

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: STREETWORKS

Report Number: P868225

Luminaire Tested: **MEM2-HSN-SA-150-740-U-5MQ**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P868225
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-150-740-U-5MQ
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 150W 70CRI 4000K
FIXTURE w/ TYPE V SQUARE MEDIUM DISTRIBUTION OPTIC
Light Source: (30) 4000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

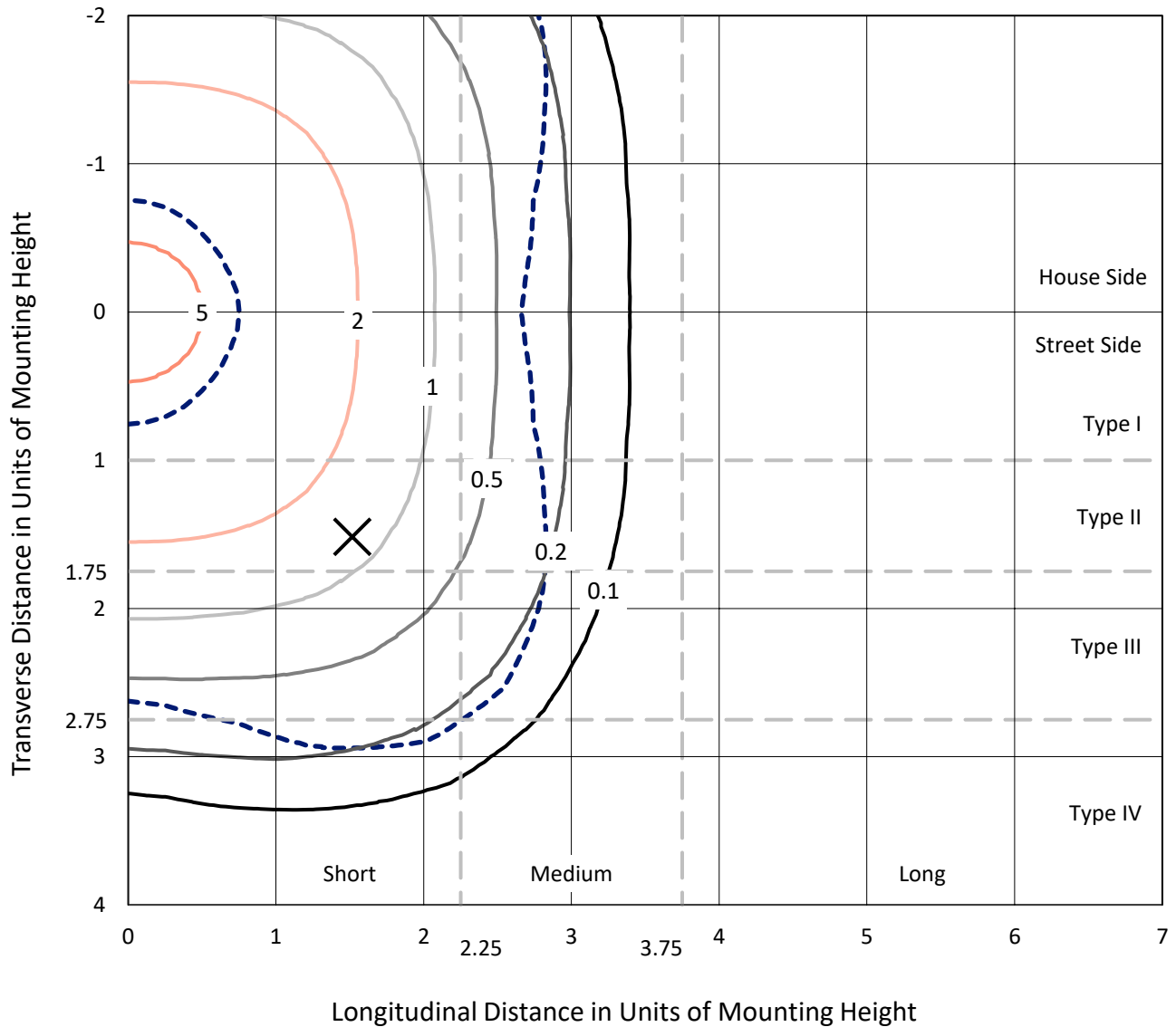
Lumens per Lamp: N/A
Luminaire Lumens: 19801.6 lumens
Efficiency: N/A
Efficacy: 147.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G2

