

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: P867468

Luminaire Tested: **MEM2-HTN-SA-110-722-U-T2R**

Issue Date: 08/21/2024

Test Information

Test Method: LM-79-08
Report Number: P867468
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-110-722-U-T2R
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 110W 70CRI 2200K
FITXURE w/ TYPE II ROADWAY DISTRIBUTION OPTIC
Light Source: (30) 2200K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

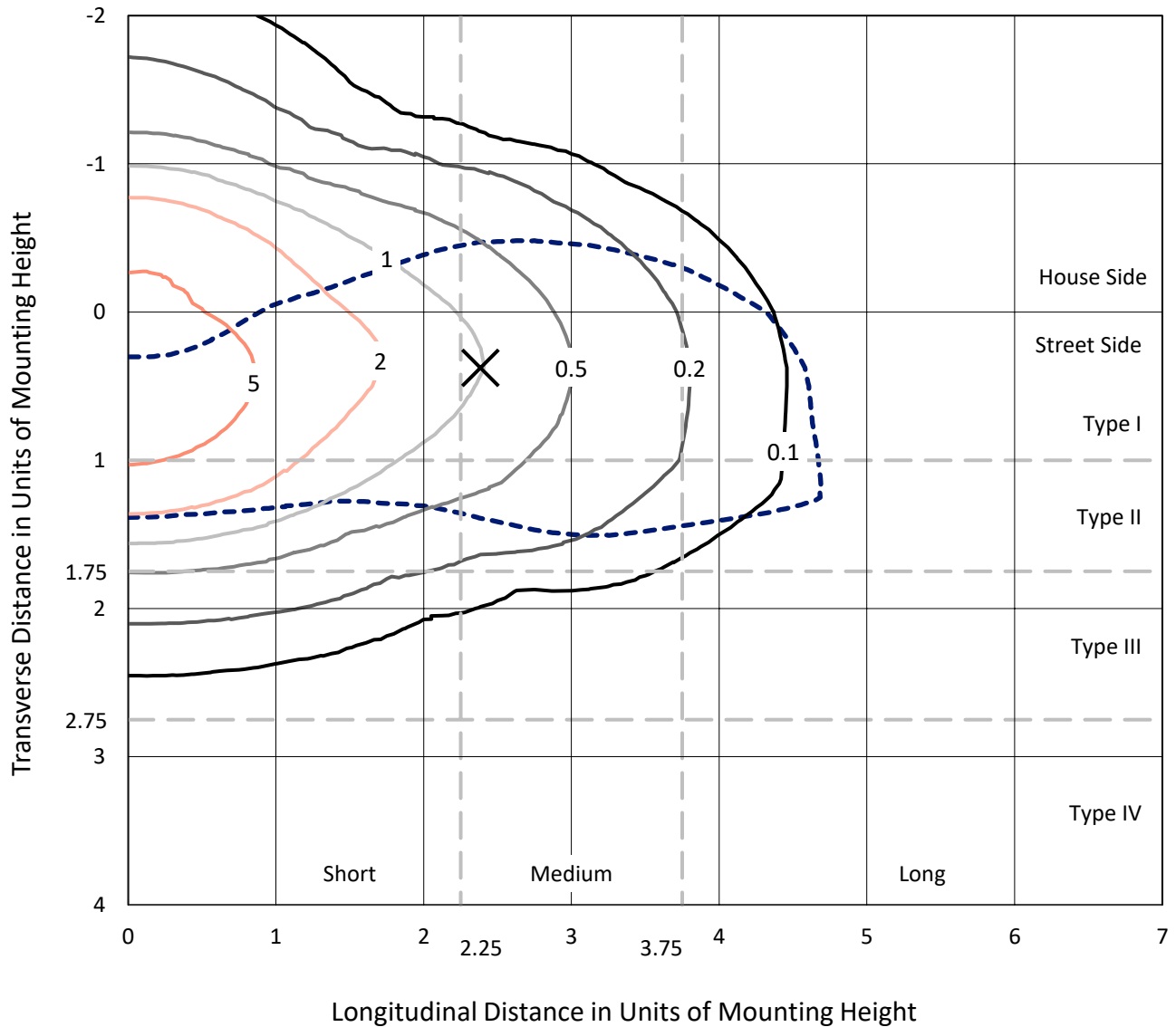
Lumens per Lamp: N/A
Luminaire Lumens: 14600.7 lumens
Efficiency: N/A
Efficacy: 129.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B3 - U0 - G3

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

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Iso-Footcandle Lines of Horizontal Illumination

