

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: P867430

Luminaire Tested: **MEM2-HTN-SA-60-722-U-T1**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867430
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-60-722-U-T1
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 60W 70CRI 2200K
FIXTURE w/ TYPE 1 DISTRIBUTION OPTIC
Light Source: (20) 2200K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

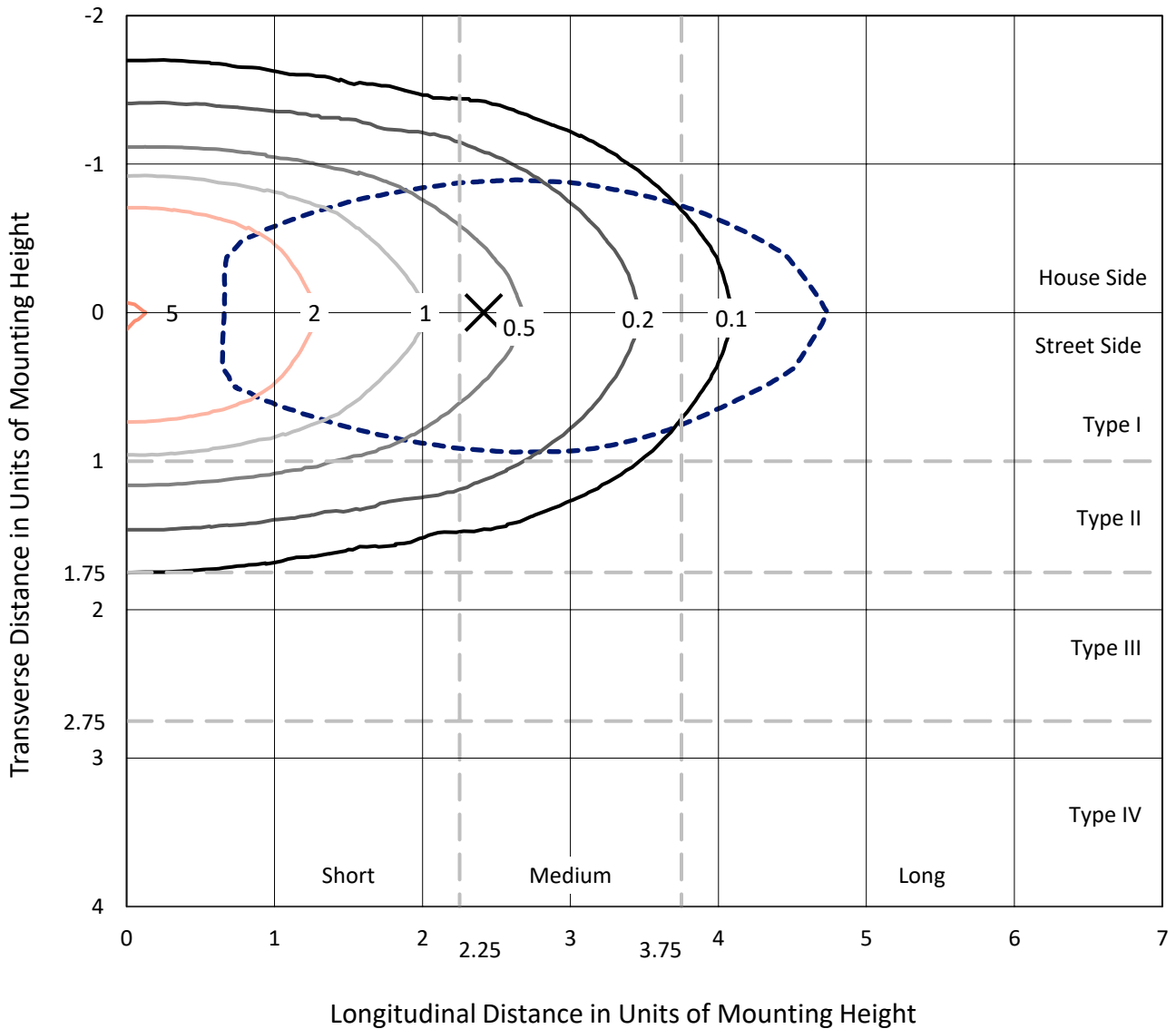
Lumens per Lamp: N/A
Luminaire Lumens: 8344.7 lumens
Efficiency: N/A
Efficacy: 136.8 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type I - Short
BUG Rating: B3 - U0 - G3

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: P867430
 CATALOG NUMBER: MEM2-HTN-SA-60-722-U-T1

Iso-Footcandle Lines of Horizontal Illumination

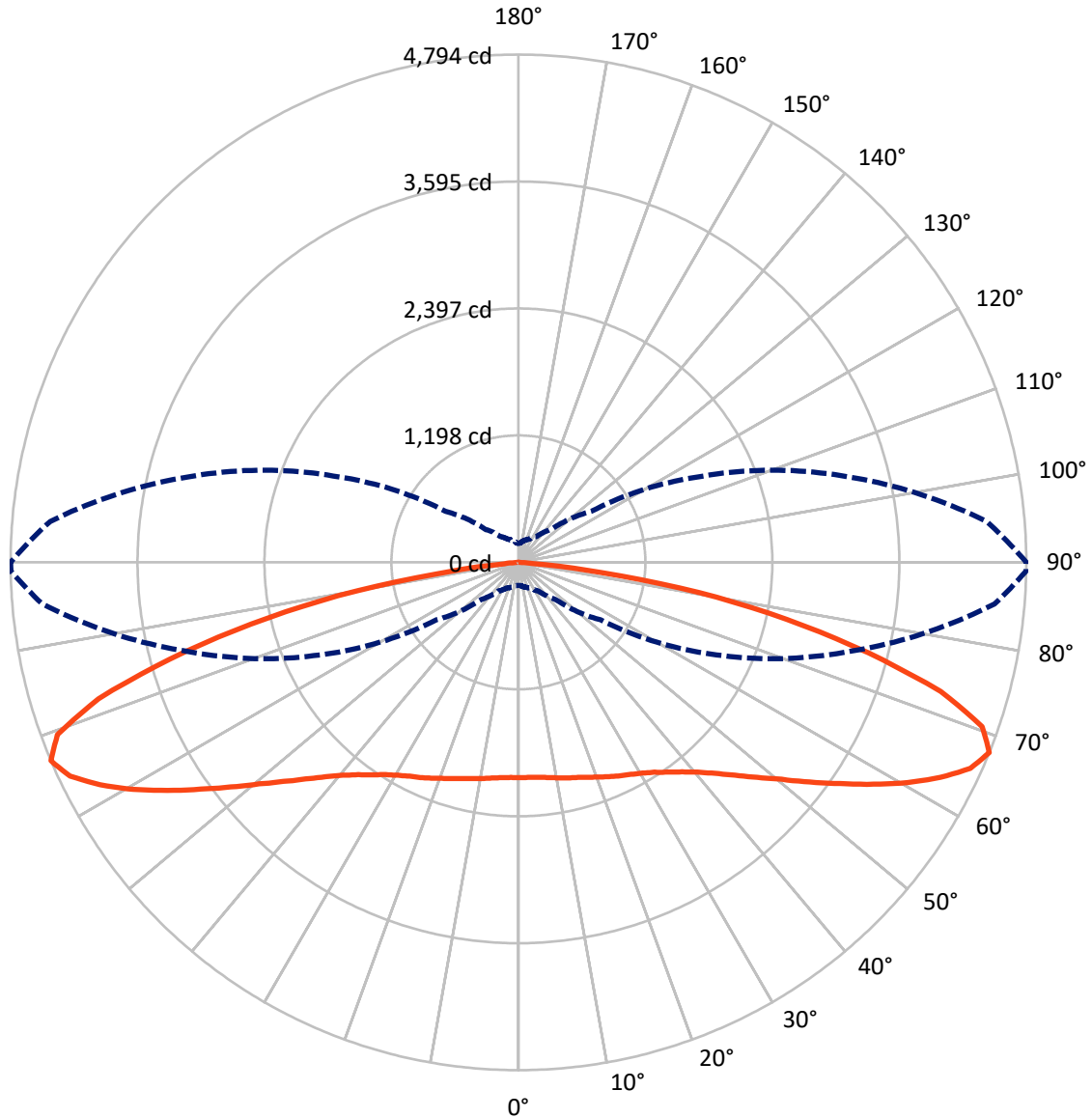
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.1 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 | 4098.3 | 0.0 | 4098.3 |
| | % Fixture | 49.1 | 0.0 | 49.1 |
| Street Side | Lumens | 4246.5 | 0.0 | 4246.5 |
| | % Fixture | 50.9 | 0.0 | 50.9 |
| Total | Lumens | 8344.7 | 0.0 | 8344.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 194.9 | 2.3 |
| 10°-20° | 585.6 | 7.0 |
| 20°-30° | 969.1 | 11.6 |
| 30°-40° | 1285.0 | 15.4 |
| 40°-50° | 1448.8 | 17.4 |
| 50°-60° | 1485.2 | 17.8 |
| 60°-70° | 1402.8 | 16.8 |
| 70°-80° | 860.8 | 10.3 |
