

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: P867437

Luminaire Tested: **MEM2-HTN-SA-70-727-U-T1**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867437
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-70-727-U-T1
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 70W 70CRI 2700K
FIXTURE w/ TYPE 1 DISTRIBUTION OPTIC
Light Source: (20) 2700K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

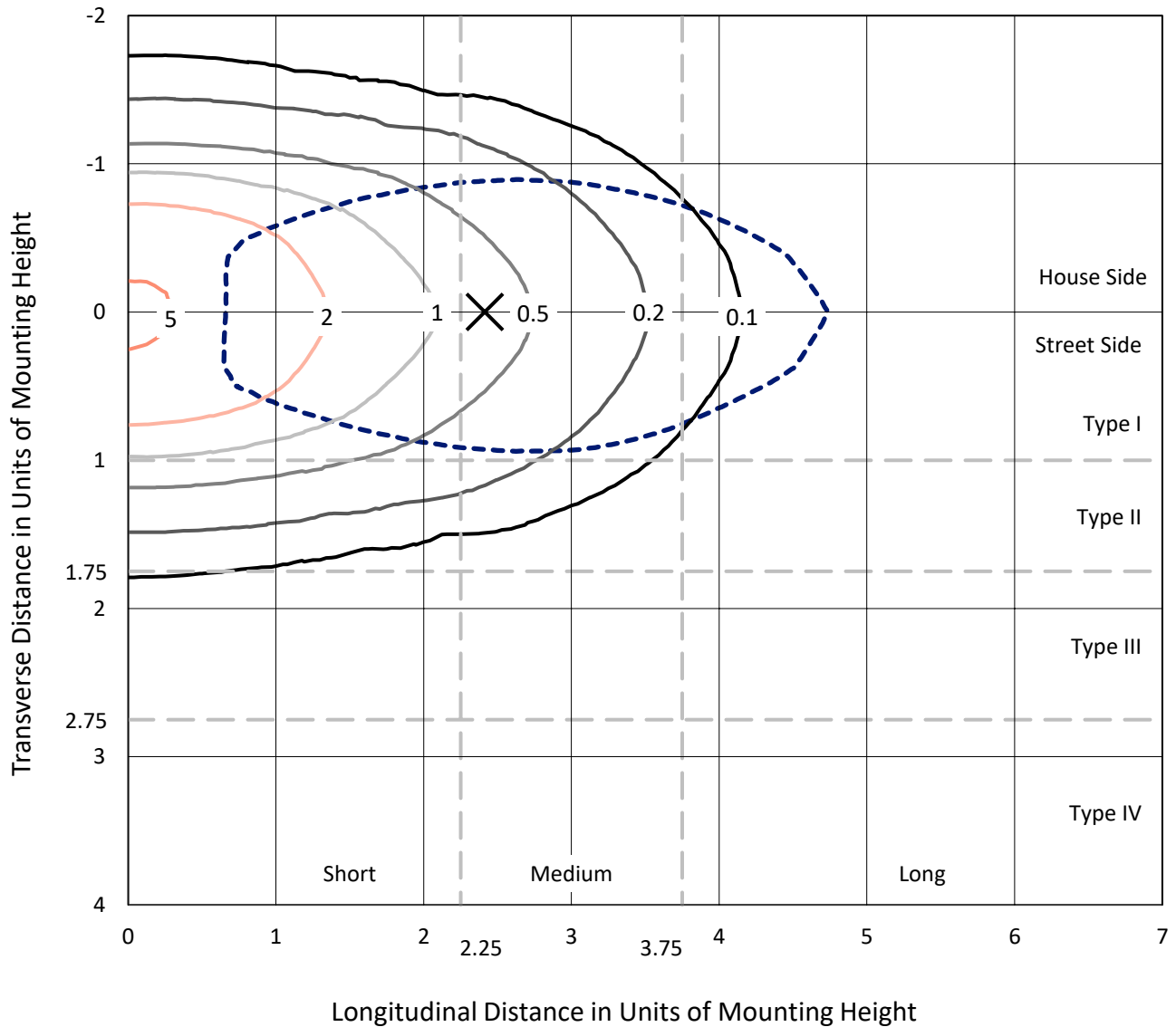
Lumens per Lamp: N/A
Luminaire Lumens: 8953.9 lumens
Efficiency: N/A
Efficacy: 146.8 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type I - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 61
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.89%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P867437
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Iso-Footcandle Lines of Horizontal Illumination