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: P868225
 CATALOG NUMBER: MEM2-HSN-SA-150-740-U-5MQ

Iso-Footcandle Lines of Horizontal Illumination

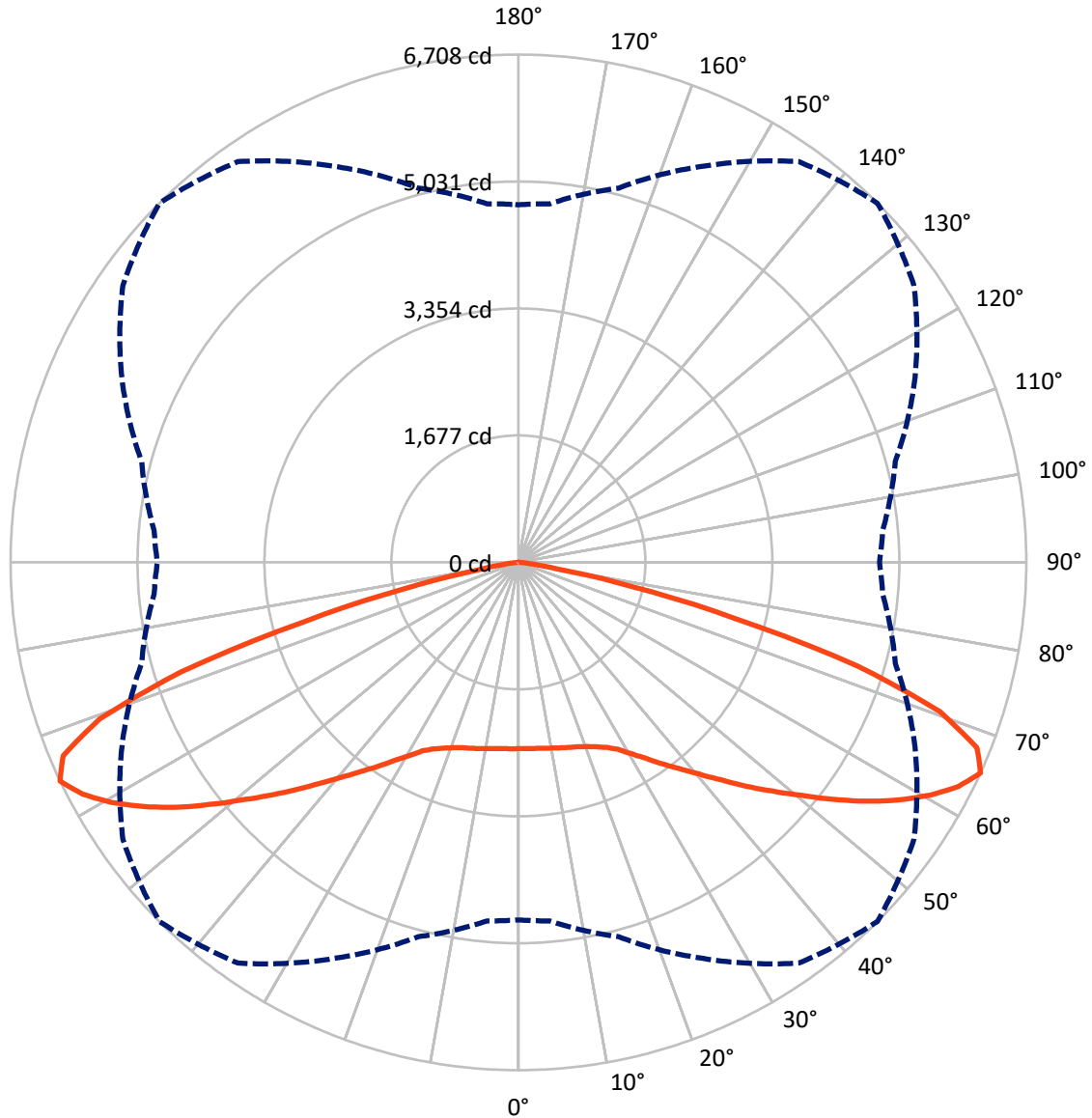
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.2 fc
 Type V - Short - N/A

