

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: P868688

Luminaire Tested: **EMM2-HTN-SA3A-750-U-T5R**

Issue Date: 08/22/2024



Test Information

Test Method: LM-79-08
Report Number: P868688
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/22/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HTN-SA3A-750-U-T5R
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 130W 70CRI 5000K
FIXTURE w/ TYPE V ROUND DISTRIBUTION OPTIC
Light Source: (30) 5000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

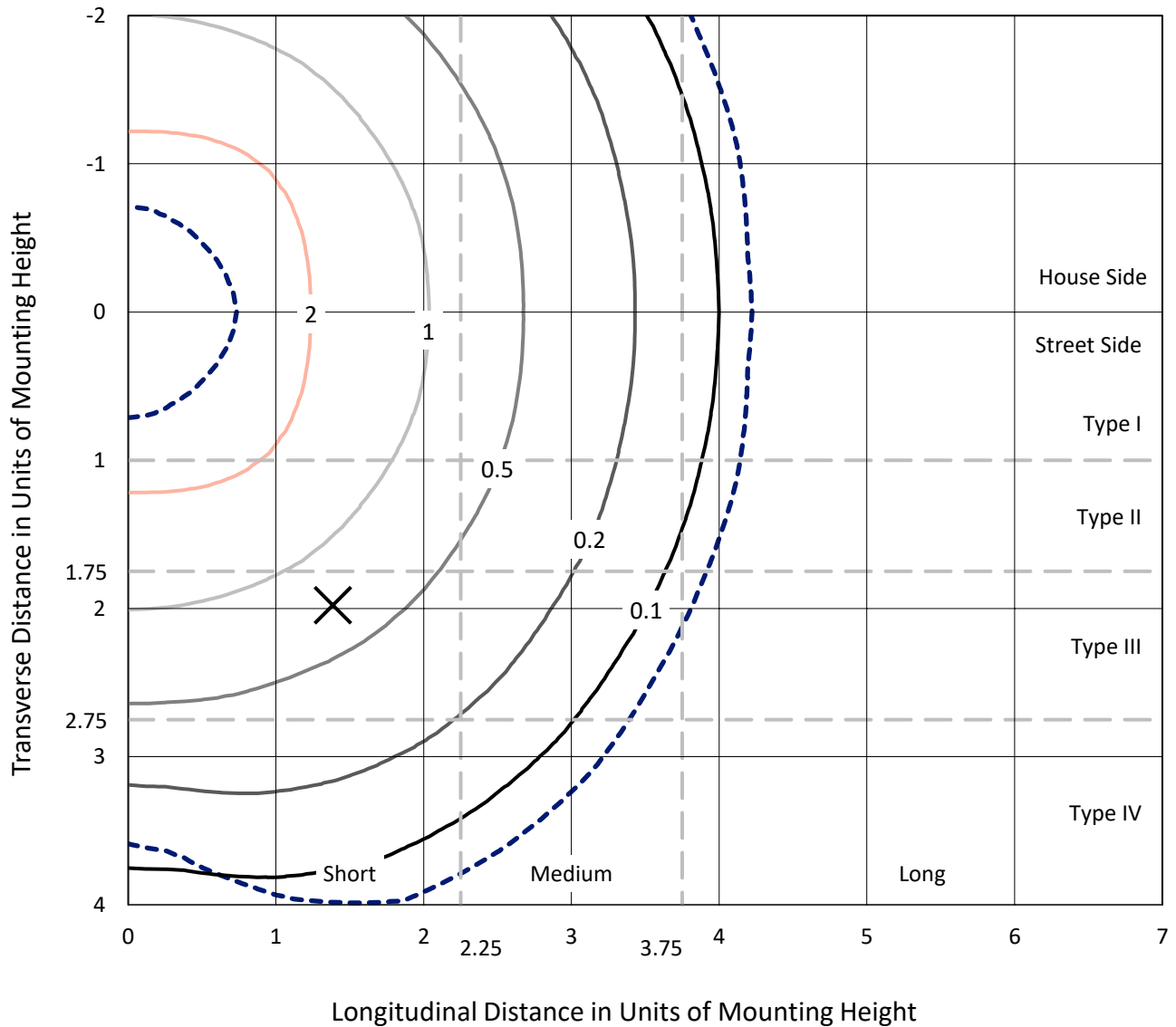
Lumens per Lamp: N/A
Luminaire Lumens: 17064.2 lumens
Efficiency: N/A
Efficacy: 151.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G2

Input Watts (W): 113
Input Voltage (V): 120
Input Current (A_{in}): 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: 24 FT