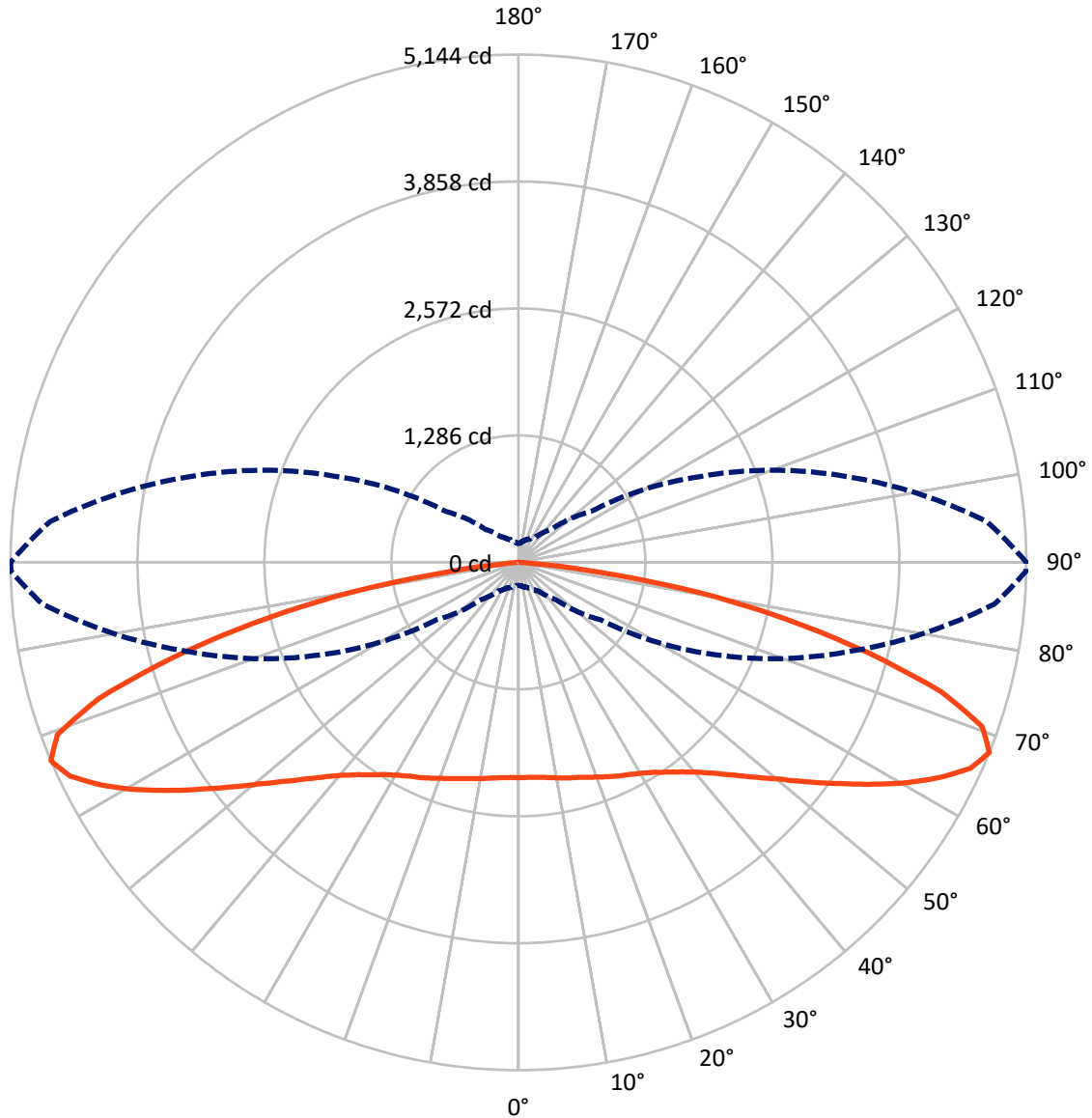
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.5 fc
 Type I - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 4397.4 | 0.0 | 4397.4 |
| | % Fixture | 49.1 | 0.0 | 49.1 |
| Street Side | Lumens | 4556.5 | 0.0 | 4556.5 |
| | % Fixture | 50.9 | 0.0 | 50.9 |
| Total | Lumens | 8953.9 | 0.0 | 8953.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 209.1 | 2.3 |
| 10°-20° | 628.3 | 7.0 |
| 20°-30° | 1039.8 | 11.6 |
| 30°-40° | 1378.8 | 15.4 |
| 40°-50° | 1554.6 | 17.4 |
| 50°-60° | 1593.7 | 17.8 |
| 60°-70° | 1505.2 | 16.8 |
| 70°-80° | 923.6 | 10.3 |
| 80°-90° | 120.8 | 1.3 |
| 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° | 8953.9 | 100.0 |
| 0°-180° | 8953.9 | 100.0 |