REPORT NUMBER: P868225
CATALOG NUMBER: MEM2-HSN-SA-150-740-U-5MQ

Luminous Intensity Polar Plot



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

REPORT NUMBER: P868225
 CATALOG NUMBER: MEM2-HSN-SA-150-740-U-5MQ

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9900.8 | 0.0 | 9900.8 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 9900.8 | 0.0 | 9900.8 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 19801.6 | 0.0 | 19801.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 236.6 | 1.2 |
| 10°-20° | 720.1 | 3.6 |
| 20°-30° | 1266.7 | 6.4 |
| 30°-40° | 2048.6 | 10.3 |
| 40°-50° | 3191.0 | 16.1 |
| 50°-60° | 4666.0 | 23.6 |
| 60°-70° | 5373.1 | 27.1 |
| 70°-80° | 2194.4 | 11.1 |
| 80°-90° | 105.0 | 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° | 19801.6 | 100.0 |
| 0°-180° | 19801.6 | 100.0 |



REPORT NUMBER: P868225

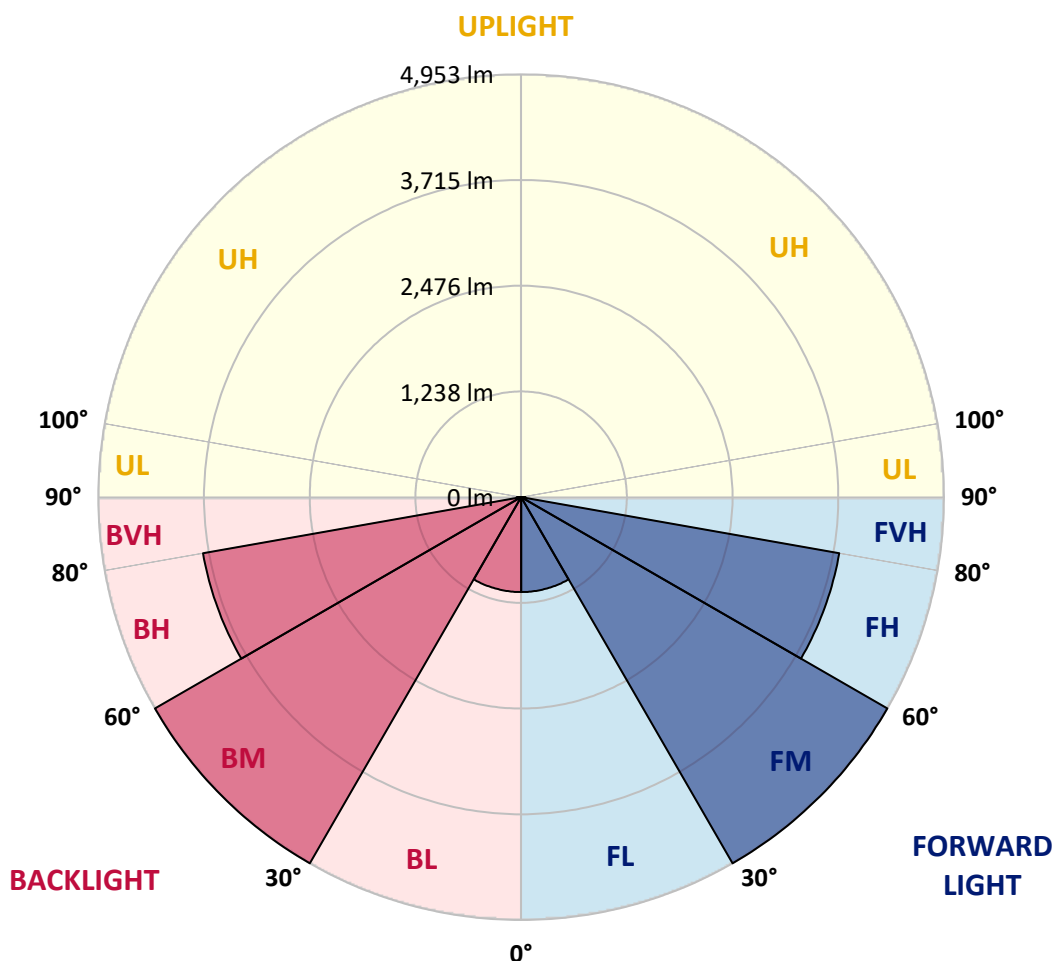
CATALOG NUMBER: MEM2-HSN-SA-150-740-U-5MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1111.7 | 5.6 | | | |
| FM (30°-60°) | 4952.8 | 25.0 | | | |
| FH (60°-80°) | 3783.8 | 19.1 | | | G2/5000 |
| FVH (80°-90°) | 52.5 | 0.3 | | | G1/100 |
| BL (0°-30°) | 1111.7 | 5.6 | B3/2500 | | |
| BM (30°-60°) | 4952.8 | 25.0 | B3/5000 | | |
| BH (60°-80°) | 3783.8 | 19.1 | B4/5000 | | G2/5000 |
| BVH (80°-90°) | 52.5 | 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: P868225