REPORT NUMBER: P868688
 CATALOG NUMBER: EMM2-HTN-SA3A-750-U-T5R

Iso-Footcandle Lines of Horizontal Illumination

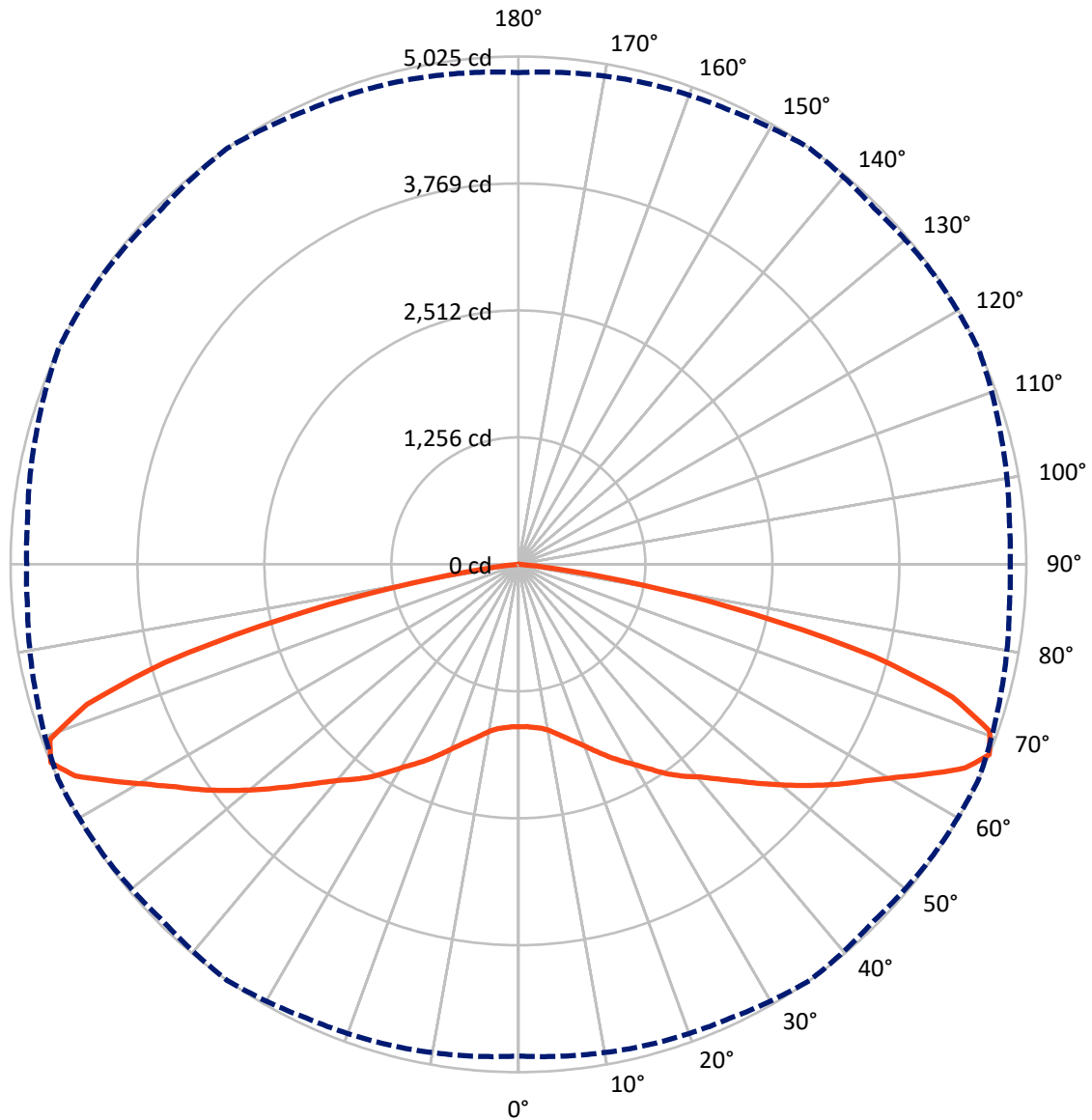
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4 fc
 Type V - Short - N/A

REPORT NUMBER: P868688
CATALOG NUMBER: EMM2-HTN-SA3A-750-U-T5R

Luminous Intensity Polar Plot



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

REPORT NUMBER: P868688
 CATALOG NUMBER: EMM2-HTN-SA3A-750-U-T5R

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8532.1 | 0.0 | 8532.1 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 8532.1 | 0.0 | 8532.1 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 17064.2 | 0.0 | 17064.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 156.3 | 0.9 |
| 10°-20° | 512.3 | 3.0 |
| 20°-30° | 979.1 | 5.7 |
| 30°-40° | 1582.3 | 9.3 |
| 40°-50° | 2315.9 | 13.6 |
| 50°-60° | 3321.0 | 19.5 |
| 60°-70° | 4654.6 | 27.3 |
| 70°-80° | 3284.3 | 19.2 |
| 80°-90° | 258.5 | 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° | 17064.2 | 100.0 |
| 0°-180° | 17064.2 | 100.0 |