Coefficient of Utilization



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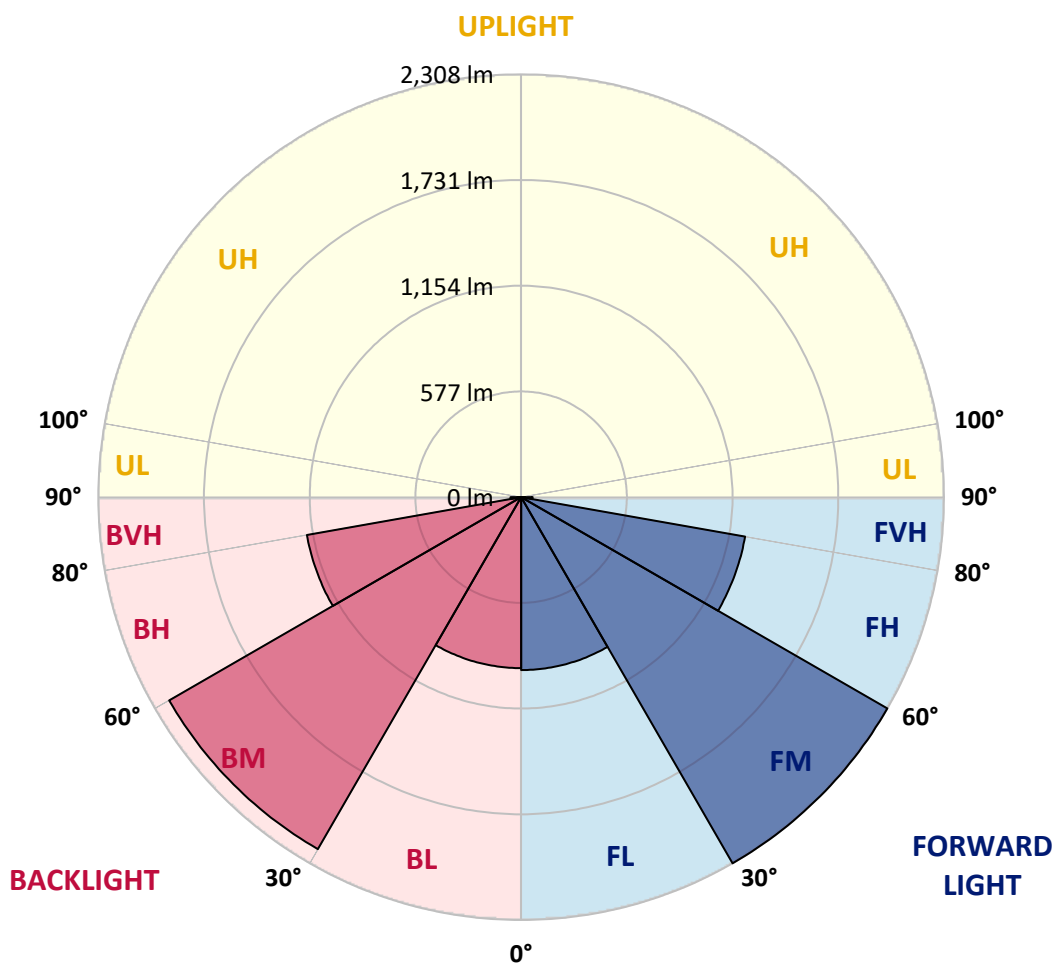
CATALOG NUMBER: MEM2-HTN-SA-70-727-U-T1