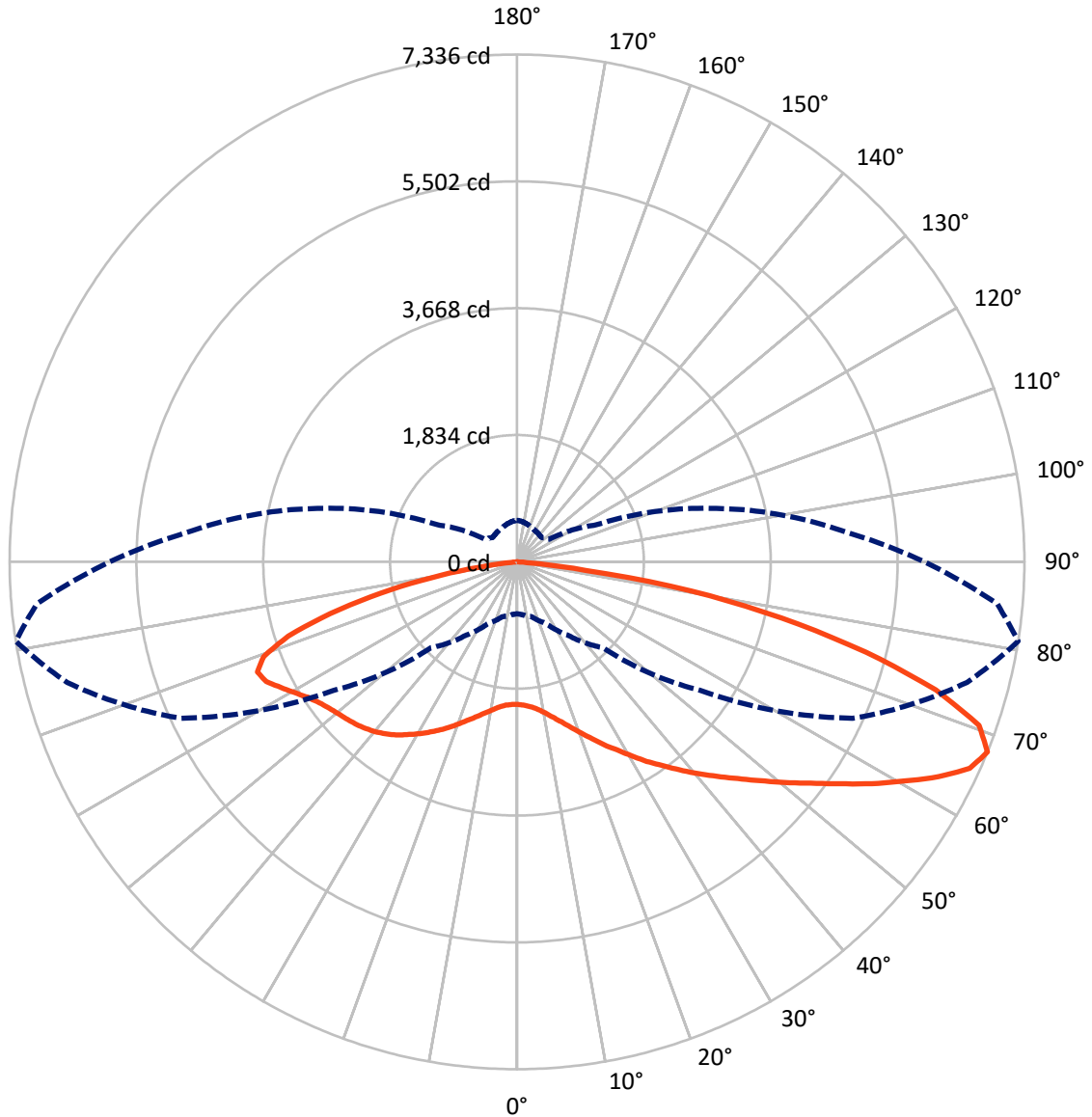
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.3 fc
 Type II - Medium - N/A

REPORT NUMBER: P867468
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Luminous Intensity Polar Plot