CATALOG NUMBER: MEM2-HSN-SA-150-740-U-5MQ

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 | 2460.5 |
| 2.5° | 2468.1 | 2468.1 | 2464.3 | 2464.3 | 2456.7 | 2464.3 | 2460.5 | 2464.3 | 2460.5 | 2460.5 | 2464.3 |
| 5° | 2475.7 | 2475.7 | 2468.1 | 2471.9 | 2464.3 | 2468.1 | 2464.3 | 2471.9 | 2468.1 | 2464.3 | 2471.9 |
| 7.5° | 2487.1 | 2487.1 | 2479.5 | 2483.3 | 2475.7 | 2479.5 | 2475.7 | 2483.3 | 2479.5 | 2479.5 | 2483.3 |
| 10° | 2498.5 | 2502.3 | 2494.7 | 2490.9 | 2490.9 | 2494.7 | 2498.5 | 2502.3 | 2498.5 | 2498.5 | 2506.1 |
| 12.5° | 2517.5 | 2521.3 | 2513.7 | 2509.9 | 2509.9 | 2513.7 | 2517.5 | 2525.1 | 2513.7 | 2513.7 | 2513.7 |
| 15° | 2536.5 | 2536.5 | 2532.7 | 2528.9 | 2532.7 | 2536.5 | 2536.5 | 2544.1 | 2536.5 | 2528.9 | 2528.9 |
| 17.5° | 2544.1 | 2547.9 | 2544.1 | 2551.7 | 2555.5 | 2559.3 | 2563.1 | 2563.1 | 2551.7 | 2547.9 | 2547.9 |
| 20° | 2570.7 | 2574.5 | 2566.9 | 2570.7 | 2582.1 | 2597.4 | 2597.4 | 2597.4 | 2597.4 | 2585.9 | 2585.9 |
| 22.5° | 2616.4 | 2620.2 | 2616.4 | 2616.4 | 2631.6 | 2646.8 | 2646.8 | 2658.2 | 2643.0 | 2635.4 | 2635.4 |
| 25° | 2692.4 | 2692.4 | 2688.6 | 2692.4 | 2700.0 | 2707.6 | 2722.9 | 2730.5 | 2730.5 | 2726.7 | 2730.5 |
| 27.5° | 2783.7 | 2787.5 | 2783.7 | 2783.7 | 2779.9 | 2795.1 | 2817.9 | 2829.3 | 2833.1 | 2836.9 | 2836.9 |
| 30° | 2905.4 | 2913.0 | 2909.2 | 2913.0 | 2920.6 | 2932.0 | 2939.6 | 2943.4 | 2943.4 | 2935.8 | 2935.8 |
| 32.5° | 3038.5 | 3046.1 | 3038.5 | 3057.5 | 3084.1 | 3084.1 | 3076.5 | 3091.7 | 3080.3 | 3072.7 | 3065.1 |
| 35° | 3194.4 | 3194.4 | 3202.0 | 3209.6 | 3247.6 | 3266.7 | 3266.7 | 3259.1 | 3236.2 | 3224.8 | 3232.4 |
| 37.5° | 3373.1 | 3376.9 | 3384.5 | 3388.4 | 3422.6 | 3456.8 | 3453.0 | 3434.0 | 3407.4 | 3376.9 | 3376.9 |
| 40° | 3586.1 | 3578.5 | 3582.3 | 3608.9 | 3635.5 | 3677.4 | 3681.2 | 3654.6 | 3608.9 | 3578.5 | 3578.5 |
| 42.5° | 3780.0 | 3783.9 | 3799.1 | 3833.3 | 3894.1 | 3928.4 | 3909.3 | 3863.7 | 3814.3 | 3776.2 | 3772.4 |
