

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: P867551

Luminaire Tested: **MEM2-HTN-SA-100-730-U-T2U**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867551
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-100-730-U-T2U
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 100W 70CRI 3000K
FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC
Light Source: (20) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

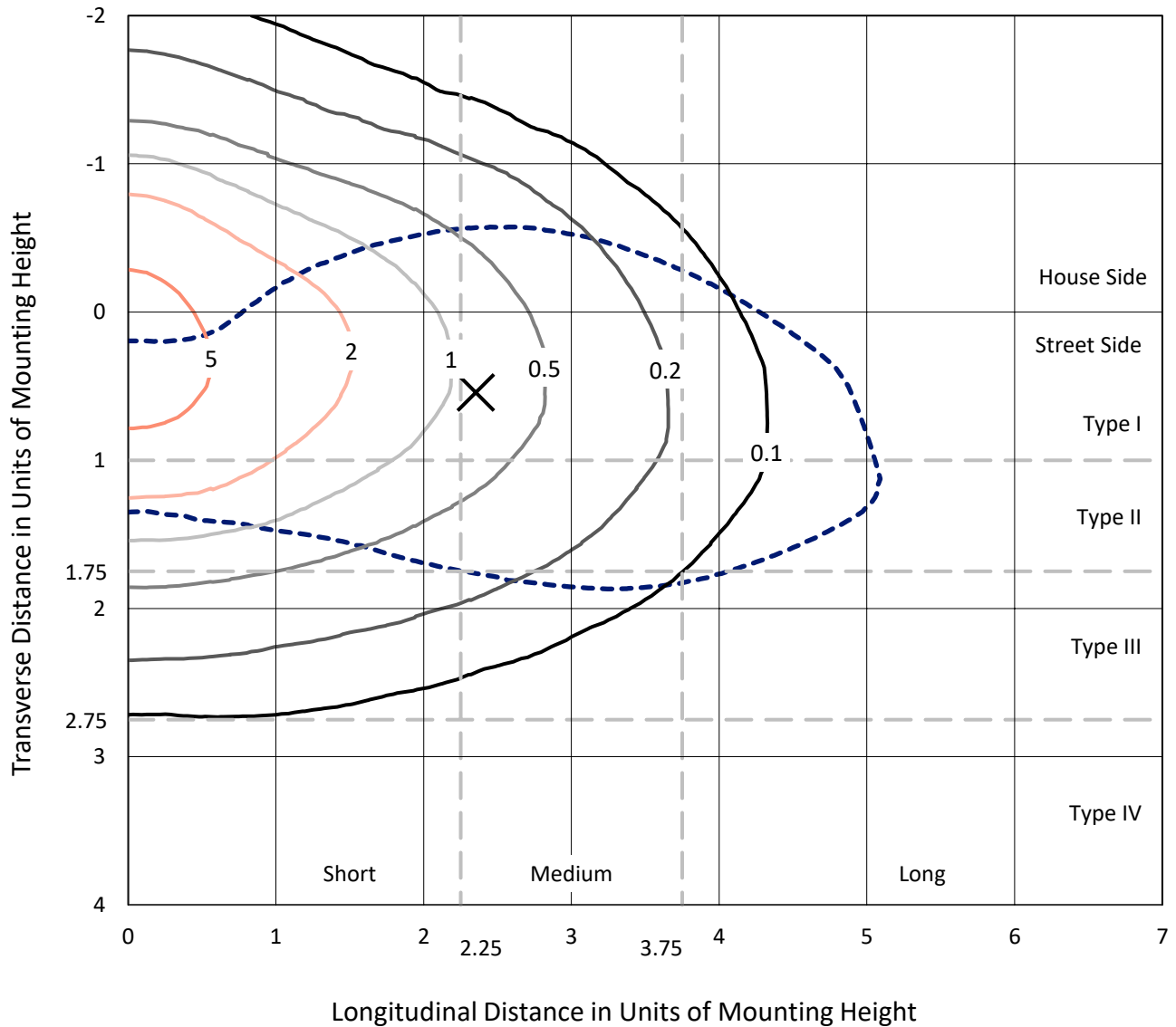
Lumens per Lamp: N/A
Luminaire Lumens: 13075.8 lumens
Efficiency: N/A
Efficacy: 129.5 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B3 - U0 - G3

