

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: P868034

Luminaire Tested: **MEM2-HSN-SA-120-727-U-T3**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P868034
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-120-727-U-T3
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 120W 70CRI 2700K
FITXURE w/ TYPE III DISTRIBUTION OPTIC
Light Source: (20) 2700K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

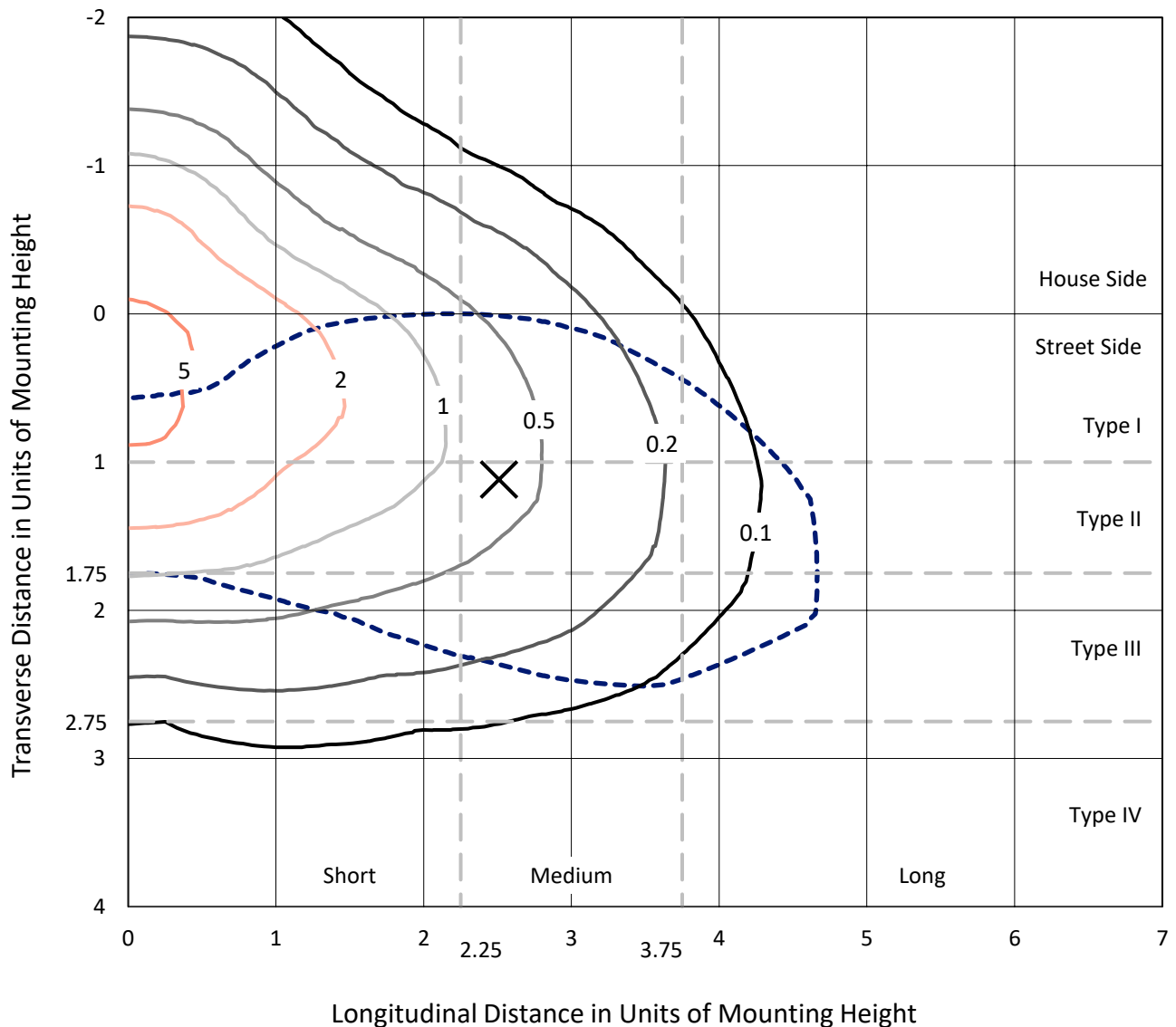
Lumens per Lamp: N/A
Luminaire Lumens: 12741 lumens
Efficiency: N/A
Efficacy: 126.1 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G2