| 45° | 3985.4 | 3981.6 | 4023.4 | 4095.7 | 4175.5 | 4217.4 | 4187.0 | 4122.3 | 4046.2 | 3996.8 | 3996.8 |
| 47.5° | 4194.6 | 4190.8 | 4259.2 | 4377.1 | 4479.8 | 4514.0 | 4483.6 | 4399.9 | 4297.2 | 4225.0 | 4213.6 |
| 50° | 4411.3 | 4426.5 | 4498.8 | 4666.1 | 4799.2 | 4837.2 | 4799.2 | 4688.9 | 4552.0 | 4457.0 | 4441.7 |
| 52.5° | 4658.5 | 4669.9 | 4765.0 | 4947.5 | 5111.0 | 5198.5 | 5141.5 | 4977.9 | 4803.0 | 4688.9 | 4673.7 |
| 55° | 4886.7 | 4894.3 | 5031.2 | 5251.8 | 5453.3 | 5571.2 | 5479.9 | 5270.8 | 5050.2 | 4905.7 | 4890.5 |
| 57.5° | 5046.4 | 5065.4 | 5240.3 | 5525.6 | 5784.2 | 5921.1 | 5784.2 | 5559.8 | 5267.0 | 5088.2 | 5076.8 |
| 60° | 5149.1 | 5179.5 | 5381.1 | 5738.5 | 6096.0 | 6244.3 | 6103.6 | 5791.8 | 5430.5 | 5198.5 | 5187.1 |
| 62.5° | 5095.8 | 5137.7 | 5396.3 | 5864.0 | 6362.2 | 6521.9 | 6339.4 | 5902.0 | 5411.5 | 5118.7 | 5088.2 |
| 65° | 4723.2 | 4753.6 | 5118.7 | 5772.7 | 6461.1 | 6708.3 | 6377.4 | 5780.4 | 5152.9 | 4829.6 | 4768.8 |
| 67.5° | 3951.2 | 4004.4 | 4487.4 | 5331.6 | 6248.1 | 6533.3 | 6115.0 | 5343.0 | 4586.3 | 4190.8 | 4122.3 |
| 70° | 3034.7 | 3129.8 | 3658.4 | 4574.8 | 5582.6 | 5905.8 | 5445.7 | 4510.2 | 3620.3 | 3217.2 | 3091.7 |
| 72.5° | 1753.1 | 1901.4 | 2677.2 | 3570.9 | 4441.7 | 4685.1 | 4038.6 | 3152.6 | 2403.4 | 2118.2 | 2084.0 |
| 75° | 581.8 | 635.1 | 1274.0 | 2057.3 | 2833.1 | 2954.8 | 2525.1 | 1988.9 | 1582.0 | 1353.8 | 1365.2 |
| 77.5° | 285.2 | 285.2 | 384.1 | 753.0 | 1289.2 | 1521.1 | 1380.4 | 962.1 | 692.1 | 524.8 | 509.6 |
| 80° | 228.2 | 228.2 | 266.2 | 368.9 | 433.5 | 509.6 | 433.5 | 315.6 | 258.6 | 235.8 | 247.2 |
| 82.5° | 110.3 | 106.5 | 125.5 | 178.7 | 182.5 | 174.9 | 163.5 | 163.5 | 155.9 | 144.5 | 140.7 |
| 85° | 7.6 | 7.6 | 15.2 | 34.2 | 57.0 | 76.1 | 87.5 | 83.7 | 79.9 | 68.5 | 76.1 |
| 87.5° | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 7.6 | 7.6 | 7.6 | 7.6 |
| 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: SP1-2407-157-5