— Vertical Plane Through 81-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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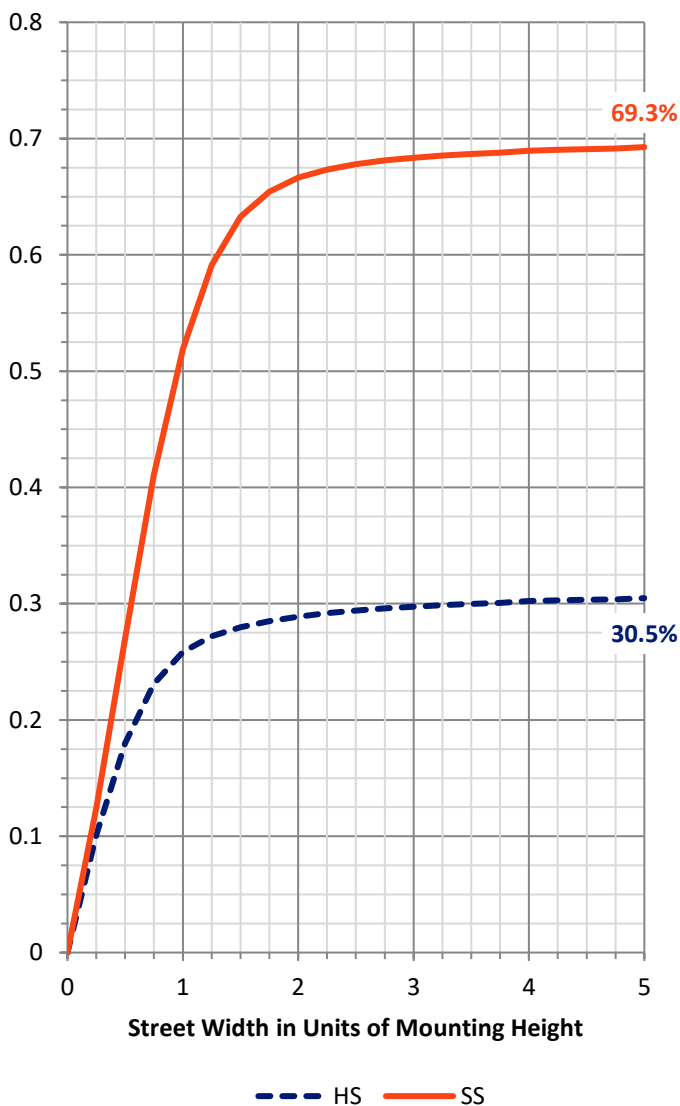
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4474.0 | 0.0 | 4474.0 |
| | % Fixture | 30.6 | 0.0 | 30.6 |
| Street Side | Lumens | 10126.7 | 0.0 | 10126.7 |
| | % Fixture | 69.4 | 0.0 | 69.4 |
| Total | Lumens | 14600.7 | 0.0 | 14600.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 210.2 | 1.4 |
| 10°-20° | 746.2 | 5.1 |
| 20°-30° | 1486.2 | 10.2 |
| 30°-40° | 2334.8 | 16.0 |
| 40°-50° | 2895.6 | 19.8 |
| 50°-60° | 2830.6 | 19.4 |
| 60°-70° | 2380.4 | 16.3 |
| 70°-80° | 1512.5 | 10.4 |
| 80°-90° | 204.2 | 1.4 |
| 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° | 14600.7 | 100.0 |
| 0°-180° | 14600.7 | 100.0 |

Coefficient of Utilization



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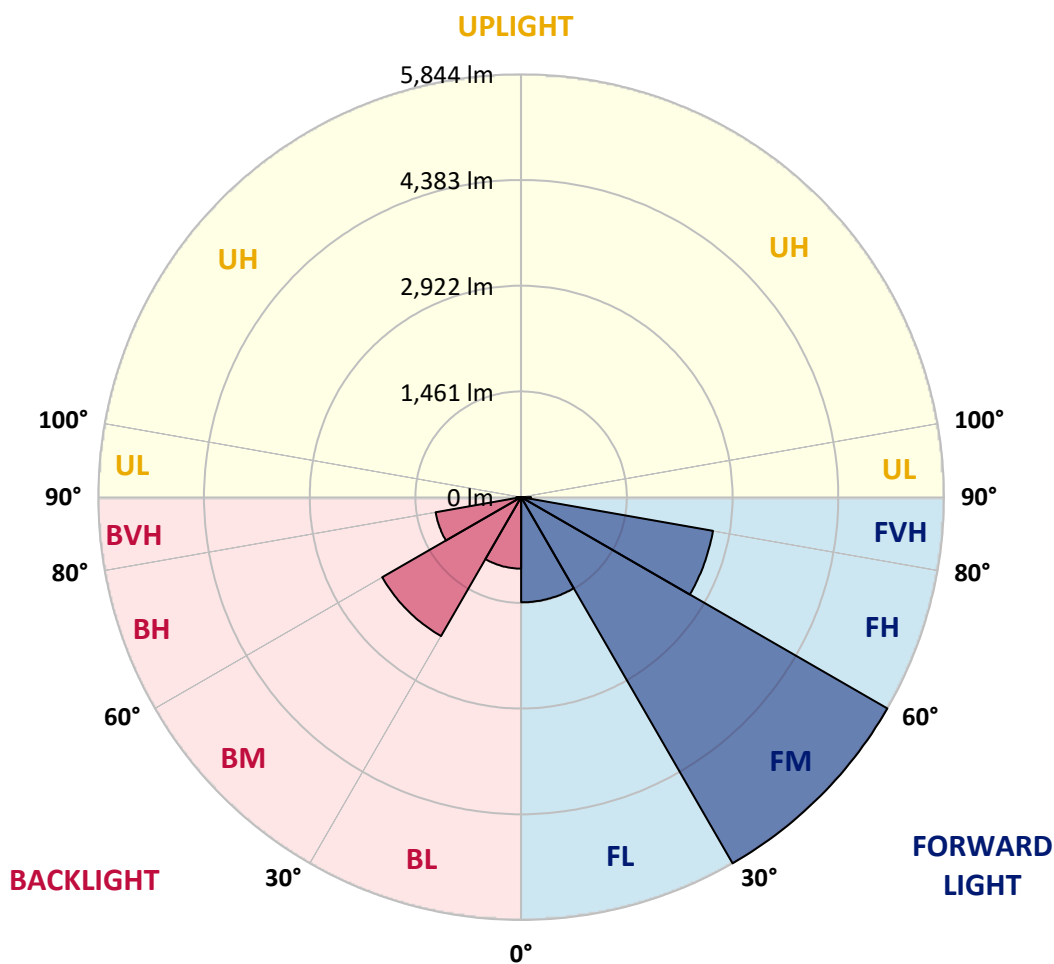
CATALOG NUMBER: MEM2-HTN-SA-110-722-U-T2R