Input Watts (W): 101
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.45%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P867551
 CATALOG NUMBER: MEM2-HTN-SA-100-730-U-T2U

Iso-Footcandle Lines of Horizontal Illumination

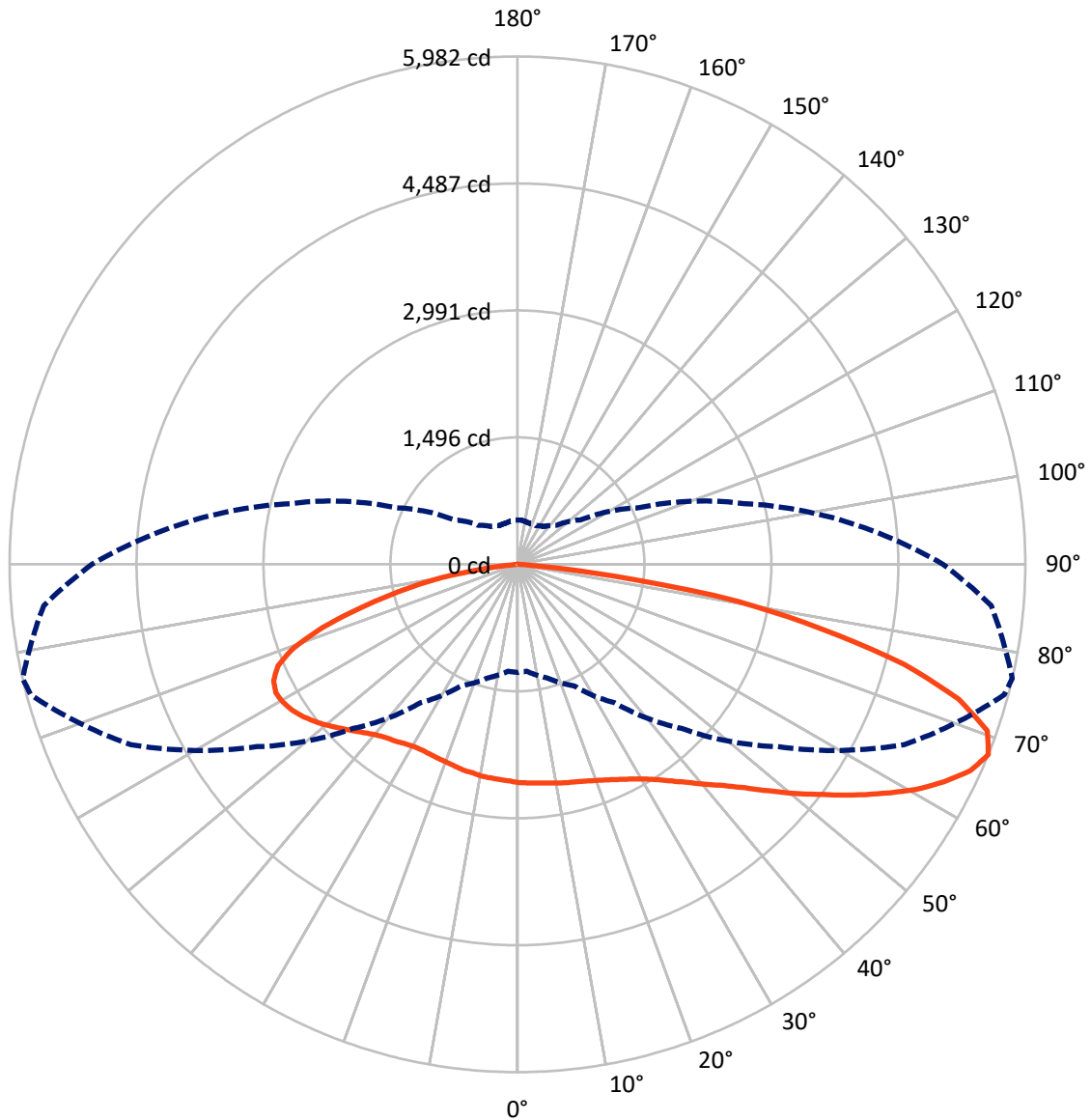
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.1 fc
 Type III - Medium - N/A

REPORT NUMBER: P867551
CATALOG NUMBER: MEM2-HTN-SA-100-730-U-T2U

Luminous Intensity Polar Plot



— Vertical Plane Through 77-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P867551
 CATALOG NUMBER: MEM2-HTN-SA-100-730-U-T2U