REPORT NUMBER: P868688

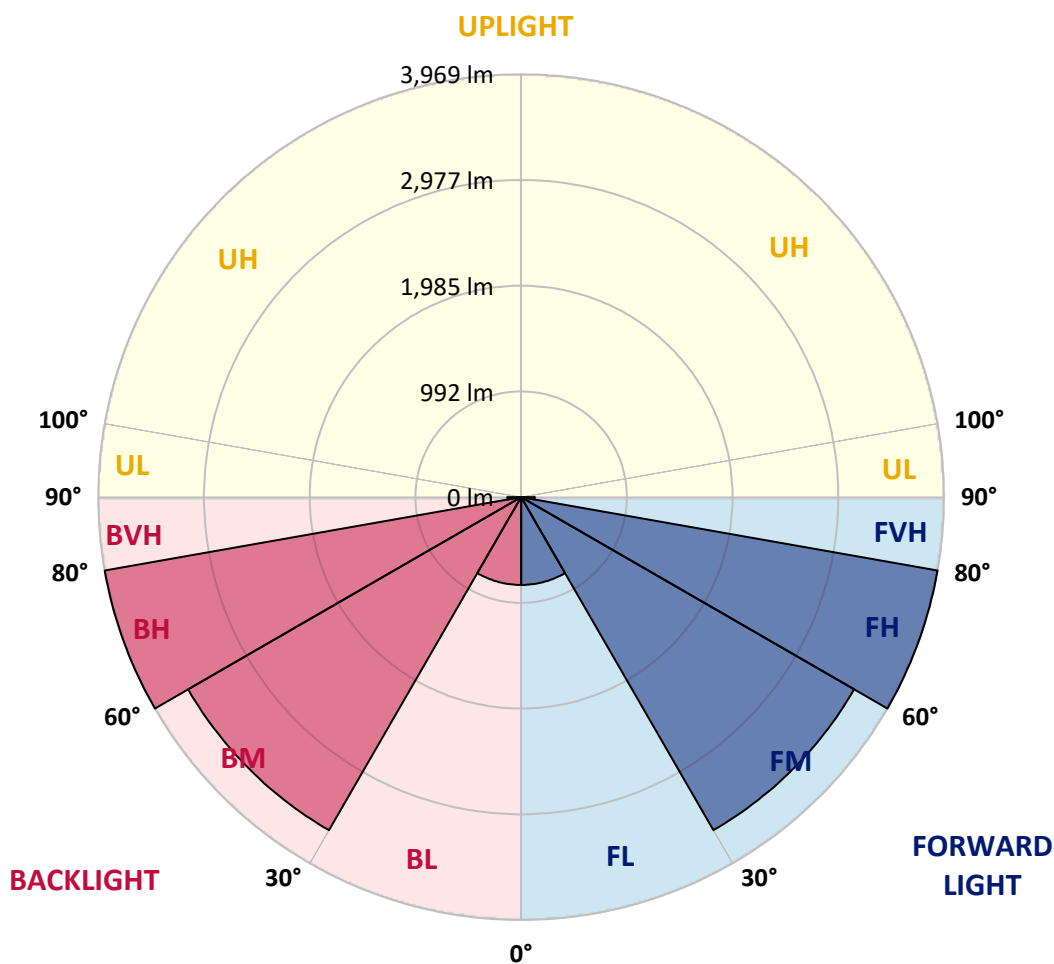
CATALOG NUMBER: EMM2-HTN-SA3A-750-U-T5R

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 823.9 | 4.8 | | | |
| FM (30°-60°) | 3609.6 | 21.2 | | | |
| FH (60°-80°) | 3969.4 | 23.3 | | | G2/5000 |
| FVH (80°-90°) | 129.3 | 0.8 | | | G2/225 |
| BL (0°-30°) | 823.9 | 4.8 | B2/1000 | | |
| BM (30°-60°) | 3609.6 | 21.2 | B3/5000 | | |
| BH (60°-80°) | 3969.4 | 23.3 | B4/5000 | | G2/5000 |
| BVH (80°-90°) | 129.3 | 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: P868688