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1454.3 | 10.0 | | | |
| FM | (30°-60°) | 5843.6 | 40.0 | | | |
| FH | (60°-80°) | 2691.9 | 18.4 | | | G2/5000 |
| FVH | (80°-90°) | 136.8 | 0.9 | | | G2/225 |
| BL | (0°-30°) | 988.2 | 6.8 | B2/1000 | | |
| BM | (30°-60°) | 2217.4 | 15.2 | B2/2500 | | |
| BH | (60°-80°) | 1201.0 | 8.2 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 67.4 | 0.5 | | | 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 II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 81° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 |
| 2.5° | 2133.7 | 2130.8 | 2130.8 | 2107.7 | 2107.7 | 2101.9 | 2104.8 | 2087.4 | 2078.7 | 2075.8 | 2072.9 |
| 5° | 2287.2 | 2287.2 | 2269.8 | 2255.3 | 2226.4 | 2200.3 | 2177.2 | 2142.4 | 2116.4 | 2104.8 | 2096.1 |
| 7.5° | 2518.8 | 2501.4 | 2495.6 | 2452.2 | 2391.4 | 2339.3 | 2293.0 | 2217.7 | 2168.5 | 2151.1 | 2139.5 |
| 10° | 2802.5 | 2779.4 | 2735.9 | 2686.7 | 2608.5 | 2530.4 | 2437.7 | 2336.4 | 2255.3 | 2220.6 | 2206.1 |
| 12.5° | 3094.9 | 3063.1 | 3002.3 | 2956.0 | 2854.6 | 2735.9 | 2605.7 | 2466.7 | 2353.8 | 2304.6 | 2278.5 |
| 15° | 3416.3 | 3398.9 | 3326.6 | 3233.9 | 3115.2 | 2947.3 | 2785.2 | 2614.3 | 2469.6 | 2400.1 | 2356.7 |
| 17.5° | 3763.7 | 3737.7 | 3659.5 | 3546.6 | 3378.7 | 3178.9 | 2990.7 | 2770.7 | 2602.8 | 2513.0 | 2463.8 |
| 20° | 4105.4 | 4099.6 | 3983.8 | 3876.6 | 3679.8 | 3430.8 | 3187.6 | 2956.0 | 2744.6 | 2640.4 | 2576.7 |
| 22.5° | 4487.5 | 4449.9 | 4348.5 | 4198.0 | 3963.5 | 3734.8 | 3448.1 | 3147.1 | 2898.1 | 2776.5 | 2704.1 |
| 25° | 4884.2 | 4881.3 | 4756.8 | 4571.5 | 4296.4 | 4006.9 | 3697.1 | 3364.2 | 3080.5 | 2932.8 | 2837.3 |
| 27.5° | 5376.3 | 5338.7 | 5179.5 | 4968.1 | 4649.6 | 4316.7 | 3957.7 | 3590.0 | 3254.2 | 3077.6 | 2961.8 |
| 30° | 5807.7 | 5796.1 | 5616.6 | 5379.2 | 5023.1 | 4626.5 | 4238.5 | 3844.8 | 3459.7 | 3251.3 | 3123.9 |
| 32.5° | 6158.0 | 6143.6 | 5990.1 | 5752.7 | 5370.5 | 4959.4 | 4513.6 | 4085.1 | 3665.3 | 3439.5 | 3271.5 |
| 35° | 6450.4 | 6427.3 | 6268.0 | 6030.6 | 5700.6 | 5283.7 | 4808.9 | 4337.0 | 3891.1 | 3616.1 | 3456.8 |
| 37.5° | 6566.2 | 6546.0 | 6415.7 | 6218.8 | 5914.8 | 5532.7 | 5075.2 | 4614.9 | 4116.9 | 3815.8 | 3636.3 |