| 80°-90° | 112.6 | 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° | 8344.7 | 100.0 |
| 0°-180° | 8344.7 | 100.0 |



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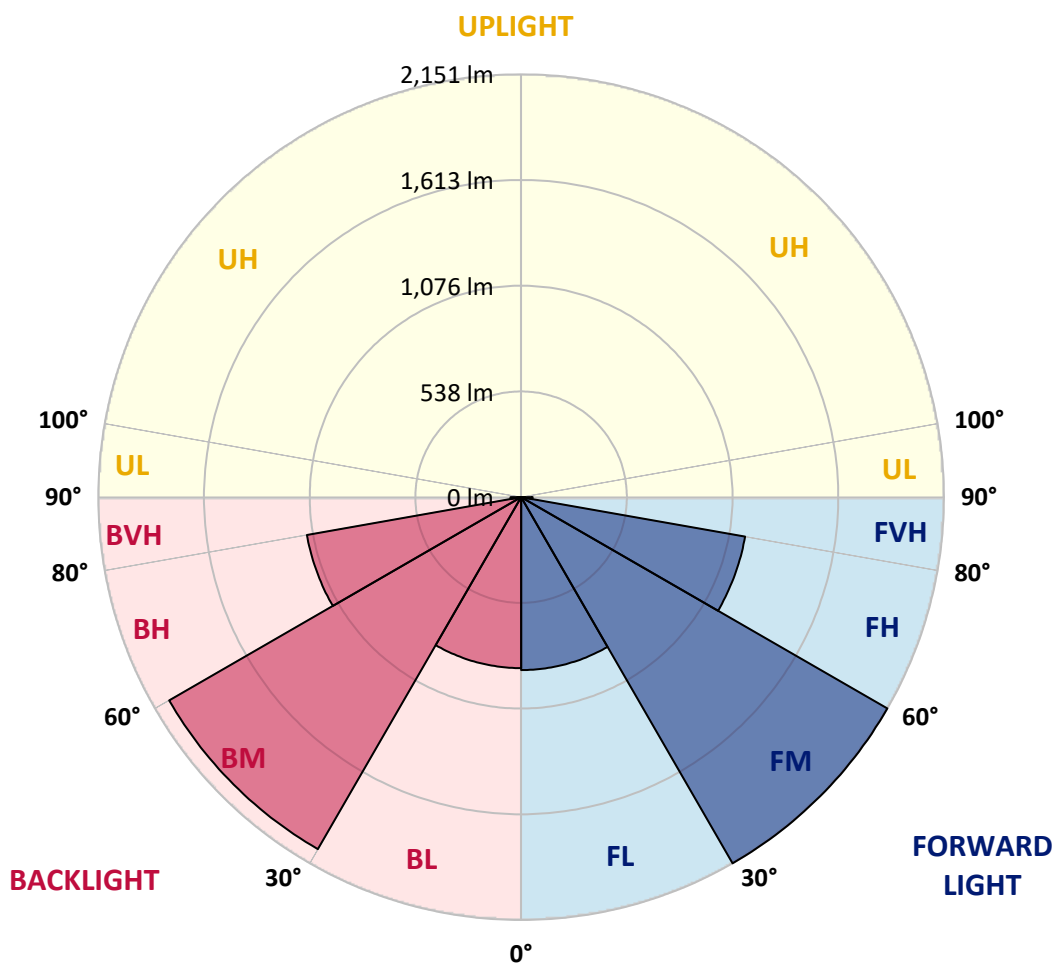
CATALOG NUMBER: MEM2-HTN-SA-60-722-U-T1

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 879.8 | 10.5 | | | |
| FM (30°-60°) | 2151.2 | 25.8 | | | |
| FH (60°-80°) | 1156.9 | 13.9 | | | G1/1800 |
| FVH (80°-90°) | 58.7 | 0.7 | | | G1/100 |
| BL (0°-30°) | 869.7 | 10.4 | B2/1000 | | |
| BM (30°-60°) | 2067.9 | 24.8 | B2/2500 | | |
| BH (60°-80°) | 1106.7 | 13.3 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 54.0 | 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° | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 |
| 2.5° | 2041.2 | 2041.2 | 2036.4 | 2028.4 | 2026.8 | 2028.4 | 2038.0 | 2033.2 | 2033.2 | 2034.8 | 2033.2 |
| 5° | 2041.2 | 2041.2 | 2038.0 | 2030.0 | 2030.0 | 2030.0 | 2041.2 | 2036.4 | 2038.0 | 2039.6 | 2039.6 |
| 7.5° | 2044.4 | 2044.4 | 2041.2 | 2034.8 | 2034.8 | 2034.8 | 2050.8 | 2047.6 | 2047.6 | 2052.4 | 2049.2 |
| 10° | 2052.4 | 2049.2 | 2046.0 | 2047.6 | 2042.8 | 2050.8 | 2058.8 | 2060.4 | 2066.8 | 2070.0 | 2068.4 |
| 12.5° | 2052.4 | 2049.2 | 2041.2 | 2050.8 | 2050.8 | 2062.0 | 2073.2 | 2079.6 | 2087.7 | 2087.7 | 2087.7 |
| 15° | 2042.8 | 2039.6 | 2033.2 | 2049.2 | 2055.6 | 2070.0 | 2086.1 | 2095.7 | 2110.1 | 2110.1 | 2108.5 |