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 944.0 | 10.5 | | | |
| FM (30°-60°) | 2308.2 | 25.8 | | | |
| FH (60°-80°) | 1241.3 | 13.9 | | | G1/1800 |
| FVH (80°-90°) | 62.9 | 0.7 | | | G1/100 |
| BL (0°-30°) | 933.2 | 10.4 | B2/1000 | | |
| BM (30°-60°) | 2218.8 | 24.8 | B2/2500 | | |
| BH (60°-80°) | 1187.5 | 13.3 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 57.9 | 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 I Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 89° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 |
| 2.5° | 2190.2 | 2190.2 | 2185.0 | 2176.4 | 2174.7 | 2176.4 | 2186.8 | 2181.6 | 2181.6 | 2183.3 | 2181.6 |
| 5° | 2190.2 | 2190.2 | 2186.8 | 2178.2 | 2178.2 | 2178.2 | 2190.2 | 2185.0 | 2186.8 | 2188.5 | 2188.5 |
| 7.5° | 2193.6 | 2193.6 | 2190.2 | 2183.3 | 2183.3 | 2183.3 | 2200.5 | 2197.1 | 2197.1 | 2202.2 | 2198.8 |
| 10° | 2202.2 | 2198.8 | 2195.3 | 2197.1 | 2191.9 | 2200.5 | 2209.1 | 2210.8 | 2217.7 | 2221.1 | 2219.4 |
| 12.5° | 2202.2 | 2198.8 | 2190.2 | 2200.5 | 2200.5 | 2212.5 | 2224.6 | 2231.5 | 2240.0 | 2240.0 | 2240.0 |
| 15° | 2191.9 | 2188.5 | 2181.6 | 2198.8 | 2205.7 | 2221.1 | 2238.3 | 2248.6 | 2264.1 | 2264.1 | 2262.4 |
| 17.5° | 2179.9 | 2174.7 | 2171.3 | 2197.1 | 2212.5 | 2233.2 | 2259.0 | 2272.7 | 2289.9 | 2291.6 | 2288.2 |
| 20° | 2157.5 | 2155.8 | 2157.5 | 2191.9 | 2219.4 | 2248.6 | 2279.6 | 2298.5 | 2320.8 | 2327.7 | 2322.6 |
| 22.5° | 2133.5 | 2133.5 | 2140.3 | 2186.8 | 2229.7 | 2269.3 | 2310.5 | 2334.6 | 2356.9 | 2363.8 | 2356.9 |
| 25° | 2100.8 | 2100.8 | 2114.5 | 2169.6 | 2233.2 | 2291.6 | 2339.8 | 2372.4 | 2393.1 | 2399.9 | 2396.5 |
| 27.5° | 2050.9 | 2050.9 | 2066.4 | 2135.2 | 2222.9 | 2308.8 | 2370.7 | 2408.5 | 2430.9 | 2437.7 | 2434.3 |
| 30° | 1980.5 | 1977.0 | 1997.6 | 2083.6 | 2203.9 | 2327.7 | 2406.8 | 2446.3 | 2475.6 | 2480.7 | 2475.6 |
| 32.5° | 1868.7 | 1873.9 | 1904.8 | 2013.1 | 2173.0 | 2339.8 | 2449.8 | 2496.2 | 2528.9 | 2539.2 | 2535.7 |
| 35° | 1732.9 | 1741.5 | 1784.5 | 1923.7 | 2114.5 | 2338.0 | 2494.5 | 2551.2 | 2594.2 | 2607.9 | 2606.2 |
| 37.5° | 1571.3 | 1583.3 | 1636.6 | 1799.9 | 2026.9 | 2312.3 | 2535.7 | 2613.1 | 2669.8 | 2687.0 | 2690.5 |