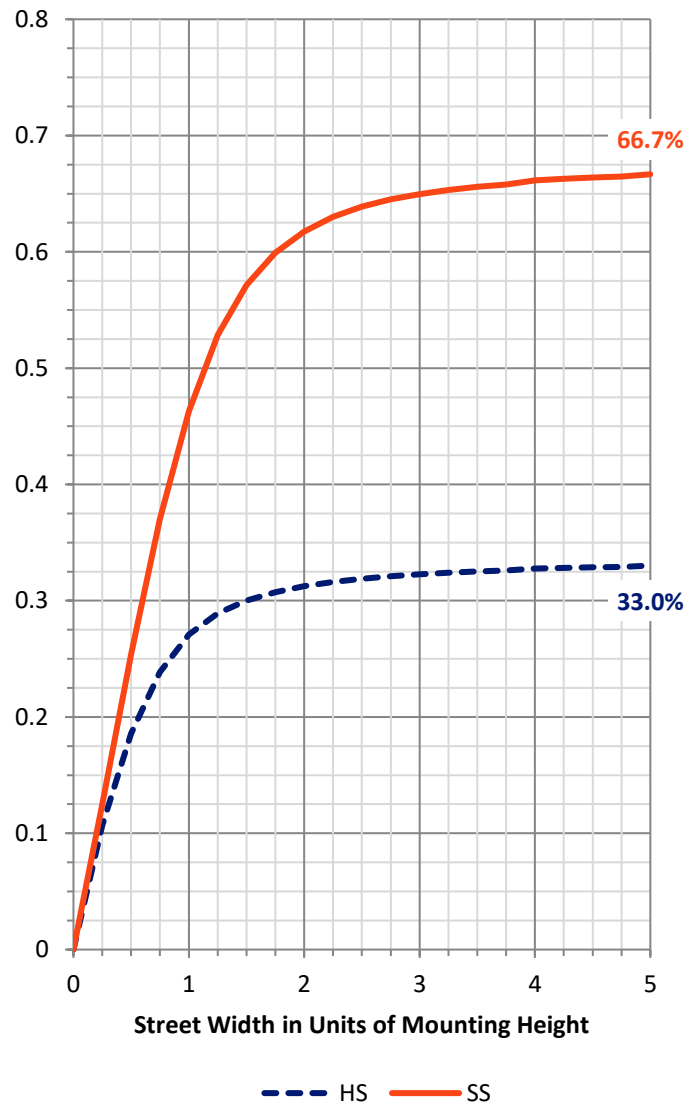
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4348.2 | 0.0 | 4348.2 |
| | % Fixture | 33.3 | 0.0 | 33.3 |
| Street Side | Lumens | 8727.7 | 0.0 | 8727.7 |
| | % Fixture | 66.7 | 0.0 | 66.7 |
| Total | Lumens | 13075.8 | 0.0 | 13075.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 247.1 | 1.9 |
| 10°-20° | 749.4 | 5.7 |
| 20°-30° | 1263.4 | 9.7 |
| 30°-40° | 1792.8 | 13.7 |
| 40°-50° | 2268.3 | 17.3 |
| 50°-60° | 2484.8 | 19.0 |
| 60°-70° | 2402.0 | 18.4 |
| 70°-80° | 1615.5 | 12.4 |
| 80°-90° | 252.5 | 1.9 |
| 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° | 13075.8 | 100.0 |
| 0°-180° | 13075.8 | 100.0 |