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: P868034
 CATALOG NUMBER: MEM2-HSN-SA-120-727-U-T3

Iso-Footcandle Lines of Horizontal Illumination

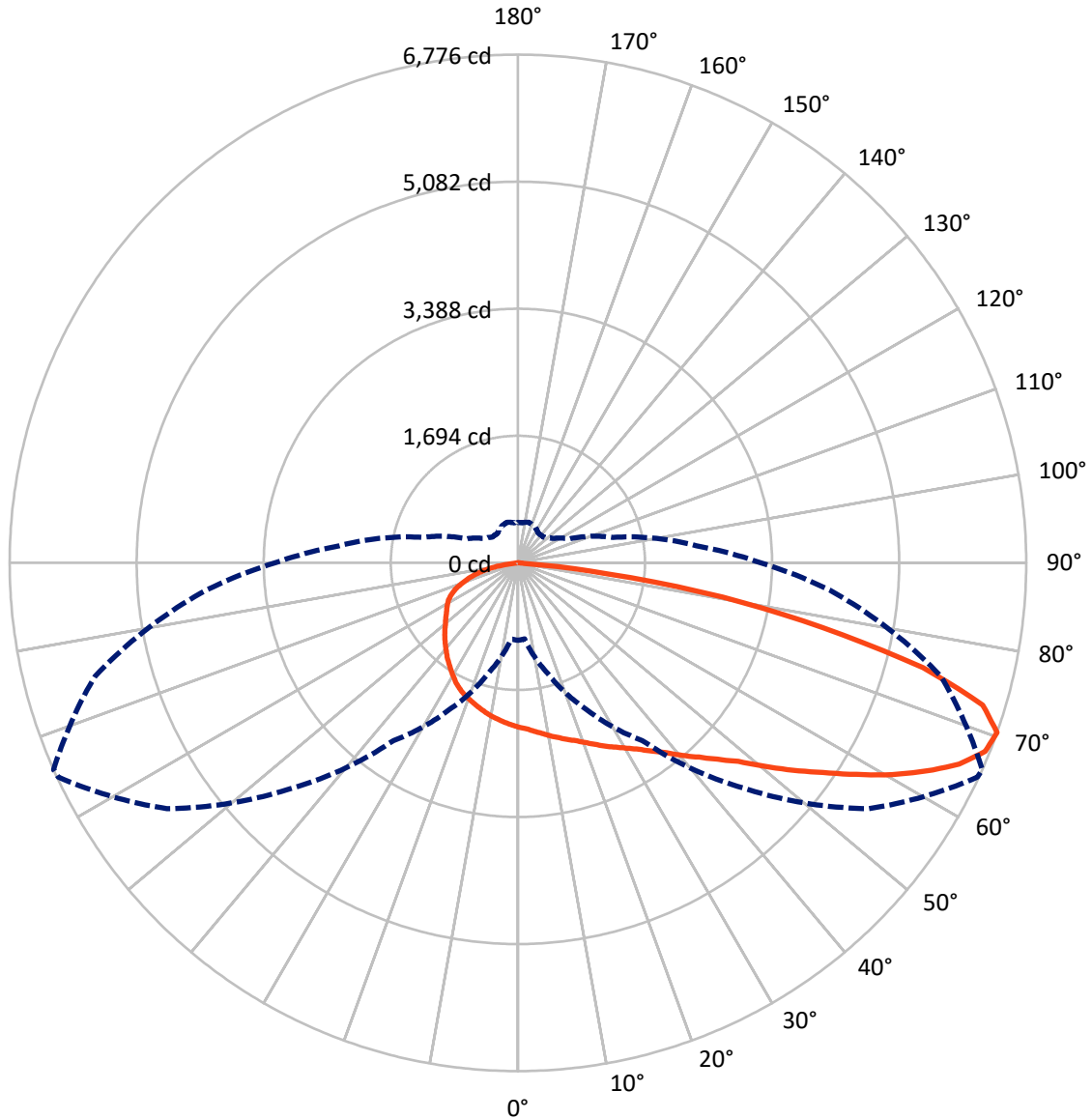
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.9 fc
 Type III - Medium - N/A