CATALOG NUMBER: EMM2-HTN-SA3A-750-U-T5R

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 | 1607.4 |
| 2.5° | 1617.4 | 1614.1 | 1610.7 | 1610.7 | 1607.4 | 1610.7 | 1607.4 | 1610.7 | 1607.4 | 1607.4 | 1607.4 |
| 5° | 1627.3 | 1624.0 | 1624.0 | 1624.0 | 1620.7 | 1620.7 | 1620.7 | 1620.7 | 1617.4 | 1614.1 | 1617.4 |
| 7.5° | 1637.3 | 1637.3 | 1634.0 | 1640.6 | 1637.3 | 1640.6 | 1640.6 | 1643.9 | 1637.3 | 1634.0 | 1637.3 |
| 10° | 1663.9 | 1663.9 | 1663.9 | 1670.5 | 1670.5 | 1680.5 | 1680.5 | 1683.8 | 1680.5 | 1673.8 | 1673.8 |
| 12.5° | 1720.3 | 1717.0 | 1717.0 | 1717.0 | 1723.6 | 1730.3 | 1736.9 | 1736.9 | 1733.6 | 1723.6 | 1723.6 |
| 15° | 1783.4 | 1790.1 | 1783.4 | 1780.1 | 1783.4 | 1790.1 | 1796.7 | 1796.7 | 1793.4 | 1790.1 | 1790.1 |
| 17.5° | 1859.8 | 1863.1 | 1856.5 | 1849.8 | 1849.8 | 1859.8 | 1863.1 | 1863.1 | 1859.8 | 1853.2 | 1853.2 |
| 20° | 1926.2 | 1929.6 | 1929.6 | 1926.2 | 1929.6 | 1936.2 | 1939.5 | 1942.8 | 1932.9 | 1922.9 | 1922.9 |
| 22.5° | 1982.7 | 1986.0 | 1992.7 | 2005.9 | 2019.2 | 2025.9 | 2022.5 | 2022.5 | 2005.9 | 1996.0 | 1992.7 |
| 25° | 2052.4 | 2062.4 | 2075.7 | 2092.3 | 2115.5 | 2132.1 | 2125.5 | 2112.2 | 2098.9 | 2079.0 | 2075.7 |
| 27.5° | 2188.6 | 2188.6 | 2175.3 | 2182.0 | 2208.5 | 2225.1 | 2218.5 | 2208.5 | 2182.0 | 2168.7 | 2165.4 |
| 30° | 2294.9 | 2294.9 | 2294.9 | 2288.2 | 2304.8 | 2324.8 | 2318.1 | 2301.5 | 2288.2 | 2281.6 | 2281.6 |
| 32.5° | 2397.8 | 2391.2 | 2401.2 | 2414.4 | 2421.1 | 2427.7 | 2427.7 | 2414.4 | 2391.2 | 2381.2 | 2381.2 |
| 35° | 2494.1 | 2500.8 | 2510.7 | 2530.7 | 2547.3 | 2537.3 | 2520.7 | 2510.7 | 2487.5 | 2467.6 | 2467.6 |
| 37.5° | 2587.1 | 2593.8 | 2603.7 | 2633.6 | 2660.2 | 2656.9 | 2636.9 | 2610.4 | 2580.5 | 2563.9 | 2553.9 |
| 40° | 2653.6 | 2656.9 | 2683.4 | 2729.9 | 2766.5 | 2779.8 | 2763.2 | 2726.6 | 2680.1 | 2646.9 | 2650.2 |
| 42.5° | 2733.3 | 2739.9 | 2783.1 | 2849.5 | 2902.6 | 2922.6 | 2899.3 | 2849.5 | 2783.1 | 2739.9 | 2739.9 |
| 45° | 2849.5 | 2852.8 | 2909.3 | 2992.3 | 3062.0 | 3095.3 | 3062.0 | 2992.3 | 2906.0 | 2862.8 | 2859.5 |
| 47.5° | 2965.7 | 2975.7 | 3038.8 | 3138.4 | 3241.4 | 3281.2 | 3244.7 | 3155.0 | 3052.1 | 2998.9 | 2992.3 |
| 50° | 3098.6 | 3105.2 | 3181.6 | 3317.8 | 3434.0 | 3487.1 | 3440.7 | 3327.7 | 3214.8 | 3148.4 | 3151.7 |
| 52.5° | 3228.1 | 3248.0 | 3351.0 | 3493.8 | 3633.3 | 3693.1 | 3626.6 | 3503.8 | 3384.2 | 3321.1 | 3317.8 |
| 55° | 3420.7 | 3444.0 | 3533.6 | 3693.1 | 3839.2 | 3905.6 | 3842.5 | 3706.3 | 3576.8 | 3507.1 | 3493.8 |
| 57.5° | 3663.2 | 3676.5 | 3756.2 | 3918.9 | 4041.8 | 4104.9 | 4068.3 | 3942.1 | 3819.3 | 3732.9 | 3716.3 |
| 60° | 3938.8 | 3952.1 | 4015.2 | 4181.3 | 4280.9 | 4327.4 | 4314.1 | 4241.0 | 4158.0 | 4118.2 | 4108.2 |
| 62.5° | 4330.7 | 4334.0 | 4367.2 | 4463.6 | 4563.2 | 4583.1 | 4549.9 | 4533.3 | 4559.9 | 4516.7 | 4526.7 |
| 65° | 4779.1 | 4779.1 | 4769.1 | 4782.4 | 4858.8 | 4835.5 | 4812.3 | 4885.3 | 4872.0 | 4799.0 | 4785.7 |
| 67.5° | 4865.4 | 4885.3 | 4925.2 | 4955.1 | 5024.8 | 4981.6 | 5011.5 | 5024.8 | 4941.8 | 4875.4 | 4865.4 |
| 70° | 4354.0 | 4377.2 | 4599.7 | 4735.9 | 4948.4 | 4988.3 | 4892.0 | 4842.2 | 4749.2 | 4626.3 | 4593.1 |
| 72.5° | 2969.1 | 3085.3 | 3726.3 | 4164.7 | 4490.1 | 4539.9 | 4486.8 | 4423.7 | 4237.7 | 4141.4 | 4075.0 |
| 75° | 2371.3 | 2434.4 | 3005.6 | 3437.3 | 3630.0 | 3626.6 | 3414.1 | 3344.3 | 3198.2 | 3184.9 | 3198.2 |
| 77.5° | 1448.0 | 1461.3 | 2022.5 | 2361.3 | 2384.5 | 2371.3 | 2284.9 | 2231.8 | 2251.7 | 2152.1 | 2168.7 |
| 80° | 441.7 | 481.6 | 763.9 | 1152.4 | 1238.8 | 1198.9 | 1182.3 | 1202.2 | 1222.2 | 1252.1 | 1298.5 |
| 82.5° | 89.7 | 112.9 | 152.8 | 332.1 | 378.6 | 375.3 | 372.0 | 411.8 | 448.3 | 465.0 | 564.6 |
| 85° | 10.0 | 10.0 | 13.3 | 26.6 | 56.5 | 89.7 | 93.0 | 83.0 | 126.2 | 122.9 | 86.3 |
| 87.5° | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| 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: SP1-2407-157-6