| 40° | 1394.2 | 1406.3 | 1475.0 | 1655.5 | 1908.3 | 2252.1 | 2559.8 | 2683.6 | 2759.2 | 2793.6 | 2798.8 |
| 42.5° | 1206.8 | 1227.5 | 1310.0 | 1485.3 | 1765.6 | 2155.8 | 2559.8 | 2752.4 | 2845.2 | 2908.8 | 2914.0 |
| 45° | 1026.3 | 1043.5 | 1143.2 | 1315.1 | 1612.6 | 2032.0 | 2530.6 | 2821.1 | 2962.1 | 3072.1 | 3068.7 |
| 47.5° | 869.9 | 875.0 | 966.2 | 1139.8 | 1442.4 | 1891.1 | 2470.4 | 2883.0 | 3085.9 | 3232.0 | 3262.9 |
| 50° | 708.3 | 720.3 | 797.7 | 969.6 | 1268.7 | 1736.3 | 2369.0 | 2922.5 | 3213.1 | 3434.9 | 3474.4 |
| 52.5° | 594.8 | 596.5 | 655.0 | 813.2 | 1088.2 | 1548.9 | 2246.9 | 2932.9 | 3335.1 | 3654.9 | 3703.0 |
| 55° | 484.8 | 493.4 | 543.2 | 661.9 | 914.6 | 1365.0 | 2088.8 | 2917.4 | 3446.9 | 3868.1 | 3957.5 |
| 57.5° | 416.0 | 417.8 | 453.9 | 548.4 | 771.9 | 1169.0 | 1913.4 | 2865.8 | 3539.7 | 4103.6 | 4217.1 |
| 60° | 357.6 | 357.6 | 385.1 | 457.3 | 624.0 | 978.2 | 1707.1 | 2774.7 | 3591.3 | 4356.3 | 4521.4 |
| 62.5° | 311.2 | 312.9 | 337.0 | 390.2 | 519.2 | 808.0 | 1480.2 | 2632.0 | 3610.2 | 4600.4 | 4789.5 |
| 65° | 281.9 | 283.7 | 297.4 | 333.5 | 428.1 | 656.7 | 1248.1 | 2458.4 | 3584.4 | 4782.7 | 5028.5 |
| 67.5° | 233.8 | 235.5 | 259.6 | 287.1 | 355.9 | 527.8 | 1014.3 | 2217.7 | 3479.5 | 4839.4 | 5140.2 |
| 70° | 178.8 | 183.9 | 216.6 | 245.8 | 295.7 | 421.2 | 778.8 | 1899.7 | 3228.6 | 4646.8 | 4956.3 |
| 72.5° | 149.6 | 151.3 | 175.4 | 208.0 | 247.6 | 330.1 | 591.4 | 1495.7 | 2846.9 | 4150.0 | 4493.8 |
| 75° | 130.7 | 132.4 | 146.1 | 175.4 | 206.3 | 264.7 | 410.9 | 1033.2 | 2271.0 | 3355.8 | 3670.4 |
| 77.5° | 118.6 | 120.3 | 123.8 | 147.8 | 173.6 | 204.6 | 290.5 | 613.7 | 1602.2 | 2565.0 | 2730.0 |
| 80° | 113.5 | 113.5 | 104.9 | 122.1 | 142.7 | 159.9 | 194.3 | 352.4 | 1028.0 | 1729.5 | 1861.8 |
| 82.5° | 80.8 | 79.1 | 72.2 | 75.6 | 87.7 | 87.7 | 99.7 | 146.1 | 393.7 | 730.6 | 792.5 |
| 85° | 5.2 | 5.2 | 8.6 | 10.3 | 15.5 | 20.6 | 25.8 | 34.4 | 99.7 | 135.8 | 141.0 |
| 87.5° | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 3.4 | 3.4 | 3.4 | 5.2 | 6.9 | 6.9 |
| 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: P867437
 CATALOG NUMBER: MEM2-HTN-SA-70-727-U-T1