| 40° | 6522.8 | 6511.2 | 6418.6 | 6282.5 | 6050.9 | 5732.4 | 5330.0 | 4904.4 | 4371.7 | 4027.2 | 3812.9 |
| 42.5° | 6317.3 | 6317.3 | 6259.4 | 6189.9 | 6074.1 | 5845.4 | 5555.8 | 5182.4 | 4617.8 | 4238.5 | 3980.9 |
| 45° | 6027.7 | 6016.2 | 5995.9 | 5969.8 | 5952.5 | 5865.6 | 5703.5 | 5422.7 | 4889.9 | 4470.1 | 4183.5 |
| 47.5° | 5642.7 | 5651.4 | 5636.9 | 5648.5 | 5720.9 | 5775.9 | 5767.2 | 5645.6 | 5167.9 | 4724.9 | 4383.3 |
| 50° | 5037.6 | 5078.1 | 5124.5 | 5260.5 | 5408.2 | 5561.6 | 5703.5 | 5804.8 | 5495.0 | 5014.4 | 4614.9 |
| 52.5° | 4287.7 | 4305.1 | 4429.6 | 4751.0 | 5066.5 | 5269.2 | 5538.5 | 5877.2 | 5784.6 | 5315.5 | 4887.0 |
| 55° | 3364.2 | 3396.0 | 3584.2 | 4038.8 | 4600.4 | 4988.4 | 5304.0 | 5845.4 | 6079.9 | 5660.1 | 5205.5 |
| 57.5° | 2411.7 | 2431.9 | 2733.0 | 3202.1 | 3934.5 | 4586.0 | 5037.6 | 5718.0 | 6317.3 | 6050.9 | 5532.7 |
| 60° | 1713.9 | 1751.6 | 1945.6 | 2403.0 | 3106.5 | 4030.1 | 4794.4 | 5532.7 | 6537.3 | 6433.1 | 5961.2 |
| 62.5° | 1265.2 | 1285.5 | 1421.5 | 1754.5 | 2333.5 | 3271.5 | 4478.8 | 5396.6 | 6682.1 | 6844.2 | 6389.6 |
| 65° | 952.5 | 961.2 | 1053.8 | 1282.6 | 1745.8 | 2411.7 | 3980.9 | 5370.5 | 6763.1 | 7194.5 | 6768.9 |
| 67.5° | 749.8 | 764.3 | 822.2 | 978.6 | 1299.9 | 1754.5 | 3242.6 | 5353.2 | 6734.2 | 7336.4 | 6968.7 |
| 70° | 631.1 | 634.0 | 677.5 | 764.3 | 972.8 | 1262.3 | 2423.3 | 5092.6 | 6572.0 | 7087.4 | 6783.4 |
| 72.5° | 547.2 | 547.2 | 567.5 | 636.9 | 781.7 | 955.4 | 1650.2 | 4470.1 | 6160.9 | 6331.7 | 6140.7 |
| 75° | 443.0 | 440.1 | 474.8 | 541.4 | 628.3 | 735.4 | 1108.9 | 3384.5 | 5298.2 | 5211.3 | 5055.0 |
| 77.5° | 385.1 | 382.2 | 411.1 | 469.0 | 518.2 | 587.7 | 758.5 | 2197.4 | 4169.0 | 3908.5 | 3810.0 |
| 80° | 330.0 | 321.4 | 344.5 | 399.5 | 425.6 | 457.4 | 524.0 | 1279.7 | 2724.4 | 2562.2 | 2443.5 |
| 82.5° | 249.0 | 228.7 | 222.9 | 269.3 | 286.6 | 266.4 | 266.4 | 448.8 | 990.1 | 998.8 | 923.6 |
| 85° | 20.3 | 23.2 | 29.0 | 34.7 | 49.2 | 55.0 | 57.9 | 95.5 | 147.7 | 141.9 | 144.8 |
| 87.5° | 2.9 | 2.9 | 2.9 | 5.8 | 5.8 | 8.7 | 8.7 | 8.7 | 11.6 | 11.6 | 11.6 |
| 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: P867468
 CATALOG NUMBER: MEM2-HTN-SA-110-722-U-T2R