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-750-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-750-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-6
 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-40-750-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 5094
 CIE u': 0.2082
 CIE v': 0.4867
 Duv: 0.0032
 CIE x: 0.3430
 CIE y: 0.3564
 CIE z: 0.3006
 Peak Wavelength (nm): 451
 Dominant Wavelength (nm): 568
 Purity: 9.86439
 Rf: 73.7
 Rg: 93

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.6 | R9: | -39.6 |
| R2: | 78.1 | R10: | 47.6 |
| R3: | 84.6 | R11: | 68.2 |
| R4: | 71.6 | R12: | 41.4 |
| R5: | 69.6 | R13: | 70.4 |
| R6: | 69.4 | R14: | 91.4 |
| R7: | 80.9 | R15: | 61.4 |
| R8: | 53.1 | | |



Test Conditions

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

REPORT NUMBER: SP1-2407-157-6

| 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 5000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-6

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 | 114 | NR | 620 | 361 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 326 | NR | 755 | 8 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 197 | NR | 630 | 294 | NR | 760 | 7 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 259 | NR | 635 | 261 | NR | 765 | 6 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 319 | NR | 640 | 232 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 373 | NR | 645 | 204 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 414 | NR | 650 | 179 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 445 | NR | 655 | 157 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 465 | NR | 660 | 136 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 482 | NR | 665 | 118 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 493 | NR | 670 | 102 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 505 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 515 | NR | 680 | 75 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 72 | NR | 555 | 527 | NR | 685 | 65 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 134 | NR | 560 | 540 | NR | 690 | 56 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 550 | NR | 695 | 48 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 407 | NR | 570 | 557 | NR | 700 | 41 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 561 | NR | 705 | 35 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 988 | NR | 580 | 559 | NR | 710 | 30 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 828 | NR | 585 | 551 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 473 | NR | 590 | 537 | NR | 720 | 22 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 333 | NR | 595 | 516 | NR | 725 | 19 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 491 | NR | 730 | 16 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 146 | NR | 605 | 461 | NR | 735 | 14 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 113 | NR | 610 | 429 | NR | 740 | 12 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 106 | NR | 615 | 395 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