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 | 2181.6 |
| 2.5° | 2179.9 | 2181.6 | 2181.6 | 2185.0 | 2188.5 | 2186.8 | 2185.0 | 2188.5 | 2183.3 | 2173.0 | 2171.3 |
| 5° | 2186.8 | 2186.8 | 2185.0 | 2188.5 | 2191.9 | 2188.5 | 2185.0 | 2185.0 | 2181.6 | 2171.3 | 2169.6 |
| 7.5° | 2200.5 | 2198.8 | 2198.8 | 2198.8 | 2198.8 | 2193.6 | 2188.5 | 2185.0 | 2179.9 | 2169.6 | 2164.4 |
| 10° | 2219.4 | 2217.7 | 2216.0 | 2214.3 | 2205.7 | 2200.5 | 2191.9 | 2186.8 | 2179.9 | 2167.8 | 2164.4 |
| 12.5° | 2240.0 | 2236.6 | 2233.2 | 2234.9 | 2217.7 | 2202.2 | 2193.6 | 2181.6 | 2176.4 | 2148.9 | 2143.8 |
| 15° | 2260.7 | 2255.5 | 2253.8 | 2246.9 | 2229.7 | 2207.4 | 2190.2 | 2173.0 | 2155.8 | 2130.0 | 2121.4 |
| 17.5° | 2288.2 | 2284.7 | 2274.4 | 2267.6 | 2243.5 | 2212.5 | 2186.8 | 2162.7 | 2140.3 | 2109.4 | 2104.2 |
| 20° | 2320.8 | 2317.4 | 2307.1 | 2293.3 | 2262.4 | 2224.6 | 2188.5 | 2150.7 | 2123.1 | 2087.0 | 2078.4 |
| 22.5° | 2356.9 | 2351.8 | 2343.2 | 2327.7 | 2288.2 | 2243.5 | 2193.6 | 2143.8 | 2102.5 | 2061.3 | 2056.1 |
| 25° | 2394.8 | 2391.3 | 2382.7 | 2360.4 | 2317.4 | 2262.4 | 2193.6 | 2119.7 | 2068.1 | 2032.0 | 2016.6 |
| 27.5° | 2430.9 | 2429.2 | 2418.8 | 2393.1 | 2348.4 | 2276.1 | 2178.2 | 2080.2 | 2011.4 | 1963.3 | 1952.9 |
| 30° | 2477.3 | 2473.8 | 2461.8 | 2432.6 | 2382.7 | 2284.7 | 2147.2 | 2013.1 | 1927.2 | 1873.9 | 1858.4 |
| 32.5° | 2534.0 | 2530.6 | 2513.4 | 2477.3 | 2424.0 | 2286.5 | 2102.5 | 1927.2 | 1813.7 | 1757.0 | 1738.1 |
| 35° | 2609.7 | 2602.8 | 2580.4 | 2537.5 | 2463.5 | 2269.3 | 2023.4 | 1817.1 | 1677.9 | 1604.0 | 1578.2 |
| 37.5° | 2692.2 | 2683.6 | 2654.4 | 2601.1 | 2491.0 | 2222.9 | 1911.7 | 1669.3 | 1511.1 | 1423.5 | 1404.5 |
| 40° | 2793.6 | 2781.6 | 2736.9 | 2663.0 | 2501.4 | 2142.1 | 1786.2 | 1518.0 | 1349.5 | 1253.3 | 1230.9 |
| 42.5° | 2920.8 | 2900.2 | 2828.0 | 2731.7 | 2480.7 | 2032.0 | 1636.6 | 1361.6 | 1169.0 | 1079.6 | 1074.5 |
| 45° | 3073.8 | 3041.2 | 2932.9 | 2798.8 | 2436.0 | 1894.5 | 1478.5 | 1186.2 | 1002.3 | 914.6 | 892.2 |
| 47.5° | 3254.3 | 3214.8 | 3054.9 | 2850.3 | 2348.4 | 1753.5 | 1308.3 | 1016.0 | 847.5 | 758.1 | 741.0 |
| 50° | 3453.8 | 3415.9 | 3183.9 | 2879.6 | 2253.8 | 1588.5 | 1141.5 | 864.7 | 696.3 | 622.3 | 622.3 |
| 52.5° | 3696.2 | 3610.2 | 3307.6 | 2883.0 | 2109.4 | 1406.3 | 981.6 | 716.9 | 584.5 | 519.2 | 505.4 |
| 55° | 3954.0 | 3852.6 | 3419.4 | 2852.1 | 1959.8 | 1239.5 | 809.7 | 596.5 | 479.6 | 433.2 | 421.2 |
| 57.5° | 4241.1 | 4086.4 | 3500.2 | 2790.2 | 1770.7 | 1057.3 | 675.6 | 491.7 | 404.0 | 366.2 | 361.0 |
| 60° | 4529.9 | 4330.5 | 3548.3 | 2685.3 | 1569.6 | 888.8 | 562.2 | 410.9 | 347.3 | 319.8 | 314.6 |
| 62.5° | 4798.1 | 4529.9 | 3551.8 | 2532.3 | 1373.6 | 741.0 | 460.7 | 354.1 | 307.7 | 287.1 | 287.1 |
| 65° | 5030.2 | 4696.7 | 3493.3 | 2336.3 | 1124.3 | 594.8 | 379.9 | 299.1 | 268.2 | 245.8 | 240.7 |
| 67.5° | 5143.7 | 4760.3 | 3390.2 | 2068.1 | 900.8 | 471.0 | 319.8 | 259.6 | 230.4 | 196.0 | 192.5 |
| 70° | 4983.8 | 4576.4 | 3125.4 | 1724.3 | 696.3 | 374.8 | 266.5 | 221.8 | 192.5 | 163.3 | 159.9 |
| 72.5° | 4473.2 | 4086.4 | 2697.3 | 1335.8 | 524.3 | 302.6 | 221.8 | 189.1 | 158.2 | 142.7 | 139.3 |
| 75° | 3660.1 | 3398.8 | 2131.7 | 919.7 | 366.2 | 237.2 | 185.7 | 159.9 | 134.1 | 127.2 | 125.5 |
| 77.5° | 2778.1 | 2527.1 | 1557.5 | 575.9 | 251.0 | 185.7 | 158.2 | 135.8 | 116.9 | 122.1 | 118.6 |
| 80° | 1855.0 | 1739.8 | 1034.9 | 326.6 | 168.5 | 135.8 | 120.3 | 99.7 | 89.4 | 103.1 | 99.7 |
| 82.5° | 842.4 | 797.7 | 486.5 | 142.7 | 75.6 | 58.5 | 41.3 | 30.9 | 24.1 | 22.3 | 25.8 |
| 85° | 141.0 | 123.8 | 34.4 | 15.5 | 8.6 | 5.2 | 3.4 | 3.4 | 1.7 | 1.7 | 1.7 |
| 87.5° | 6.9 | 5.2 | 5.2 | 3.4 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 0.0 | 0.0 |
| 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: SP1-2407-157-3