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 | 2061.4 |
| 2.5° | 2070.0 | 2064.3 | 2058.5 | 2058.5 | 2058.5 | 2052.7 | 2049.8 | 2049.8 | 2046.9 | 2038.2 | 2035.3 |
| 5° | 2090.3 | 2081.6 | 2072.9 | 2072.9 | 2072.9 | 2070.0 | 2067.2 | 2070.0 | 2067.2 | 2058.5 | 2055.6 |
| 7.5° | 2130.8 | 2119.3 | 2107.7 | 2107.7 | 2113.5 | 2110.6 | 2110.6 | 2113.5 | 2110.6 | 2101.9 | 2099.0 |
| 10° | 2188.7 | 2171.4 | 2165.6 | 2165.6 | 2171.4 | 2168.5 | 2165.6 | 2165.6 | 2162.7 | 2148.2 | 2154.0 |
| 12.5° | 2252.4 | 2235.1 | 2229.3 | 2232.2 | 2229.3 | 2223.5 | 2226.4 | 2217.7 | 2214.8 | 2191.6 | 2188.7 |
| 15° | 2333.5 | 2313.2 | 2301.7 | 2304.6 | 2295.9 | 2284.3 | 2272.7 | 2266.9 | 2255.3 | 2235.1 | 2229.3 |
| 17.5° | 2426.2 | 2394.3 | 2379.8 | 2379.8 | 2362.5 | 2339.3 | 2321.9 | 2304.6 | 2287.2 | 2264.0 | 2258.2 |
| 20° | 2515.9 | 2487.0 | 2463.8 | 2458.0 | 2423.3 | 2385.6 | 2353.8 | 2324.8 | 2304.6 | 2278.5 | 2272.7 |
| 22.5° | 2628.8 | 2588.3 | 2556.4 | 2530.4 | 2478.3 | 2417.5 | 2368.3 | 2327.7 | 2298.8 | 2269.8 | 2261.1 |
| 25° | 2747.5 | 2689.6 | 2637.5 | 2588.3 | 2515.9 | 2429.0 | 2359.6 | 2301.7 | 2264.0 | 2232.2 | 2226.4 |
| 27.5° | 2866.2 | 2790.9 | 2715.7 | 2637.5 | 2527.5 | 2414.6 | 2316.1 | 2246.7 | 2197.4 | 2156.9 | 2151.1 |
| 30° | 2993.6 | 2901.0 | 2782.3 | 2669.3 | 2524.6 | 2376.9 | 2252.4 | 2154.0 | 2096.1 | 2049.8 | 2044.0 |
| 32.5° | 3123.9 | 3008.1 | 2846.0 | 2692.5 | 2510.1 | 2321.9 | 2159.8 | 2055.6 | 1983.2 | 1931.1 | 1916.6 |
| 35° | 3268.6 | 3126.8 | 2903.9 | 2701.2 | 2469.6 | 2240.9 | 2061.4 | 1931.1 | 1847.1 | 1795.0 | 1783.4 |
| 37.5° | 3416.3 | 3236.8 | 2941.5 | 2695.4 | 2411.7 | 2145.3 | 1934.0 | 1800.8 | 1702.4 | 1630.0 | 1618.4 |
| 40° | 3566.9 | 3338.1 | 2964.7 | 2666.5 | 2330.6 | 2026.6 | 1815.3 | 1653.1 | 1511.3 | 1444.7 | 1412.8 |
| 42.5° | 3705.8 | 3430.8 | 2976.2 | 2625.9 | 2240.9 | 1902.1 | 1658.9 | 1447.6 | 1314.4 | 1242.0 | 1256.5 |
| 45° | 3850.6 | 3517.6 | 2979.1 | 2576.7 | 2122.2 | 1742.9 | 1462.1 | 1265.2 | 1132.0 | 1077.0 | 1071.2 |
| 47.5° | 3975.1 | 3590.0 | 2973.3 | 2507.2 | 1989.0 | 1560.5 | 1256.5 | 1068.3 | 969.9 | 917.8 | 912.0 |
| 50° | 4140.1 | 3671.1 | 2964.7 | 2426.2 | 1815.3 | 1352.0 | 1065.4 | 912.0 | 822.2 | 781.7 | 778.8 |
| 52.5° | 4305.1 | 3760.8 | 2958.9 | 2313.2 | 1632.9 | 1155.2 | 891.7 | 770.1 | 709.3 | 689.1 | 683.3 |
| 55° | 4522.3 | 3870.8 | 2961.8 | 2183.0 | 1424.4 | 952.5 | 755.6 | 671.7 | 639.8 | 631.1 | 631.1 |
| 57.5° | 4771.2 | 4012.7 | 2979.1 | 2038.2 | 1207.3 | 787.5 | 657.2 | 619.6 | 616.7 | 622.5 | 625.4 |
| 60° | 5072.3 | 4200.9 | 3013.9 | 1887.7 | 1007.5 | 665.9 | 599.3 | 596.4 | 605.1 | 625.4 | 631.1 |
| 62.5° | 5411.1 | 4406.5 | 3057.3 | 1690.8 | 816.4 | 584.8 | 567.5 | 579.0 | 590.6 | 613.8 | 616.7 |
| 65° | 5709.3 | 4638.1 | 3083.4 | 1502.6 | 683.3 | 538.5 | 547.2 | 553.0 | 581.9 | 613.8 | 613.8 |
| 67.5° | 5888.8 | 4806.0 | 2984.9 | 1265.2 | 570.3 | 498.0 | 515.3 | 532.7 | 564.6 | 593.5 | 599.3 |
| 70° | 5828.0 | 4751.0 | 2649.1 | 981.5 | 483.5 | 460.3 | 480.6 | 506.7 | 538.5 | 573.2 | 590.6 |
| 72.5° | 5405.3 | 4360.1 | 2151.1 | 715.1 | 419.8 | 425.6 | 451.6 | 486.4 | 515.3 | 553.0 | 576.1 |
| 75° | 4519.4 | 3639.2 | 1551.8 | 515.3 | 367.7 | 390.8 | 431.4 | 460.3 | 480.6 | 489.3 | 492.2 |
| 77.5° | 3430.8 | 2675.1 | 1056.7 | 385.1 | 318.5 | 350.3 | 393.7 | 425.6 | 431.4 | 437.2 | 443.0 |
| 80° | 2240.9 | 1702.4 | 596.4 | 269.3 | 243.2 | 286.6 | 321.4 | 356.1 | 344.5 | 361.9 | 367.7 |
| 82.5° | 946.7 | 744.1 | 272.1 | 133.2 | 112.9 | 121.6 | 130.3 | 115.8 | 107.1 | 107.1 | 92.6 |
| 85° | 124.5 | 95.5 | 40.5 | 17.4 | 14.5 | 8.7 | 8.7 | 8.7 | 5.8 | 5.8 | 5.8 |
| 87.5° | 11.6 | 11.6 | 8.7 | 8.7 | 5.8 | 5.8 | 2.9 | 5.8 | 2.9 | 2.9 | 2.9 |
| 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: SP1-2407-157-2