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Scotopic Flux vs. Wavelength



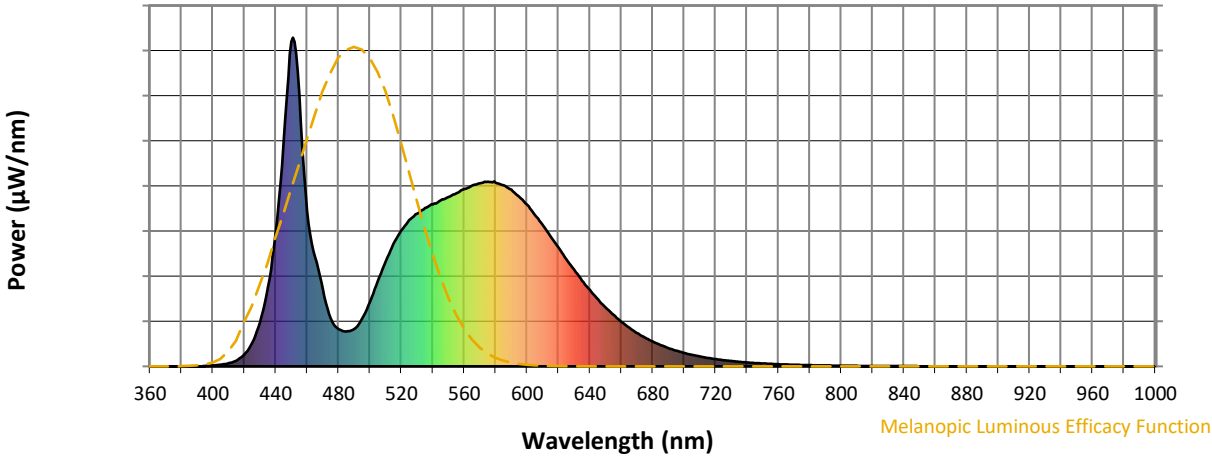
Scotopic Lumens: NR

S/P: 1.81

| 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 | 114 | NR | 620 | 361 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 326 | NR | 755 | 8 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 197 | NR | 630 | 294 | NR | 760 | 7 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 259 | NR | 635 | 261 | NR | 765 | 6 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 319 | NR | 640 | 232 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 373 | NR | 645 | 204 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 414 | NR | 650 | 179 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 445 | NR | 655 | 157 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 465 | NR | 660 | 136 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 482 | NR | 665 | 118 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 493 | NR | 670 | 102 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 505 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 515 | NR | 680 | 75 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 72 | NR | 555 | 527 | NR | 685 | 65 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 134 | NR | 560 | 540 | NR | 690 | 56 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 550 | NR | 695 | 48 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 407 | NR | 570 | 557 | NR | 700 | 41 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 561 | NR | 705 | 35 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 988 | NR | 580 | 559 | NR | 710 | 30 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 828 | NR | 585 | 551 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 473 | NR | 590 | 537 | NR | 720 | 22 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 333 | NR | 595 | 516 | NR | 725 | 19 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 491 | NR | 730 | 16 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 146 | NR | 605 | 461 | NR | 735 | 14 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 113 | NR | 610 | 429 | NR | 740 | 12 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 106 | NR | 615 | 395 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-6

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.73

| 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 | 114 | NR | 620 | 361 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 326 | NR | 755 | 8 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 197 | NR | 630 | 294 | NR | 760 | 7 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 259 | NR | 635 | 261 | NR | 765 | 6 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 319 | NR | 640 | 232 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 373 | NR | 645 | 204 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 414 | NR | 650 | 179 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 445 | NR | 655 | 157 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 465 | NR | 660 | 136 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 482 | NR | 665 | 118 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 493 | NR | 670 | 102 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 505 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 515 | NR | 680 | 75 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 72 | NR | 555 | 527 | NR | 685 | 65 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 134 | NR | 560 | 540 | NR | 690 | 56 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 550 | NR | 695 | 48 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 407 | NR | 570 | 557 | NR | 700 | 41 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 561 | NR | 705 | 35 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 988 | NR | 580 | 559 | NR | 710 | 30 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 828 | NR | 585 | 551 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 473 | NR | 590 | 537 | NR | 720 | 22 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 333 | NR | 595 | 516 | NR | 725 | 19 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 491 | NR | 730 | 16 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 146 | NR | 605 | 461 | NR | 735 | 14 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 113 | NR | 610 | 429 | NR | 740 | 12 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 106 | NR | 615 | 395 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 73.7$
 $R_g = 93$
 $CIE R_a = 72.0$
 $R_9 = -39.6$

