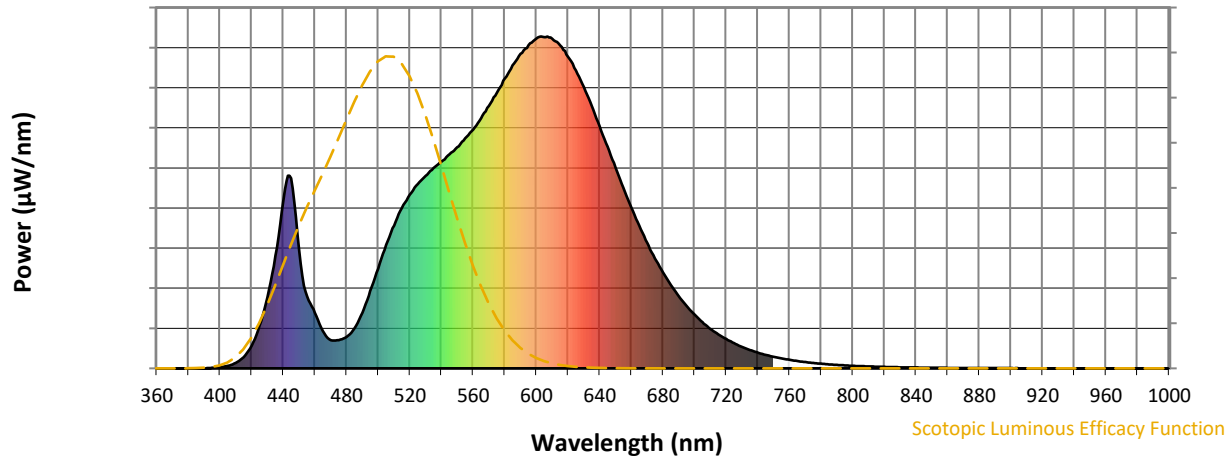


Photopic Lumens: NR

| 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 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| 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 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

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Melanopic Flux vs. Wavelength



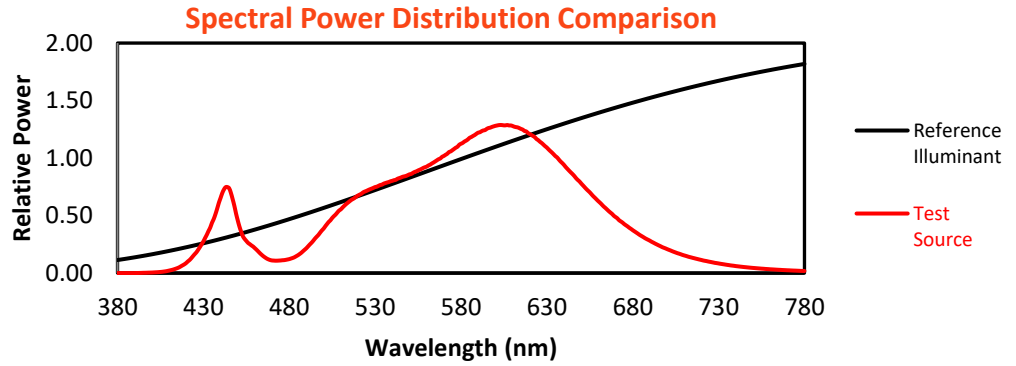
Melanopic Lumens: NR

M/P: 2.32

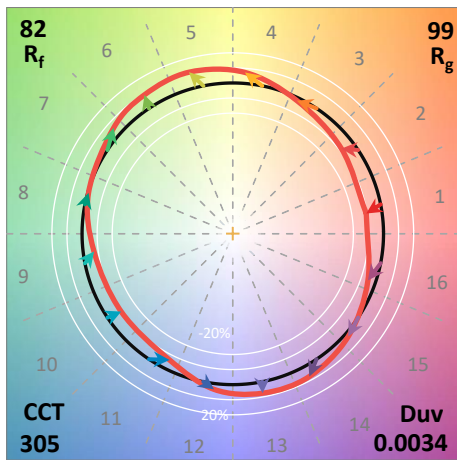
| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 81.0$
 $R_9 = 7.1$