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-740-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-740-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-5
 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-40-740-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 3915
 CIE u': 0.2262
 CIE v': 0.5044
 Duv: 0.0010
 CIE x: 0.3850
 CIE y: 0.3816
 CIE z: 0.2334
 Peak Wavelength (nm): 449
 Dominant Wavelength (nm): 578
 Purity: 30.05482
 Rf: 73.2
 Rg: 93.9

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.0 | | |
| R1: | 67.6 | R9: | -38.4 |
| R2: | 78.3 | R10: | 48.9 |
| R3: | 87.1 | R11: | 65.3 |
| R4: | 69.7 | R12: | 40.4 |
| R5: | 67.4 | R13: | 69.3 |
| R6: | 69.3 | R14: | 92.6 |
| R7: | 79.7 | R15: | 59.9 |
| R8: | 48.7 | | |



Test Conditions

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

REPORT NUMBER: SP1-2407-157-5

| 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: SP1-2407-157-5

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-5

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 | 112 | NR | 620 | 618 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 153 | NR | 625 | 563 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 216 | NR | 630 | 510 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 291 | NR | 635 | 456 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 366 | NR | 640 | 407 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 436 | NR | 645 | 359 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 492 | NR | 650 | 316 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 536 | NR | 655 | 277 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 567 | NR | 660 | 240 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 596 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 619 | NR | 670 | 179 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 644 | NR | 675 | 154 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 51 | NR | 550 | 671 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 100 | NR | 555 | 701 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 180 | NR | 560 | 735 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 315 | NR | 565 | 768 | NR | 695 | 83 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 514 | NR | 570 | 798 | NR | 700 | 71 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 828 | NR | 575 | 825 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 992 | NR | 580 | 843 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 652 | NR | 585 | 848 | NR | 715 | 44 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 382 | NR | 590 | 844 | NR | 720 | 38 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 282 | NR | 595 | 826 | NR | 725 | 32 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 180 | NR | 600 | 800 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 119 | NR | 605 | 762 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 101 | NR | 610 | 719 | NR | 740 | 20 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 669 | NR | 745 | 17 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-5

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR S/P: 1.49

| 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 | 112 | NR | 620 | 618 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 153 | NR | 625 | 563 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 216 | NR | 630 | 510 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 291 | NR | 635 | 456 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 366 | NR | 640 | 407 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 436 | NR | 645 | 359 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 492 | NR | 650 | 316 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 536 | NR | 655 | 277 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 567 | NR | 660 | 240 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 596 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 619 | NR | 670 | 179 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 644 | NR | 675 | 154 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 51 | NR | 550 | 671 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 100 | NR | 555 | 701 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 180 | NR | 560 | 735 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 315 | NR | 565 | 768 | NR | 695 | 83 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 514 | NR | 570 | 798 | NR | 700 | 71 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 828 | NR | 575 | 825 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 992 | NR | 580 | 843 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 652 | NR | 585 | 848 | NR | 715 | 44 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 382 | NR | 590 | 844 | NR | 720 | 38 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 282 | NR | 595 | 826 | NR | 725 | 32 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 180 | NR | 600 | 800 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 119 | NR | 605 | 762 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 101 | NR | 610 | 719 | NR | 740 | 20 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 669 | NR | 745 | 17 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-5