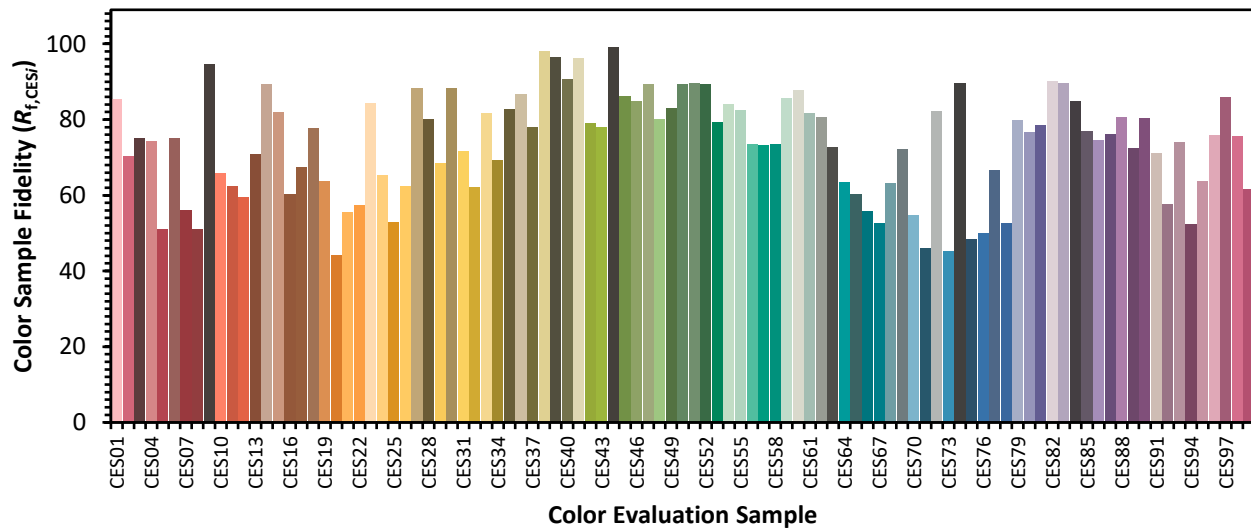


Color Vector Graphics

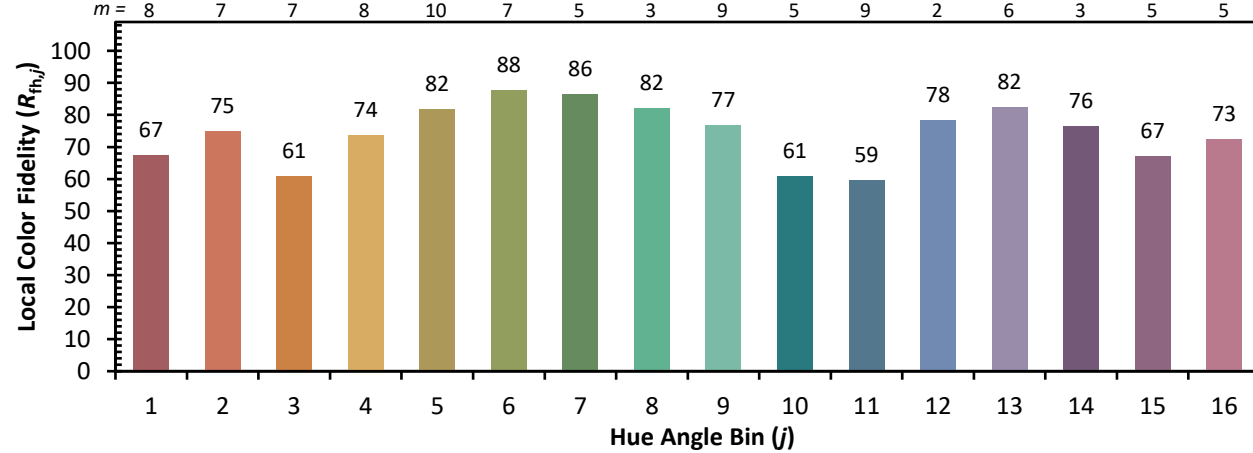


Individual Sample Fidelity Index ($R_{f,i}$)