| 17.5° | 2031.6 | 2026.8 | 2023.6 | 2047.6 | 2062.0 | 2081.2 | 2105.3 | 2118.1 | 2134.1 | 2135.7 | 2132.5 |
| 20° | 2010.7 | 2009.1 | 2010.7 | 2042.8 | 2068.4 | 2095.7 | 2124.5 | 2142.1 | 2163.0 | 2169.4 | 2164.6 |
| 22.5° | 1988.3 | 1988.3 | 1994.7 | 2038.0 | 2078.0 | 2114.9 | 2153.3 | 2175.8 | 2196.6 | 2203.0 | 2196.6 |
| 25° | 1957.9 | 1957.9 | 1970.7 | 2022.0 | 2081.2 | 2135.7 | 2180.6 | 2211.0 | 2230.2 | 2236.7 | 2233.5 |
| 27.5° | 1911.4 | 1911.4 | 1925.8 | 1989.9 | 2071.6 | 2151.7 | 2209.4 | 2244.7 | 2265.5 | 2271.9 | 2268.7 |
| 30° | 1845.7 | 1842.5 | 1861.7 | 1941.9 | 2054.0 | 2169.4 | 2243.1 | 2279.9 | 2307.2 | 2312.0 | 2307.2 |
| 32.5° | 1741.6 | 1746.4 | 1775.2 | 1876.2 | 2025.2 | 2180.6 | 2283.1 | 2326.4 | 2356.8 | 2366.4 | 2363.2 |
| 35° | 1615.0 | 1623.0 | 1663.1 | 1792.8 | 1970.7 | 2179.0 | 2324.8 | 2377.6 | 2417.7 | 2430.5 | 2428.9 |
| 37.5° | 1464.4 | 1475.6 | 1525.3 | 1677.5 | 1889.0 | 2154.9 | 2363.2 | 2435.3 | 2488.2 | 2504.2 | 2507.4 |
| 40° | 1299.4 | 1310.6 | 1374.7 | 1542.9 | 1778.4 | 2098.9 | 2385.7 | 2501.0 | 2571.5 | 2603.6 | 2608.4 |
| 42.5° | 1124.7 | 1144.0 | 1220.9 | 1384.3 | 1645.4 | 2009.1 | 2385.7 | 2565.1 | 2651.6 | 2710.9 | 2715.7 |
| 45° | 956.5 | 972.5 | 1065.5 | 1225.7 | 1502.9 | 1893.8 | 2358.4 | 2629.2 | 2760.6 | 2863.1 | 2859.9 |
| 47.5° | 810.7 | 815.5 | 900.4 | 1062.3 | 1344.2 | 1762.4 | 2302.3 | 2686.9 | 2875.9 | 3012.1 | 3041.0 |