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-30-722-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-30-722-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-2
 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-30-722-U-5WQ-2**
 Description: Epic Modern Light Square 30W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 2253
 CIE u': 0.2868
 CIE v': 0.5332
 Duv: -0.0014
 CIE x: 0.4974
 CIE y: 0.4110
 CIE z: 0.0915
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 587
 Purity: 72.69432
 Rf: 76.9
 Rg: 92.7

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 70.6 | | |
| R1: | 68.4 | R9: | -36.0 |
| R2: | 88.7 | R10: | 78.2 |
| R3: | 85.4 | R11: | 61.0 |
| R4: | 63.5 | R12: | 74.2 |
| R5: | 69.0 | R13: | 72.8 |
| R6: | 88.9 | R14: | 92.2 |
| R7: | 68.5 | R15: | 58.0 |
| R8: | 32.0 | | |



Test Conditions

Stabilization Time: 29M
 Operation Time: 1H 29M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2407-157-2

| 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: SP1-2407-157-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-2

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 | 117 | NR | 620 | 896 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 137 | NR | 625 | 838 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 160 | NR | 630 | 774 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 183 | NR | 635 | 704 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 202 | NR | 640 | 635 | NR | 770 | 10 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 219 | NR | 645 | 565 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 235 | NR | 650 | 501 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 249 | NR | 655 | 440 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 263 | NR | 660 | 383 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 281 | NR | 665 | 332 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 1 | NR | 540 | 302 | NR | 670 | 286 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 3 | NR | 545 | 331 | NR | 675 | 245 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 6 | NR | 550 | 366 | NR | 680 | 210 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 12 | NR | 555 | 411 | NR | 685 | 178 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 21 | NR | 560 | 469 | NR | 690 | 152 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 38 | NR | 565 | 536 | NR | 695 | 129 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 66 | NR | 570 | 614 | NR | 700 | 109 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 122 | NR | 575 | 701 | NR | 705 | 92 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 215 | NR | 580 | 785 | NR | 710 | 77 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 236 | NR | 585 | 863 | NR | 715 | 66 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 170 | NR | 590 | 928 | NR | 720 | 55 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 148 | NR | 595 | 971 | NR | 725 | 47 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 132 | NR | 600 | 994 | NR | 730 | 40 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 104 | NR | 605 | 996 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 97 | NR | 610 | 979 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 943 | NR | 745 | 24 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 0.96

| 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 | 117 | NR | 620 | 896 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 137 | NR | 625 | 838 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 160 | NR | 630 | 774 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 183 | NR | 635 | 704 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 202 | NR | 640 | 635 | NR | 770 | 10 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 219 | NR | 645 | 565 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 235 | NR | 650 | 501 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 249 | NR | 655 | 440 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 263 | NR | 660 | 383 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 281 | NR | 665 | 332 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 1 | NR | 540 | 302 | NR | 670 | 286 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 3 | NR | 545 | 331 | NR | 675 | 245 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 6 | NR | 550 | 366 | NR | 680 | 210 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 12 | NR | 555 | 411 | NR | 685 | 178 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 21 | NR | 560 | 469 | NR | 690 | 152 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 38 | NR | 565 | 536 | NR | 695 | 129 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 66 | NR | 570 | 614 | NR | 700 | 109 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 122 | NR | 575 | 701 | NR | 705 | 92 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 215 | NR | 580 | 785 | NR | 710 | 77 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 236 | NR | 585 | 863 | NR | 715 | 66 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 170 | NR | 590 | 928 | NR | 720 | 55 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 148 | NR | 595 | 971 | NR | 725 | 47 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 132 | NR | 600 | 994 | NR | 730 | 40 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 104 | NR | 605 | 996 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 97 | NR | 610 | 979 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 943 | NR | 745 | 24 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.71