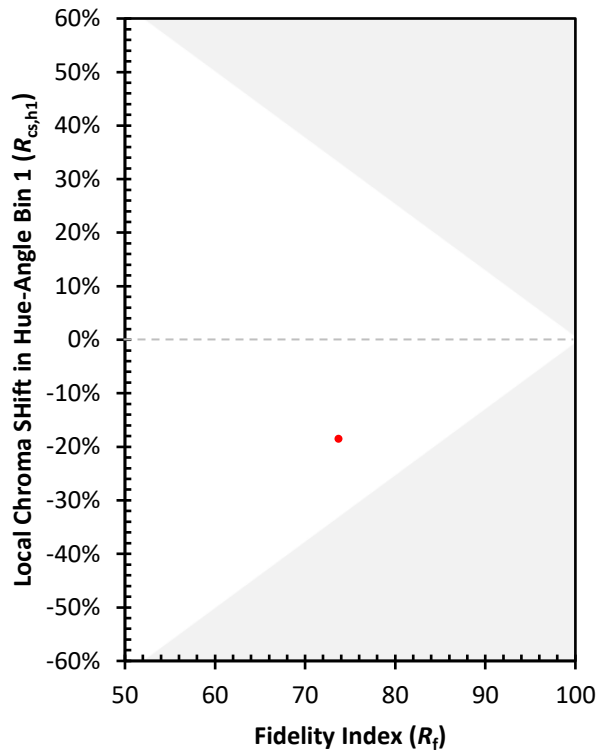
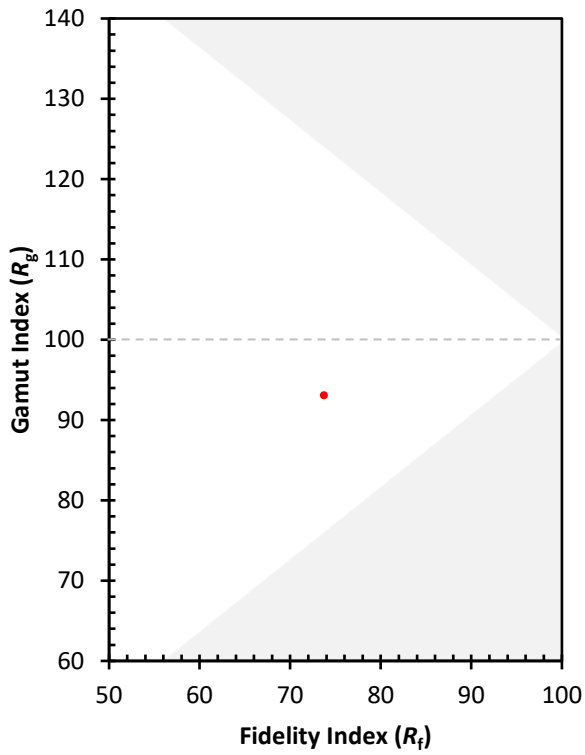
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 62 | CES51 = 90 | CES76 = 50 |
| CES02 = 59 | CES27 = 88 | CES52 = 89 | CES77 = 67 |
| CES03 = 30 | CES28 = 80 | CES53 = 79 | CES78 = 53 |
| CES04 = 69 | CES29 = 69 | CES54 = 84 | CES79 = 80 |
| CES05 = 46 | CES30 = 88 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 72 | CES56 = 74 | CES81 = 78 |
| CES07 = 38 | CES32 = 62 | CES57 = 73 | CES82 = 90 |
| CES08 = 38 | CES33 = 82 | CES58 = 73 | CES83 = 90 |
| CES09 = 29 | CES34 = 69 | CES59 = 86 | CES84 = 85 |
| CES10 = 72 | CES35 = 83 | CES60 = 88 | CES85 = 77 |
| CES11 = 56 | CES36 = 87 | CES61 = 82 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 81 | CES87 = 76 |
| CES13 = 41 | CES38 = 98 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 96 | CES64 = 63 | CES89 = 72 |
| CES15 = 70 | CES40 = 91 | CES65 = 60 | CES90 = 80 |
| CES16 = 46 | CES41 = 96 | CES66 = 56 | CES91 = 71 |
| CES17 = 49 | CES42 = 79 | CES67 = 53 | CES92 = 58 |
| CES18 = 55 | CES43 = 78 | CES68 = 63 | CES93 = 74 |
| CES19 = 71 | CES44 = 99 | CES69 = 72 | CES94 = 52 |
| CES20 = 63 | CES45 = 86 | CES70 = 55 | CES95 = 64 |
| CES21 = 85 | CES46 = 85 | CES71 = 46 | CES96 = 76 |
| CES22 = 77 | CES47 = 89 | CES72 = 82 | CES97 = 86 |
| CES23 = 91 | CES48 = 80 | CES73 = 45 | CES98 = 76 |
| CES24 = 90 | CES49 = 83 | CES74 = 90 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 48 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)