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CATALOG NUMBER: MEM2-HSN-SA-120-727-U-T3

Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3283.5 | 0.0 | 3283.5 |
| | % Fixture | 25.8 | 0.0 | 25.8 |
| Street Side | Lumens | 9457.5 | 0.0 | 9457.5 |
| | % Fixture | 74.2 | 0.0 | 74.2 |
| Total | Lumens | 12741.0 | 0.0 | 12741.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 209.8 | 1.6 |
| 10°-20° | 624.9 | 4.9 |
| 20°-30° | 1049.6 | 8.2 |
| 30°-40° | 1581.3 | 12.4 |
| 40°-50° | 2146.7 | 16.8 |
| 50°-60° | 2551.0 | 20.0 |
| 60°-70° | 2603.4 | 20.4 |
| 70°-80° | 1741.3 | 13.7 |
| 80°-90° | 233.0 | 1.8 |
| 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° | 12741.0 | 100.0 |
| 0°-180° | 12741.0 | 100.0 |



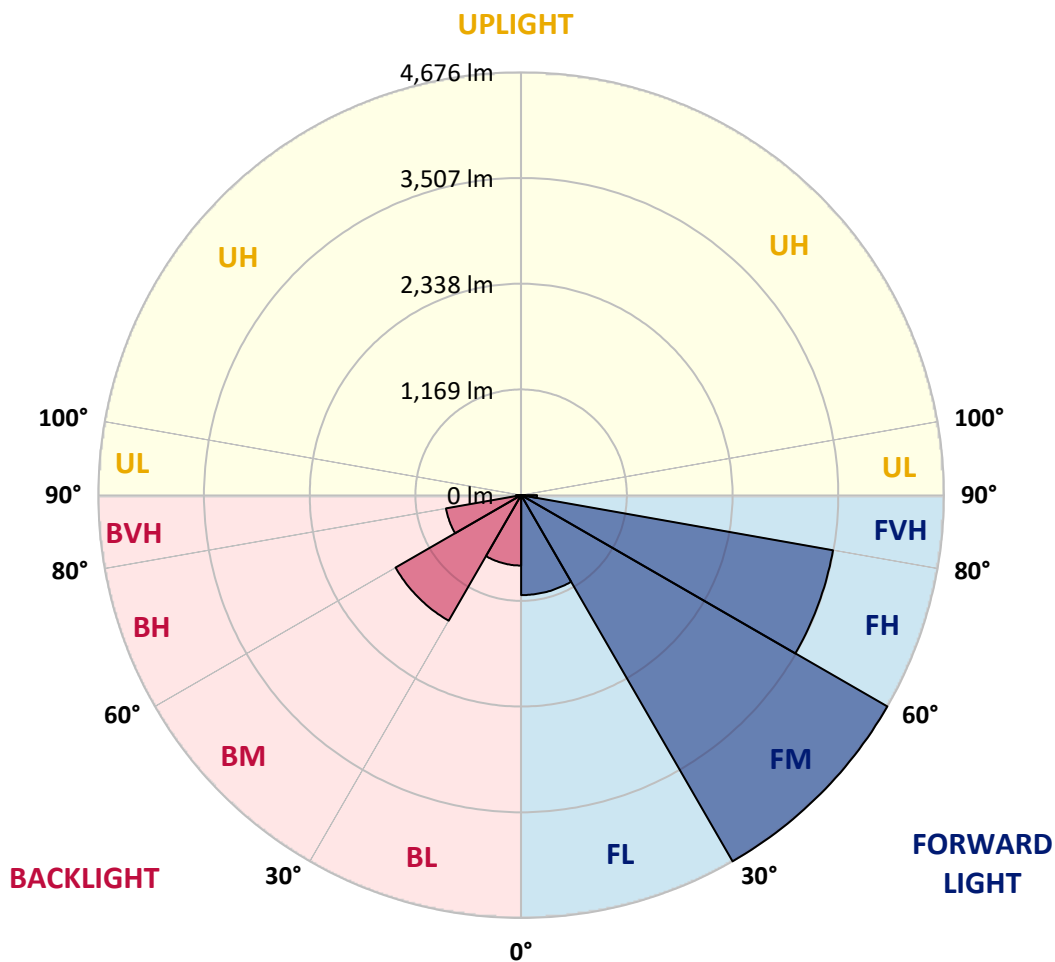
REPORT NUMBER: P868034
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1105.7 | 8.7 | | | |
| FM (30°-60°) | 4675.7 | 36.7 | | | |
| FH (60°-80°) | 3501.7 | 27.5 | | | G2/5000 |
| FVH (80°-90°) | 174.5 | 1.4 | | | G2/225 |
| BL (0°-30°) | 778.6 | 6.1 | B2/1000 | | |
| BM (30°-60°) | 1603.3 | 12.6 | B2/2500 | | |
| BH (60°-80°) | 843.1 | 6.6 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 58.5 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type III Medium