| λ (nm) | Power W ² /nm | Lumens (φ/nm) | λ (nm) | Power W ² /nm | Lumens (φ/nm) | λ (nm) | Power W ² /nm | Lumens (φ/nm) | λ (nm) | Power W ² /nm | Lumens (φ/nm) | λ (nm) | Power W ² /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 117 | NR | 620 | 896 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 137 | NR | 625 | 838 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 160 | NR | 630 | 774 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 183 | NR | 635 | 704 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 202 | NR | 640 | 635 | NR | 770 | 10 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 219 | NR | 645 | 565 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 235 | NR | 650 | 501 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 249 | NR | 655 | 440 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 263 | NR | 660 | 383 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 281 | NR | 665 | 332 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 1 | NR | 540 | 302 | NR | 670 | 286 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 3 | NR | 545 | 331 | NR | 675 | 245 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 6 | NR | 550 | 366 | NR | 680 | 210 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 12 | NR | 555 | 411 | NR | 685 | 178 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 21 | NR | 560 | 469 | NR | 690 | 152 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 38 | NR | 565 | 536 | NR | 695 | 129 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 66 | NR | 570 | 614 | NR | 700 | 109 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 122 | NR | 575 | 701 | NR | 705 | 92 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 215 | NR | 580 | 785 | NR | 710 | 77 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 236 | NR | 585 | 863 | NR | 715 | 66 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 170 | NR | 590 | 928 | NR | 720 | 55 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 148 | NR | 595 | 971 | NR | 725 | 47 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 132 | NR | 600 | 994 | NR | 730 | 40 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 104 | NR | 605 | 996 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 97 | NR | 610 | 979 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 943 | NR | 745 | 24 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 76.9$
 $R_g = 92.7$
 CIE $R_a = 70.6$
 $R_9 = -36.0$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 76 | CES51 = 88 | CES76 = 78 |
| CES02 = 65 | CES27 = 94 | CES52 = 85 | CES77 = 75 |
| CES03 = 32 | CES28 = 93 | CES53 = 80 | CES78 = 79 |
| CES04 = 72 | CES29 = 81 | CES54 = 86 | CES79 = 82 |
| CES05 = 51 | CES30 = 91 | CES55 = 83 | CES80 = 81 |
| CES06 = 52 | CES31 = 83 | CES56 = 77 | CES81 = 51 |
| CES07 = 44 | CES32 = 75 | CES57 = 75 | CES82 = 92 |
| CES08 = 42 | CES33 = 88 | CES58 = 76 | CES83 = 88 |
| CES09 = 29 | CES34 = 88 | CES59 = 84 | CES84 = 90 |
| CES10 = 79 | CES35 = 94 | CES60 = 91 | CES85 = 65 |
| CES11 = 62 | CES36 = 90 | CES61 = 82 | CES86 = 48 |
| CES12 = 68 | CES37 = 97 | CES62 = 91 | CES87 = 76 |
| CES13 = 45 | CES38 = 98 | CES63 = 86 | CES88 = 78 |
| CES14 = 75 | CES39 = 97 | CES64 = 70 | CES89 = 61 |
| CES15 = 72 | CES40 = 94 | CES65 = 71 | CES90 = 80 |
| CES16 = 48 | CES41 = 95 | CES66 = 71 | CES91 = 80 |
| CES17 = 51 | CES42 = 89 | CES67 = 70 | CES92 = 51 |
| CES18 = 57 | CES43 = 80 | CES68 = 74 | CES93 = 68 |
| CES19 = 74 | CES44 = 99 | CES69 = 84 | CES94 = 44 |
| CES20 = 68 | CES45 = 83 | CES70 = 72 | CES95 = 66 |
| CES21 = 88 | CES46 = 81 | CES71 = 75 | CES96 = 75 |
| CES22 = 81 | CES47 = 88 | CES72 = 89 | CES97 = 76 |
| CES23 = 92 | CES48 = 73 | CES73 = 68 | CES98 = 72 |
| CES24 = 92 | CES49 = 82 | CES74 = 85 | CES99 = 63 |
| CES25 = 73 | CES50 = 87 | CES75 = 80 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)