Melanopic Flux vs. Wavelength



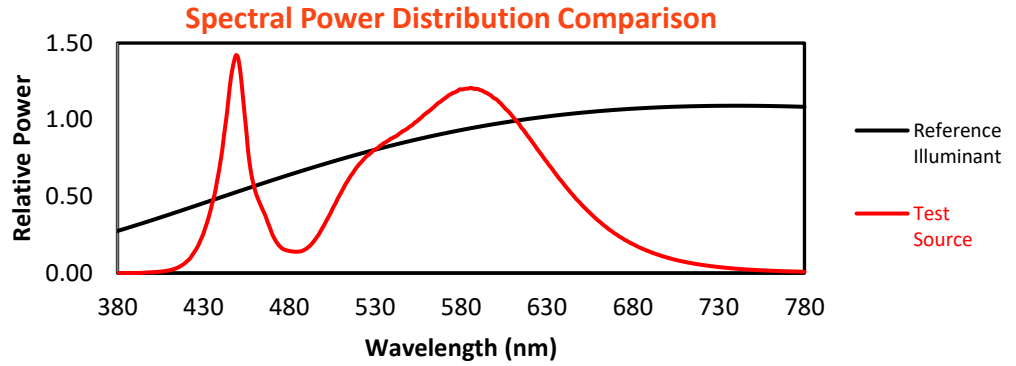
Melanopic Lumens: NR

M/P: 2.88

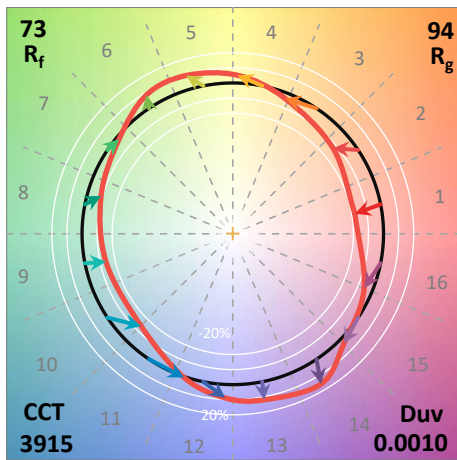
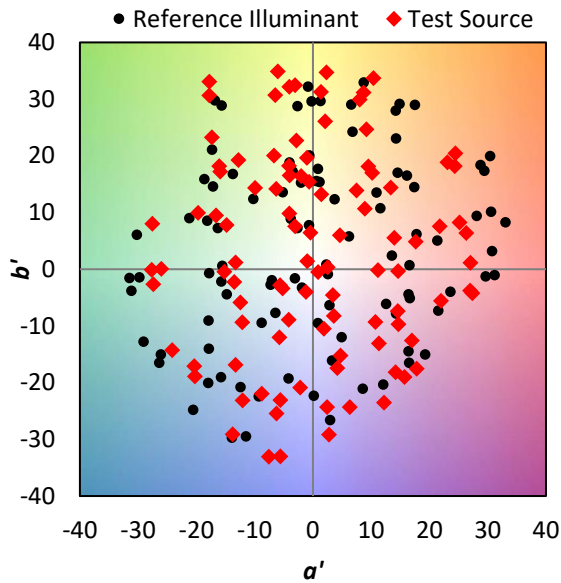
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 112 | NR | 620 | 618 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 153 | NR | 625 | 563 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 216 | NR | 630 | 510 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 291 | NR | 635 | 456 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 366 | NR | 640 | 407 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 436 | NR | 645 | 359 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 492 | NR | 650 | 316 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 536 | NR | 655 | 277 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 567 | NR | 660 | 240 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 596 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 619 | NR | 670 | 179 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 25 | NR | 545 | 644 | NR | 675 | 154 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 51 | NR | 550 | 671 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 100 | NR | 555 | 701 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 180 | NR | 560 | 735 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 315 | NR | 565 | 768 | NR | 695 | 83 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 514 | NR | 570 | 798 | NR | 700 | 71 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 828 | NR | 575 | 825 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 992 | NR | 580 | 843 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 652 | NR | 585 | 848 | NR | 715 | 44 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 382 | NR | 590 | 844 | NR | 720 | 38 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 282 | NR | 595 | 826 | NR | 725 | 32 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 180 | NR | 600 | 800 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 119 | NR | 605 | 762 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 101 | NR | 610 | 719 | NR | 740 | 20 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 669 | NR | 745 | 17 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 73.2$
 $R_g = 93.9$
 CIE $R_a = 71.0$
 $R_g = -38.4$