REPORT NUMBER: P867551

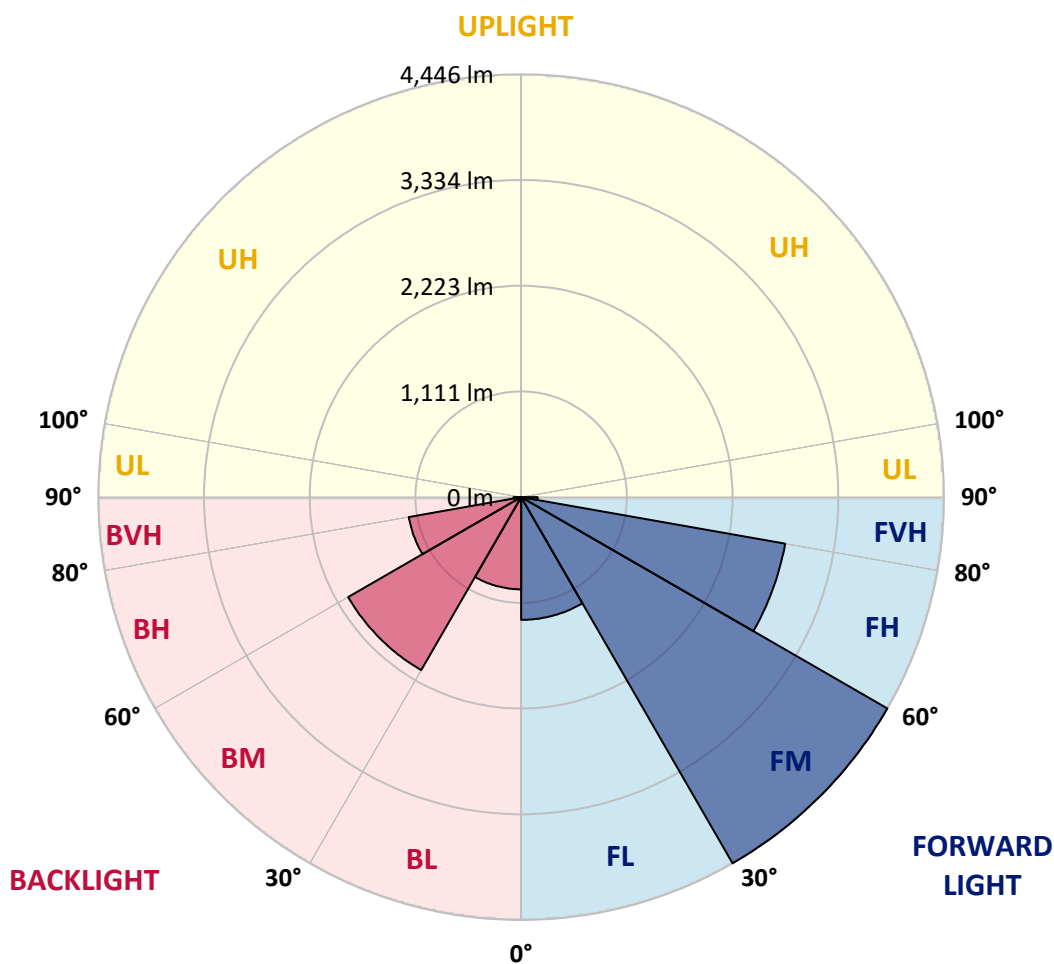
CATALOG NUMBER: MEM2-HTN-SA-100-730-U-T2U

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1290.6 | 9.9 | | | |
| FM (30°-60°) | 4445.9 | 34.0 | | | |
| FH (60°-80°) | 2818.3 | 21.6 | | | G2/5000 |
| FVH (80°-90°) | 172.9 | 1.3 | | | G2/225 |
| BL (0°-30°) | 969.3 | 7.4 | B2/1000 | | |
| BM (30°-60°) | 2100.0 | 16.1 | B2/2500 | | |
| BH (60°-80°) | 1199.2 | 9.2 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 79.6 | 0.6 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type III Medium