| 50° | 660.1 | 671.3 | 743.4 | 903.6 | 1182.4 | 1618.2 | 2207.8 | 2723.7 | 2994.5 | 3201.2 | 3238.0 |
| 52.5° | 554.4 | 556.0 | 610.4 | 757.8 | 1014.2 | 1443.6 | 2094.1 | 2733.3 | 3108.2 | 3406.3 | 3451.1 |
| 55° | 451.8 | 459.8 | 506.3 | 616.8 | 852.4 | 1272.1 | 1946.7 | 2718.9 | 3212.4 | 3604.9 | 3688.2 |
| 57.5° | 387.7 | 389.3 | 423.0 | 511.1 | 719.4 | 1089.5 | 1783.2 | 2670.8 | 3298.9 | 3824.4 | 3930.2 |
| 60° | 333.3 | 333.3 | 358.9 | 426.2 | 581.6 | 911.6 | 1591.0 | 2585.9 | 3347.0 | 4059.9 | 4213.8 |
| 62.5° | 290.0 | 291.6 | 314.0 | 363.7 | 483.9 | 753.0 | 1379.5 | 2453.0 | 3364.6 | 4287.5 | 4463.7 |
| 65° | 262.8 | 264.4 | 277.2 | 310.8 | 398.9 | 612.0 | 1163.2 | 2291.1 | 3340.6 | 4457.3 | 4686.4 |
| 67.5° | 217.9 | 219.5 | 241.9 | 267.6 | 331.7 | 491.9 | 945.3 | 2066.8 | 3242.8 | 4510.2 | 4790.5 |
| 70° | 166.6 | 171.4 | 201.9 | 229.1 | 275.6 | 392.5 | 725.8 | 1770.4 | 3008.9 | 4330.7 | 4619.1 |
| 72.5° | 139.4 | 141.0 | 163.4 | 193.9 | 230.7 | 307.6 | 551.2 | 1393.9 | 2653.2 | 3867.7 | 4188.1 |
| 75° | 121.8 | 123.4 | 136.2 | 163.4 | 192.3 | 246.7 | 382.9 | 962.9 | 2116.5 | 3127.5 | 3420.7 |
| 77.5° | 110.6 | 112.2 | 115.4 | 137.8 | 161.8 | 190.7 | 270.8 | 572.0 | 1493.2 | 2390.5 | 2544.3 |
| 80° | 105.7 | 105.7 | 97.7 | 113.8 | 133.0 | 149.0 | 181.0 | 328.4 | 958.1 | 1611.8 | 1735.2 |
| 82.5° | 75.3 | 73.7 | 67.3 | 70.5 | 81.7 | 81.7 | 92.9 | 136.2 | 366.9 | 680.9 | 738.6 |