Color Vector Graphics

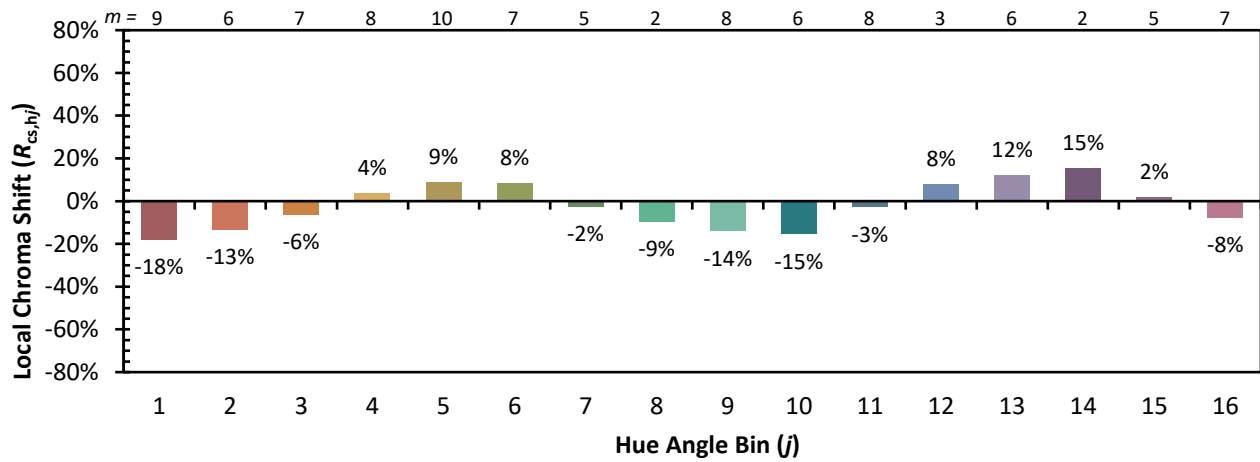


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 88 | CES76 = 50 |
| CES02 = 61 | CES27 = 88 | CES52 = 87 | CES77 = 69 |
| CES03 = 30 | CES28 = 81 | CES53 = 77 | CES78 = 53 |
| CES04 = 70 | CES29 = 65 | CES54 = 84 | CES79 = 81 |
| CES05 = 47 | CES30 = 81 | CES55 = 83 | CES80 = 78 |
| CES06 = 50 | CES31 = 69 | CES56 = 73 | CES81 = 77 |
| CES07 = 40 | CES32 = 60 | CES57 = 72 | CES82 = 91 |
| CES08 = 39 | CES33 = 76 | CES58 = 73 | CES83 = 89 |
| CES09 = 29 | CES34 = 70 | CES59 = 85 | CES84 = 86 |
| CES10 = 74 | CES35 = 83 | CES60 = 89 | CES85 = 77 |
| CES11 = 57 | CES36 = 91 | CES61 = 81 | CES86 = 71 |
| CES12 = 63 | CES37 = 79 | CES62 = 85 | CES87 = 76 |
| CES13 = 42 | CES38 = 92 | CES63 = 72 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 64 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 61 | CES90 = 79 |
| CES16 = 46 | CES41 = 93 | CES66 = 57 | CES91 = 74 |
| CES17 = 49 | CES42 = 80 | CES67 = 54 | CES92 = 57 |
| CES18 = 56 | CES43 = 76 | CES68 = 63 | CES93 = 74 |
| CES19 = 72 | CES44 = 99 | CES69 = 73 | CES94 = 51 |
| CES20 = 65 | CES45 = 85 | CES70 = 55 | CES95 = 65 |
| CES21 = 86 | CES46 = 82 | CES71 = 48 | CES96 = 76 |
| CES22 = 78 | CES47 = 86 | CES72 = 83 | CES97 = 84 |
| CES23 = 92 | CES48 = 77 | CES73 = 45 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 93 | CES99 = 62 |
| CES25 = 72 | CES50 = 88 | CES75 = 51 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)