REPORT NUMBER: P868034

CATALOG NUMBER: MEM2-HSN-SA-120-727-U-T3

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 |
| 2.5° | 2270.6 | 2260.5 | 2252.9 | 2258.0 | 2242.8 | 2247.8 | 2230.1 | 2217.5 | 2214.9 | 2209.9 | 2204.8 |
| 5° | 2341.5 | 2341.5 | 2328.8 | 2328.8 | 2311.1 | 2308.6 | 2283.3 | 2255.4 | 2255.4 | 2237.7 | 2217.5 |
| 7.5° | 2417.4 | 2412.4 | 2397.2 | 2394.7 | 2374.4 | 2369.3 | 2341.5 | 2298.5 | 2295.9 | 2263.0 | 2232.7 |
| 10° | 2470.6 | 2473.1 | 2463.0 | 2463.0 | 2447.8 | 2435.2 | 2394.7 | 2349.1 | 2344.0 | 2301.0 | 2252.9 |
| 12.5° | 2511.1 | 2516.2 | 2513.6 | 2513.6 | 2501.0 | 2501.0 | 2455.4 | 2394.7 | 2389.6 | 2333.9 | 2265.6 |
| 15° | 2554.1 | 2551.6 | 2559.2 | 2561.7 | 2556.7 | 2549.1 | 2516.2 | 2445.3 | 2442.8 | 2369.3 | 2283.3 |
| 17.5° | 2592.1 | 2589.6 | 2592.1 | 2604.8 | 2607.3 | 2607.3 | 2574.4 | 2501.0 | 2490.9 | 2412.4 | 2298.5 |
| 20° | 2614.9 | 2620.0 | 2630.1 | 2645.3 | 2652.9 | 2673.1 | 2645.3 | 2566.8 | 2556.7 | 2457.9 | 2331.4 |
| 22.5° | 2701.0 | 2685.8 | 2693.4 | 2703.5 | 2713.6 | 2741.5 | 2716.1 | 2635.1 | 2627.5 | 2526.3 | 2369.3 |
| 25° | 2847.8 | 2847.8 | 2830.1 | 2812.3 | 2799.7 | 2812.3 | 2792.1 | 2713.6 | 2708.5 | 2587.0 | 2412.4 |
| 27.5° | 3103.4 | 3103.4 | 3065.5 | 2999.7 | 2916.1 | 2893.3 | 2878.1 | 2797.1 | 2782.0 | 2652.9 | 2440.2 |
| 30° | 3427.5 | 3437.6 | 3369.2 | 3257.9 | 3103.4 | 3002.2 | 2964.2 | 2875.6 | 2868.0 | 2718.7 | 2483.3 |
| 32.5° | 3774.2 | 3794.5 | 3743.9 | 3581.9 | 3328.7 | 3131.3 | 3070.5 | 2979.4 | 2961.7 | 2797.1 | 2538.9 |
| 35° | 4085.6 | 4105.9 | 4037.5 | 3885.6 | 3561.6 | 3318.6 | 3197.1 | 3093.3 | 3083.2 | 2898.4 | 2622.5 |
| 37.5° | 4338.7 | 4343.8 | 4300.8 | 4116.0 | 3756.5 | 3475.5 | 3354.0 | 3230.0 | 3209.8 | 3019.9 | 2711.1 |