| 85° | 4.8 | 4.8 | 8.0 | 9.6 | 14.4 | 19.2 | 24.0 | 32.0 | 92.9 | 126.6 | 131.4 |
| 87.5° | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 3.2 | 3.2 | 3.2 | 4.8 | 6.4 | 6.4 |
| 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: P867430

CATALOG NUMBER: MEM2-HTN-SA-60-722-U-T1

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 | 2033.2 |
| 2.5° | 2031.6 | 2033.2 | 2033.2 | 2036.4 | 2039.6 | 2038.0 | 2036.4 | 2039.6 | 2034.8 | 2025.2 | 2023.6 |
| 5° | 2038.0 | 2038.0 | 2036.4 | 2039.6 | 2042.8 | 2039.6 | 2036.4 | 2036.4 | 2033.2 | 2023.6 | 2022.0 |
| 7.5° | 2050.8 | 2049.2 | 2049.2 | 2049.2 | 2049.2 | 2044.4 | 2039.6 | 2036.4 | 2031.6 | 2022.0 | 2017.2 |
| 10° | 2068.4 | 2066.8 | 2065.2 | 2063.6 | 2055.6 | 2050.8 | 2042.8 | 2038.0 | 2031.6 | 2020.4 | 2017.2 |
| 12.5° | 2087.7 | 2084.4 | 2081.2 | 2082.8 | 2066.8 | 2052.4 | 2044.4 | 2033.2 | 2028.4 | 2002.7 | 1997.9 |
| 15° | 2106.9 | 2102.1 | 2100.5 | 2094.1 | 2078.0 | 2057.2 | 2041.2 | 2025.2 | 2009.1 | 1985.1 | 1977.1 |
| 17.5° | 2132.5 | 2129.3 | 2119.7 | 2113.3 | 2090.9 | 2062.0 | 2038.0 | 2015.6 | 1994.7 | 1965.9 | 1961.1 |
| 20° | 2163.0 | 2159.8 | 2150.1 | 2137.3 | 2108.5 | 2073.2 | 2039.6 | 2004.3 | 1978.7 | 1945.1 | 1937.0 |
| 22.5° | 2196.6 | 2191.8 | 2183.8 | 2169.4 | 2132.5 | 2090.9 | 2044.4 | 1997.9 | 1959.5 | 1921.0 | 1916.2 |
| 25° | 2231.8 | 2228.6 | 2220.6 | 2199.8 | 2159.8 | 2108.5 | 2044.4 | 1975.5 | 1927.4 | 1893.8 | 1879.4 |