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-727-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-727-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-3
 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-40-727-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 2747
 CIE u': 0.2606
 CIE v': 0.5257
 Duv: -0.0005
 CIE x: 0.4552
 CIE y: 0.4082
 CIE z: 0.1366
 Peak Wavelength (nm): 597
 Dominant Wavelength (nm): 584
 Purity: 59.16856
 Rf: 75.5
 Rg: 93.6

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 68.1 | R9: | -35.3 |
| R2: | 83.9 | R10: | 64.2 |
| R3: | 94.7 | R11: | 61.7 |
| R4: | 66.3 | R12: | 53.9 |
| R5: | 67.4 | R13: | 71.2 |
| R6: | 78.7 | R14: | 97.6 |
| R7: | 75.0 | R15: | 59.3 |
| R8: | 39.4 | | |



Test Conditions

Stabilization Time: 22M
 Operation Time: 1H 22M
 Sphere Temperature (°C): 24.2

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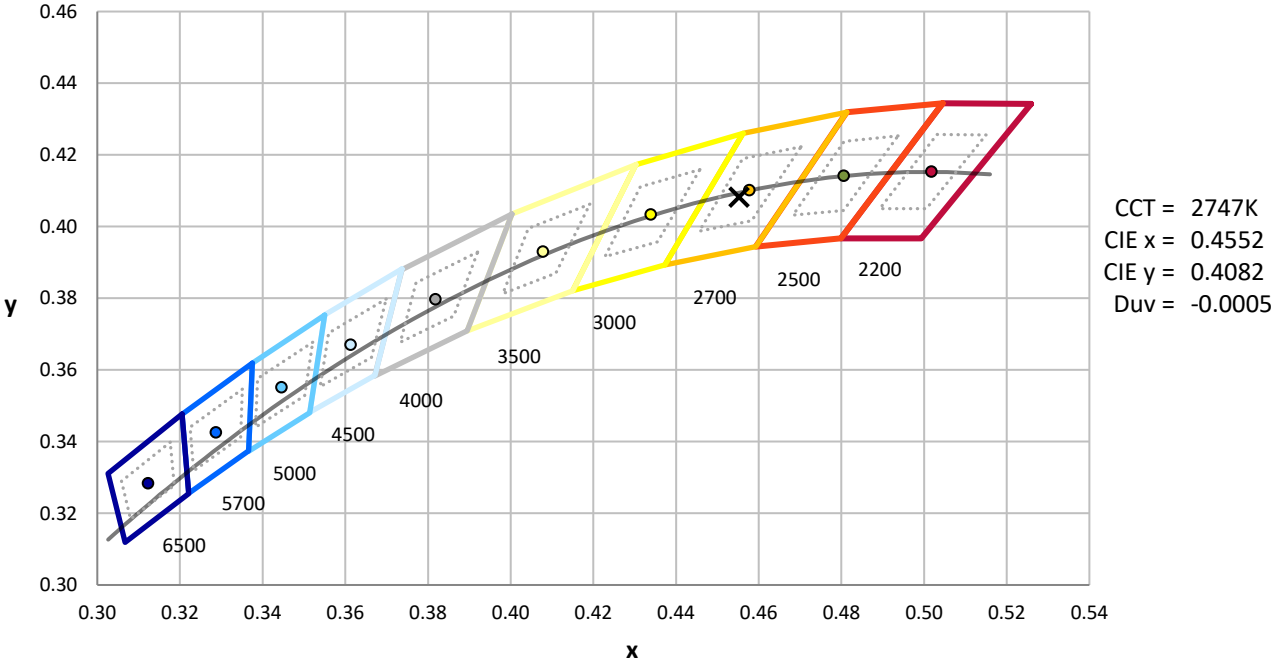
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 |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

REPORT NUMBER: SP1-2407-157-3

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-3

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 | 103 | NR | 620 | 846 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 130 | NR | 625 | 784 | NR | 755 | 17 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 171 | NR | 630 | 720 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 221 | NR | 635 | 652 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 587 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 313 | NR | 645 | 521 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 350 | NR | 650 | 461 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 381 | NR | 655 | 406 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 407 | NR | 660 | 353 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 435 | NR | 665 | 307 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 462 | NR | 670 | 264 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 496 | NR | 675 | 227 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 534 | NR | 680 | 196 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 582 | NR | 685 | 167 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 69 | NR | 560 | 638 | NR | 690 | 144 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 120 | NR | 565 | 700 | NR | 695 | 122 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 193 | NR | 570 | 767 | NR | 700 | 103 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 316 | NR | 575 | 836 | NR | 705 | 88 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 469 | NR | 580 | 898 | NR | 710 | 74 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 431 | NR | 585 | 947 | NR | 715 | 63 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 264 | NR | 590 | 982 | NR | 720 | 54 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 197 | NR | 595 | 997 | NR | 725 | 46 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 155 | NR | 600 | 997 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 108 | NR | 605 | 978 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 90 | NR | 610 | 947 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 92 | NR | 615 | 900 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-3

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.13

| 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 | 103 | NR | 620 | 846 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 130 | NR | 625 | 784 | NR | 755 | 17 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 171 | NR | 630 | 720 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 221 | NR | 635 | 652 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 587 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 313 | NR | 645 | 521 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 350 | NR | 650 | 461 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 381 | NR | 655 | 406 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 407 | NR | 660 | 353 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 435 | NR | 665 | 307 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 462 | NR | 670 | 264 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 496 | NR | 675 | 227 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 534 | NR | 680 | 196 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 582 | NR | 685 | 167 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 69 | NR | 560 | 638 | NR | 690 | 144 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 120 | NR | 565 | 700 | NR | 695 | 122 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 193 | NR | 570 | 767 | NR | 700 | 103 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 316 | NR | 575 | 836 | NR | 705 | 88 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 469 | NR | 580 | 898 | NR | 710 | 74 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 431 | NR | 585 | 947 | NR | 715 | 63 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 264 | NR | 590 | 982 | NR | 720 | 54 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 197 | NR | 595 | 997 | NR | 725 | 46 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 155 | NR | 600 | 997 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 108 | NR | 605 | 978 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 90 | NR | 610 | 947 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 92 | NR | 615 | 900 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.04