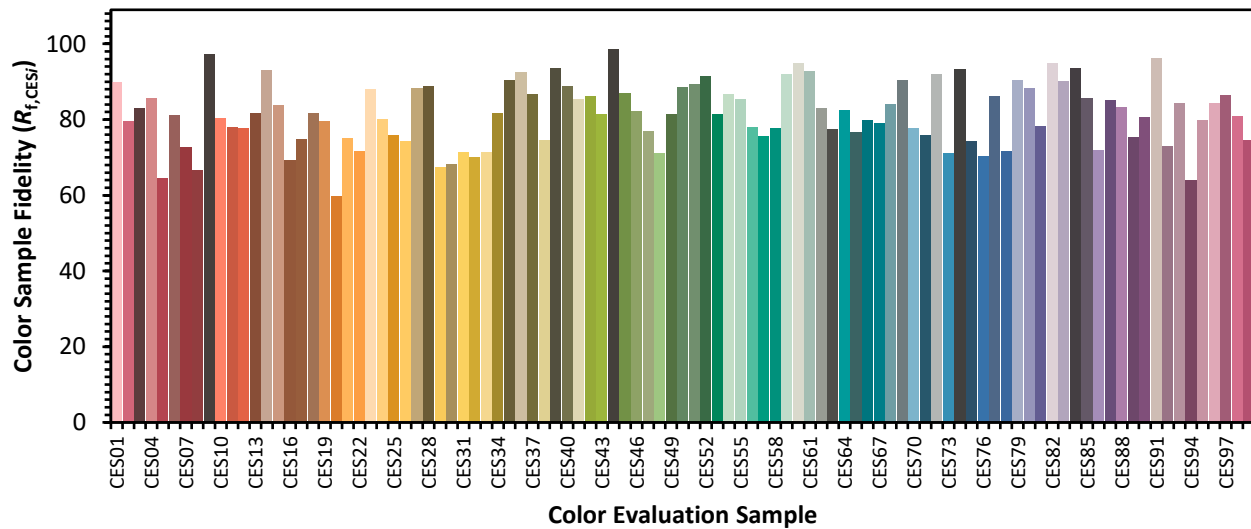


Color Vector Graphics

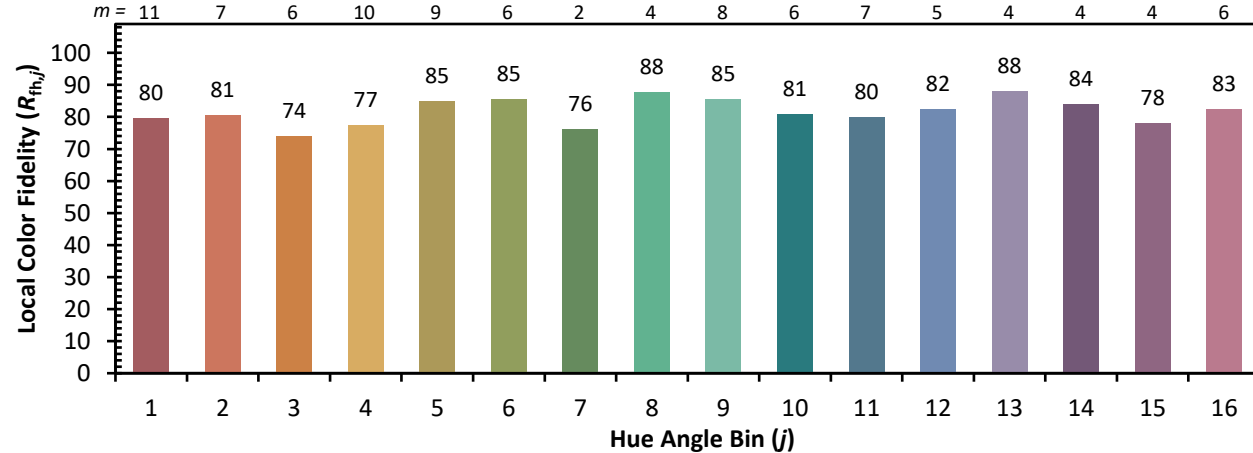
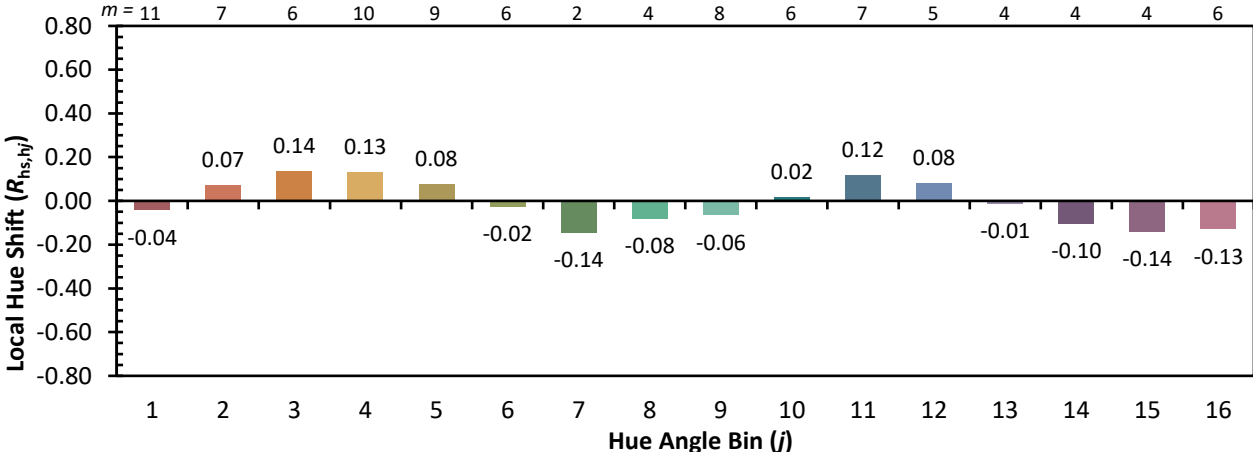