| 27.5° | 2265.5 | 2263.9 | 2254.3 | 2230.2 | 2188.6 | 2121.3 | 2030.0 | 1938.6 | 1874.6 | 1829.7 | 1820.1 |
| 30° | 2308.8 | 2305.5 | 2294.3 | 2267.1 | 2220.6 | 2129.3 | 2001.1 | 1876.2 | 1796.1 | 1746.4 | 1732.0 |
| 32.5° | 2361.6 | 2358.4 | 2342.4 | 2308.8 | 2259.1 | 2130.9 | 1959.5 | 1796.1 | 1690.3 | 1637.4 | 1619.8 |
| 35° | 2432.1 | 2425.7 | 2404.9 | 2364.8 | 2295.9 | 2114.9 | 1885.8 | 1693.5 | 1563.7 | 1494.8 | 1470.8 |
| 37.5° | 2509.0 | 2501.0 | 2473.8 | 2424.1 | 2321.6 | 2071.6 | 1781.6 | 1555.7 | 1408.3 | 1326.6 | 1309.0 |
| 40° | 2603.6 | 2592.3 | 2550.7 | 2481.8 | 2331.2 | 1996.3 | 1664.7 | 1414.7 | 1257.7 | 1168.0 | 1147.2 |
| 42.5° | 2722.1 | 2702.9 | 2635.6 | 2545.9 | 2312.0 | 1893.8 | 1525.3 | 1268.9 | 1089.5 | 1006.2 | 1001.4 |
| 45° | 2864.7 | 2834.3 | 2733.3 | 2608.4 | 2270.3 | 1765.6 | 1377.9 | 1105.5 | 934.1 | 852.4 | 831.5 |
| 47.5° | 3032.9 | 2996.1 | 2847.1 | 2656.4 | 2188.6 | 1634.2 | 1219.3 | 946.9 | 789.9 | 706.6 | 690.5 |
| 50° | 3218.8 | 3183.5 | 2967.3 | 2683.7 | 2100.5 | 1480.4 | 1063.9 | 805.9 | 648.9 | 580.0 | 580.0 |
| 52.5° | 3444.7 | 3364.6 | 3082.6 | 2686.9 | 1965.9 | 1310.6 | 914.8 | 668.1 | 544.7 | 483.9 | 471.0 |
| 55° | 3685.0 | 3590.5 | 3186.8 | 2658.0 | 1826.5 | 1155.2 | 754.6 | 556.0 | 447.0 | 403.8 | 392.5 |
| 57.5° | 3952.6 | 3808.4 | 3262.1 | 2600.4 | 1650.3 | 985.3 | 629.7 | 458.2 | 376.5 | 341.3 | 336.5 |