REPORT NUMBER: P867551
 CATALOG NUMBER: MEM2-HTN-SA-100-730-U-T2U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 |
| 2.5° | 2627.7 | 2625.2 | 2612.2 | 2617.4 | 2601.9 | 2612.2 | 2596.7 | 2583.8 | 2581.2 | 2578.6 | 2581.2 |
| 5° | 2710.5 | 2697.6 | 2684.6 | 2676.9 | 2664.0 | 2658.8 | 2632.9 | 2607.1 | 2591.5 | 2588.9 | 2583.8 |
| 7.5° | 2806.2 | 2801.0 | 2782.9 | 2772.6 | 2736.4 | 2718.3 | 2682.1 | 2635.5 | 2612.2 | 2601.9 | 2588.9 |
| 10° | 2904.5 | 2917.4 | 2894.1 | 2873.4 | 2832.1 | 2793.3 | 2731.2 | 2671.7 | 2625.2 | 2620.0 | 2591.5 |
| 12.5° | 3026.0 | 3023.5 | 3007.9 | 2971.7 | 2922.6 | 2868.3 | 2793.3 | 2710.5 | 2648.4 | 2638.1 | 2596.7 |
| 15° | 3134.7 | 3132.1 | 3111.4 | 3077.8 | 3013.1 | 2945.9 | 2845.0 | 2749.3 | 2671.7 | 2656.2 | 2607.1 |
| 17.5° | 3235.5 | 3230.4 | 3217.4 | 3181.2 | 3101.0 | 3018.3 | 2920.0 | 2793.3 | 2700.2 | 2682.1 | 2614.8 |
| 20° | 3323.5 | 3328.6 | 3313.1 | 3276.9 | 3201.9 | 3114.0 | 2989.8 | 2850.2 | 2736.4 | 2715.7 | 2638.1 |
| 22.5° | 3419.2 | 3421.8 | 3414.0 | 3401.1 | 3305.4 | 3212.3 | 3077.8 | 2914.8 | 2777.8 | 2757.1 | 2664.0 |
| 25° | 3520.0 | 3522.6 | 3527.8 | 3520.0 | 3411.4 | 3310.5 | 3168.3 | 2995.0 | 2834.7 | 2806.2 | 2700.2 |
| 27.5° | 3636.4 | 3639.0 | 3649.4 | 3633.8 | 3517.4 | 3411.4 | 3269.2 | 3080.4 | 2894.1 | 2863.1 | 2731.2 |
| 30° | 3768.3 | 3778.7 | 3770.9 | 3765.7 | 3631.2 | 3527.8 | 3370.0 | 3168.3 | 2971.7 | 2932.9 | 2785.5 |
| 32.5° | 3926.1 | 3923.5 | 3908.0 | 3892.5 | 3755.4 | 3646.8 | 3483.8 | 3282.1 | 3067.4 | 3023.5 | 2873.4 |
| 35° | 4039.9 | 4039.9 | 4016.6 | 4008.9 | 3882.1 | 3768.3 | 3608.0 | 3408.8 | 3176.0 | 3134.7 | 2966.6 |
| 37.5° | 4109.7 | 4120.1 | 4102.0 | 4107.1 | 3985.6 | 3879.5 | 3732.1 | 3538.1 | 3295.0 | 3258.8 | 3080.4 |
| 40° | 4135.6 | 4161.5 | 4177.0 | 4197.7 | 4076.1 | 3985.6 | 3864.0 | 3677.8 | 3447.6 | 3406.2 | 3217.4 |
| 42.5° | 4140.8 | 4179.6 | 4233.9 | 4277.8 | 4140.8 | 4065.8 | 3990.8 | 3820.1 | 3597.6 | 3561.4 | 3367.4 |