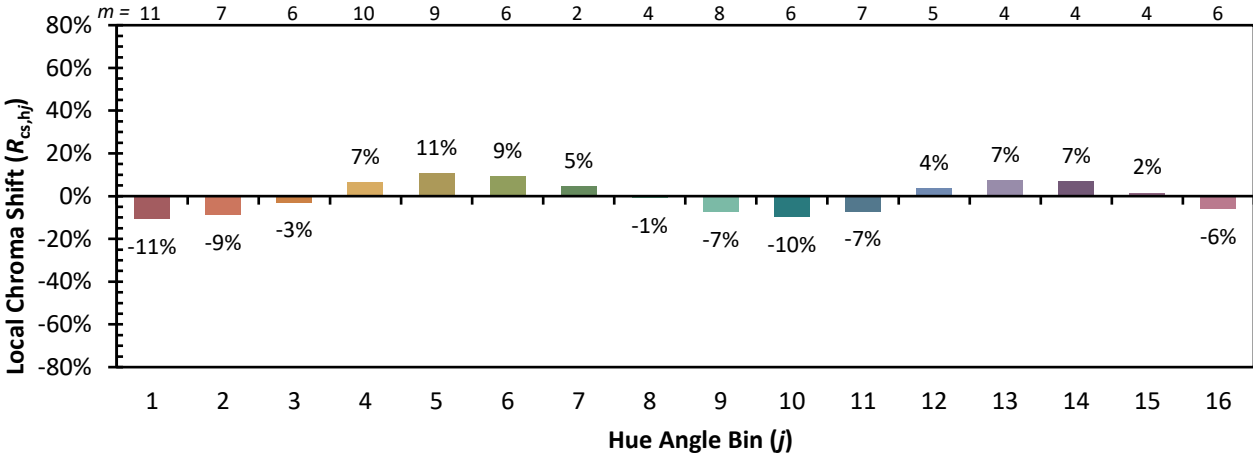


Individual Sample Fidelity Index ($R_{f,i}$)

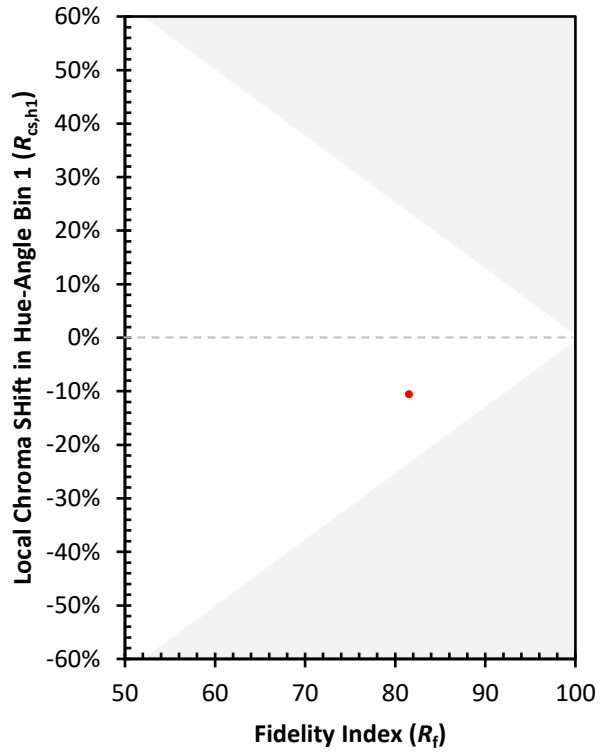
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)