| 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 | 103 | NR | 620 | 846 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 130 | NR | 625 | 784 | NR | 755 | 17 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 171 | NR | 630 | 720 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 221 | NR | 635 | 652 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 587 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 313 | NR | 645 | 521 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 350 | NR | 650 | 461 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 381 | NR | 655 | 406 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 407 | NR | 660 | 353 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 435 | NR | 665 | 307 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 462 | NR | 670 | 264 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 496 | NR | 675 | 227 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 534 | NR | 680 | 196 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 582 | NR | 685 | 167 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 69 | NR | 560 | 638 | NR | 690 | 144 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 120 | NR | 565 | 700 | NR | 695 | 122 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 193 | NR | 570 | 767 | NR | 700 | 103 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 316 | NR | 575 | 836 | NR | 705 | 88 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 469 | NR | 580 | 898 | NR | 710 | 74 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 431 | NR | 585 | 947 | NR | 715 | 63 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 264 | NR | 590 | 982 | NR | 720 | 54 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 197 | NR | 595 | 997 | NR | 725 | 46 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 155 | NR | 600 | 997 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 108 | NR | 605 | 978 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 90 | NR | 610 | 947 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 92 | NR | 615 | 900 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 75.5$
 $R_g = 93.6$
 $CIE R_a = 71.7$
 $R_g = -35.3$



Color Vector Graphics



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

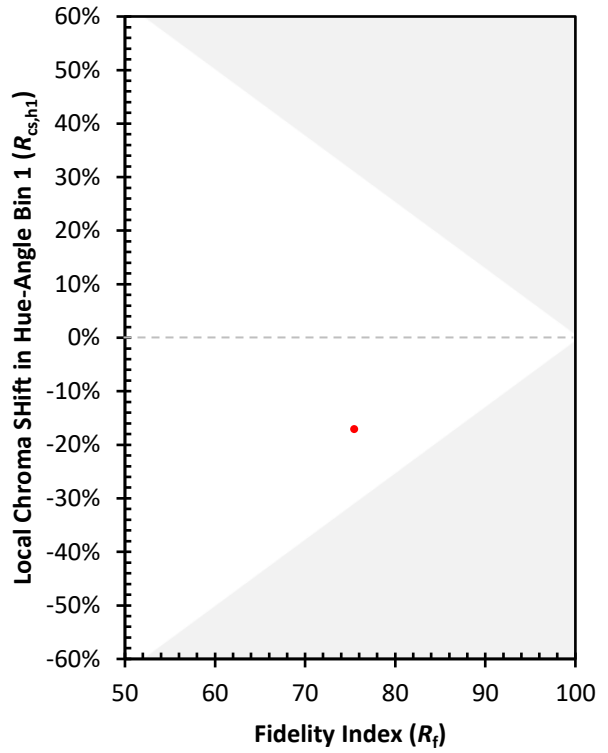
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 90 | CES52 = 85 | CES77 = 79 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 66 |
| CES04 = 71 | CES29 = 71 | CES54 = 86 | CES79 = 87 |
| CES05 = 50 | CES30 = 85 | CES55 = 84 | CES80 = 85 |
| CES06 = 52 | CES31 = 74 | CES56 = 75 | CES81 = 67 |
| CES07 = 42 | CES32 = 66 | CES57 = 75 | CES82 = 93 |
| CES08 = 41 | CES33 = 80 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 77 | CES35 = 89 | CES60 = 90 | CES85 = 72 |
| CES11 = 60 | CES36 = 93 | CES61 = 81 | CES86 = 59 |
| CES12 = 66 | CES37 = 88 | CES62 = 91 | CES87 = 77 |
| CES13 = 43 | CES38 = 93 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 97 | CES64 = 67 | CES89 = 65 |
| CES15 = 72 | CES40 = 93 | CES65 = 66 | CES90 = 80 |
| CES16 = 48 | CES41 = 93 | CES66 = 63 | CES91 = 80 |
| CES17 = 51 | CES42 = 89 | CES67 = 61 | CES92 = 55 |
| CES18 = 57 | CES43 = 78 | CES68 = 68 | CES93 = 72 |
| CES19 = 73 | CES44 = 99 | CES69 = 78 | CES94 = 48 |
| CES20 = 67 | CES45 = 85 | CES70 = 63 | CES95 = 66 |
| CES21 = 88 | CES46 = 81 | CES71 = 61 | CES96 = 76 |
| CES22 = 80 | CES47 = 86 | CES72 = 86 | CES97 = 81 |
| CES23 = 92 | CES48 = 74 | CES73 = 56 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 93 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 66 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)