| 45° | 4114.9 | 4096.8 | 4228.7 | 4233.9 | 4177.0 | 4130.4 | 4102.0 | 3990.8 | 3814.9 | 3755.4 | 3553.7 |
| 47.5° | 3918.3 | 3897.6 | 3933.9 | 4099.4 | 4133.0 | 4158.9 | 4215.8 | 4189.9 | 4032.1 | 3985.6 | 3768.3 |
| 50° | 3600.2 | 3589.9 | 3734.7 | 3913.2 | 4024.4 | 4156.3 | 4308.9 | 4381.3 | 4272.7 | 4244.2 | 4039.9 |
| 52.5° | 3075.2 | 3046.7 | 3341.6 | 3688.1 | 3882.1 | 4130.4 | 4373.5 | 4577.9 | 4544.2 | 4502.9 | 4272.7 |
| 55° | 2741.5 | 2741.5 | 2940.7 | 3372.6 | 3701.1 | 4037.3 | 4414.9 | 4784.8 | 4844.3 | 4797.7 | 4539.1 |
| 57.5° | 2384.6 | 2413.1 | 2620.0 | 2917.4 | 3439.9 | 3866.6 | 4409.7 | 4958.1 | 5133.9 | 5090.0 | 4821.0 |
| 60° | 2079.4 | 2102.7 | 2221.7 | 2521.7 | 3132.1 | 3641.6 | 4352.8 | 5100.3 | 5402.9 | 5387.4 | 5069.3 |
| 62.5° | 1769.1 | 1797.5 | 1893.2 | 2175.1 | 2726.0 | 3383.0 | 4233.9 | 5177.9 | 5656.4 | 5640.9 | 5320.1 |
| 65° | 1520.8 | 1523.4 | 1619.1 | 1854.4 | 2320.0 | 3070.0 | 4024.4 | 5162.4 | 5852.9 | 5863.3 | 5532.2 |
| 67.5° | 1272.5 | 1264.7 | 1388.9 | 1580.3 | 1988.9 | 2733.8 | 3745.0 | 5025.3 | 5935.7 | 5982.3 | 5602.1 |
| 70° | 936.3 | 946.6 | 1119.9 | 1332.0 | 1681.1 | 2345.8 | 3354.5 | 4758.9 | 5801.2 | 5873.6 | 5441.7 |
| 72.5° | 703.5 | 724.2 | 892.3 | 1112.1 | 1404.4 | 1957.9 | 2927.8 | 4295.9 | 5426.2 | 5436.5 | 4952.9 |
| 75° | 571.6 | 576.8 | 726.8 | 923.3 | 1150.9 | 1569.9 | 2351.0 | 3587.3 | 4588.2 | 4707.2 | 4208.0 |
| 77.5° | 486.2 | 481.1 | 553.5 | 744.9 | 928.5 | 1254.4 | 1771.7 | 2728.6 | 3602.8 | 3657.1 | 3295.0 |
| 80° | 413.8 | 411.2 | 437.1 | 602.6 | 726.8 | 894.9 | 1213.0 | 1901.0 | 2570.8 | 2630.3 | 2340.7 |
| 82.5° | 217.3 | 232.8 | 227.6 | 372.4 | 411.2 | 470.7 | 581.9 | 863.8 | 1122.5 | 1138.0 | 1075.9 |
| 85° | 10.3 | 10.3 | 10.3 | 15.5 | 25.9 | 41.4 | 80.2 | 80.2 | 87.9 | 168.1 | 191.4 |
| 87.5° | 2.6 | 2.6 | 5.2 | 5.2 | 5.2 | 7.8 | 7.8 | 10.3 | 10.3 | 10.3 | 10.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P867551