| 60° | 4221.8 | 4035.9 | 3306.9 | 2502.6 | 1462.8 | 828.3 | 523.9 | 382.9 | 323.6 | 298.0 | 293.2 |
| 62.5° | 4471.7 | 4221.8 | 3310.1 | 2360.0 | 1280.1 | 690.5 | 429.4 | 330.1 | 286.8 | 267.6 | 267.6 |
| 65° | 4688.0 | 4377.2 | 3255.6 | 2177.4 | 1047.8 | 554.4 | 354.1 | 278.8 | 249.9 | 229.1 | 224.3 |
| 67.5° | 4793.7 | 4436.5 | 3159.5 | 1927.4 | 839.5 | 439.0 | 298.0 | 241.9 | 214.7 | 182.6 | 179.4 |
| 70° | 4644.7 | 4265.0 | 2912.8 | 1607.0 | 648.9 | 349.3 | 248.3 | 206.7 | 179.4 | 152.2 | 149.0 |
| 72.5° | 4168.9 | 3808.4 | 2513.8 | 1244.9 | 488.7 | 282.0 | 206.7 | 176.2 | 147.4 | 133.0 | 129.8 |
| 75° | 3411.1 | 3167.5 | 1986.7 | 857.2 | 341.3 | 221.1 | 173.0 | 149.0 | 125.0 | 118.6 | 117.0 |
| 77.5° | 2589.1 | 2355.2 | 1451.6 | 536.7 | 233.9 | 173.0 | 147.4 | 126.6 | 108.9 | 113.8 | 110.6 |
| 80° | 1728.8 | 1621.4 | 964.5 | 304.4 | 157.0 | 126.6 | 112.2 | 92.9 | 83.3 | 96.1 | 92.9 |
| 82.5° | 785.1 | 743.4 | 453.4 | 133.0 | 70.5 | 54.5 | 38.5 | 28.8 | 22.4 | 20.8 | 24.0 |
| 85° | 131.4 | 115.4 | 32.0 | 14.4 | 8.0 | 4.8 | 3.2 | 3.2 | 1.6 | 1.6 | 1.6 |
| 87.5° | 6.4 | 4.8 | 4.8 | 3.2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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 |

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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 2200K 4-step quadrangle

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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)