CATALOG NUMBER: MEM2-HTN-SA-100-730-U-T2U

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 | 2570.8 |
| 2.5° | 2576.0 | 2565.7 | 2550.2 | 2552.7 | 2550.2 | 2550.2 | 2537.2 | 2526.9 | 2524.3 | 2529.5 | 2539.8 |
| 5° | 2578.6 | 2563.1 | 2539.8 | 2532.0 | 2524.3 | 2519.1 | 2498.4 | 2482.9 | 2475.1 | 2480.3 | 2482.9 |
| 7.5° | 2578.6 | 2555.3 | 2529.5 | 2513.9 | 2493.3 | 2477.7 | 2454.5 | 2433.8 | 2423.4 | 2426.0 | 2431.2 |
| 10° | 2573.4 | 2547.6 | 2526.9 | 2495.8 | 2462.2 | 2444.1 | 2407.9 | 2382.0 | 2369.1 | 2371.7 | 2358.8 |
| 12.5° | 2573.4 | 2545.0 | 2503.6 | 2475.1 | 2428.6 | 2389.8 | 2361.3 | 2332.9 | 2322.6 | 2312.2 | 2307.0 |
| 15° | 2576.0 | 2539.8 | 2498.4 | 2438.9 | 2384.6 | 2343.2 | 2307.0 | 2288.9 | 2273.4 | 2268.2 | 2270.8 |
| 17.5° | 2576.0 | 2539.8 | 2477.7 | 2407.9 | 2345.8 | 2294.1 | 2263.1 | 2242.4 | 2237.2 | 2232.0 | 2232.0 |
| 20° | 2588.9 | 2542.4 | 2459.6 | 2376.9 | 2299.3 | 2245.0 | 2216.5 | 2203.6 | 2203.6 | 2195.8 | 2195.8 |
| 22.5° | 2609.6 | 2547.6 | 2449.3 | 2351.0 | 2260.5 | 2201.0 | 2170.0 | 2154.4 | 2162.2 | 2157.0 | 2154.4 |
| 25° | 2632.9 | 2565.7 | 2436.4 | 2314.8 | 2208.8 | 2146.7 | 2115.6 | 2105.3 | 2102.7 | 2089.8 | 2107.9 |
| 27.5° | 2651.0 | 2578.6 | 2428.6 | 2278.6 | 2162.2 | 2089.8 | 2051.0 | 2032.9 | 2019.9 | 2025.1 | 2019.9 |
| 30° | 2700.2 | 2614.8 | 2431.2 | 2247.5 | 2110.5 | 2022.5 | 1976.0 | 1955.3 | 1950.1 | 1950.1 | 1950.1 |
| 32.5° | 2767.4 | 2661.4 | 2449.3 | 2234.6 | 2061.3 | 1957.9 | 1901.0 | 1880.3 | 1875.1 | 1864.8 | 1869.9 |
| 35° | 2852.8 | 2731.2 | 2477.7 | 2213.9 | 2022.5 | 1882.9 | 1820.8 | 1792.3 | 1784.6 | 1774.2 | 1774.2 |
| 37.5° | 2948.5 | 2801.0 | 2498.4 | 2203.6 | 1970.8 | 1805.3 | 1735.4 | 1699.2 | 1694.1 | 1683.7 | 1688.9 |
| 40° | 3070.0 | 2896.7 | 2532.0 | 2182.9 | 1911.3 | 1735.4 | 1642.3 | 1582.9 | 1595.8 | 1601.0 | 1611.3 |
| 42.5° | 3207.1 | 3018.3 | 2583.8 | 2162.2 | 1864.8 | 1663.0 | 1526.0 | 1466.5 | 1482.0 | 1476.8 | 1487.2 |
| 45° | 3393.3 | 3160.5 | 2648.4 | 2154.4 | 1807.9 | 1575.1 | 1407.0 | 1339.7 | 1334.6 | 1326.8 | 1332.0 |
| 47.5° | 3587.3 | 3331.2 | 2710.5 | 2138.9 | 1745.8 | 1466.5 | 1272.5 | 1187.1 | 1166.4 | 1156.1 | 1145.8 |
| 50° | 3789.0 | 3501.9 | 2782.9 | 2128.6 | 1663.0 | 1344.9 | 1138.0 | 1039.7 | 1000.9 | 988.0 | 975.1 |
| 52.5° | 4016.6 | 3685.6 | 2845.0 | 2102.7 | 1572.5 | 1218.2 | 1016.4 | 905.2 | 861.3 | 835.4 | 838.0 |
| 55° | 4257.1 | 3853.7 | 2901.9 | 2071.7 | 1469.1 | 1099.2 | 894.9 | 801.8 | 757.8 | 750.0 | 750.0 |
| 57.5° | 4479.6 | 4027.0 | 2943.3 | 2017.4 | 1365.6 | 982.8 | 794.0 | 713.8 | 693.1 | 703.5 | 703.5 |
| 60° | 4707.2 | 4166.6 | 2964.0 | 1957.9 | 1259.6 | 884.5 | 724.2 | 659.5 | 649.2 | 669.9 | 672.5 |
| 62.5° | 4890.8 | 4277.8 | 2958.8 | 1875.1 | 1143.2 | 799.2 | 656.9 | 605.2 | 610.4 | 646.6 | 654.3 |
| 65° | 5022.7 | 4332.2 | 2894.1 | 1751.0 | 1032.0 | 724.2 | 597.4 | 548.3 | 548.3 | 574.2 | 581.9 |
| 67.5° | 5012.4 | 4262.3 | 2764.8 | 1577.7 | 913.0 | 649.2 | 543.1 | 504.3 | 504.3 | 522.4 | 519.9 |
| 70° | 4800.3 | 4021.8 | 2519.1 | 1368.2 | 796.6 | 584.5 | 496.6 | 468.1 | 465.5 | 473.3 | 470.7 |
| 72.5° | 4290.8 | 3533.0 | 2136.3 | 1130.2 | 688.0 | 519.9 | 450.0 | 424.2 | 419.0 | 408.6 | 400.9 |
| 75° | 3540.7 | 2901.9 | 1668.2 | 900.1 | 581.9 | 457.8 | 406.1 | 382.8 | 362.1 | 375.0 | 367.3 |
| 77.5° | 2746.7 | 2226.9 | 1241.5 | 698.3 | 473.3 | 398.3 | 362.1 | 336.2 | 331.1 | 377.6 | 362.1 |
| 80° | 2004.4 | 1538.9 | 876.8 | 499.2 | 367.3 | 323.3 | 302.6 | 281.9 | 356.9 | 478.5 | 475.9 |
| 82.5° | 889.7 | 742.3 | 400.9 | 237.9 | 170.7 | 142.2 | 119.0 | 134.5 | 225.0 | 219.8 | 227.6 |
| 85° | 80.2 | 82.8 | 44.0 | 28.4 | 18.1 | 15.5 | 10.3 | 10.3 | 7.8 | 7.8 | 7.8 |
| 87.5° | 10.3 | 10.3 | 7.8 | 7.8 | 5.2 | 5.2 | 5.2 | 5.2 | 2.6 | 2.6 | 2.6 |
| 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: SP1-2407-157-4

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-30-730-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-30-730-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-30-730-U-5WQ-2**
 Description: Epic Modern Light Square 30W 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

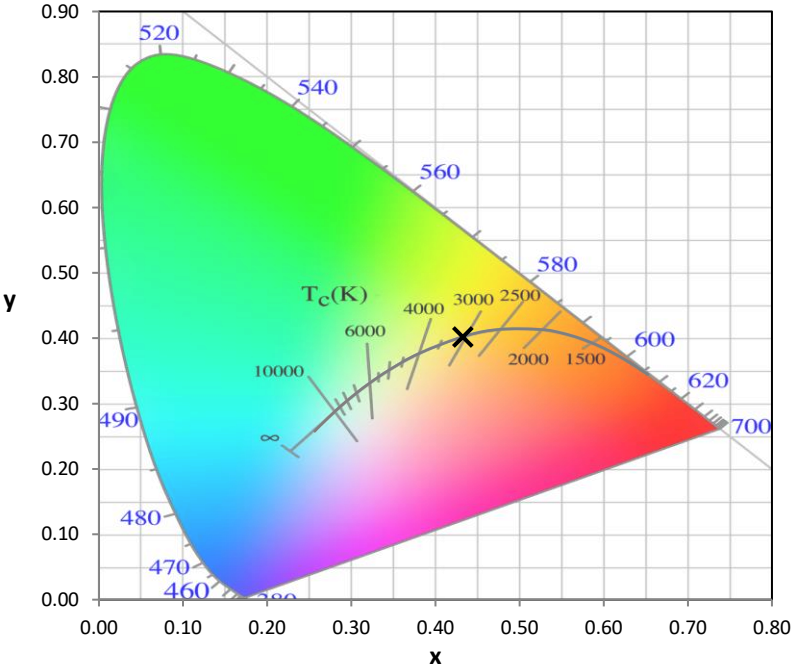
Stabilization Time: 21M
 Operation Time: 1H 21M
 Sphere Temperature (°C): 24.2

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

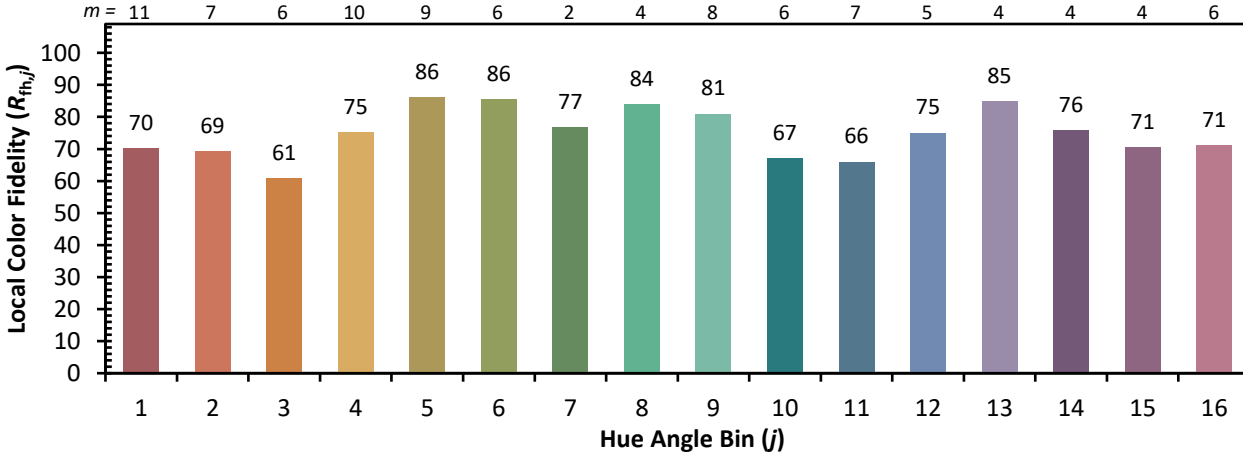


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| 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)