| 40° | 4607.1 | 4627.3 | 4584.3 | 4356.5 | 3933.7 | 3645.1 | 3511.0 | 3394.5 | 3376.8 | 3146.5 | 2794.6 |
| 42.5° | 4888.0 | 4885.5 | 4885.5 | 4564.0 | 4110.9 | 3786.9 | 3680.6 | 3551.5 | 3541.4 | 3275.6 | 2885.7 |
| 45° | 5060.2 | 5070.3 | 5042.5 | 4688.1 | 4371.6 | 3933.7 | 3845.1 | 3751.5 | 3733.7 | 3455.3 | 3004.7 |
| 47.5° | 5103.2 | 5080.4 | 4953.9 | 4784.3 | 4665.3 | 4085.6 | 4052.7 | 3997.0 | 3956.5 | 3652.7 | 3151.5 |
| 50° | 5045.0 | 5009.5 | 4936.1 | 4827.3 | 4774.1 | 4267.9 | 4262.8 | 4290.6 | 4262.8 | 3893.2 | 3321.1 |
| 52.5° | 4827.3 | 4822.2 | 4809.6 | 4834.9 | 4748.8 | 4412.1 | 4500.7 | 4596.9 | 4591.9 | 4138.8 | 3498.3 |
| 55° | 4369.1 | 4402.0 | 4553.9 | 4713.4 | 4652.6 | 4510.9 | 4766.5 | 4951.3 | 4931.1 | 4427.3 | 3680.6 |
| 57.5° | 3900.8 | 3933.7 | 4128.6 | 4508.3 | 4559.0 | 4617.2 | 5065.2 | 5353.8 | 5320.9 | 4741.2 | 3847.7 |
| 60° | 3493.3 | 3457.8 | 3652.7 | 4199.5 | 4427.3 | 4713.4 | 5361.4 | 5761.4 | 5733.5 | 5055.1 | 4019.8 |
| 62.5° | 2847.8 | 2883.2 | 3194.6 | 3748.9 | 4242.5 | 4774.1 | 5604.4 | 6130.9 | 6113.2 | 5343.7 | 4159.0 |
| 65° | 2252.9 | 2204.8 | 2673.1 | 3275.6 | 3923.6 | 4753.9 | 5814.5 | 6477.7 | 6465.1 | 5627.2 | 4265.3 |
| 67.5° | 1531.5 | 1498.6 | 2116.2 | 2804.7 | 3490.7 | 4591.9 | 5862.6 | 6710.6 | 6715.7 | 5794.3 | 4293.2 |
| 70° | 1032.8 | 1017.6 | 1521.3 | 2156.7 | 2890.8 | 4242.5 | 5713.3 | 6758.7 | 6776.4 | 5837.3 | 4169.1 |
| 72.5° | 761.9 | 759.4 | 1113.8 | 1539.1 | 2151.7 | 3581.9 | 5305.7 | 6444.8 | 6477.7 | 5533.5 | 3804.6 |
| 75° | 599.9 | 607.5 | 794.8 | 1093.5 | 1435.3 | 2650.3 | 4462.8 | 5525.9 | 5576.6 | 4779.2 | 3159.1 |
| 77.5° | 491.1 | 491.1 | 556.9 | 784.7 | 959.4 | 1645.4 | 3209.8 | 4045.1 | 4146.4 | 3688.2 | 2432.6 |
| 80° | 397.4 | 405.0 | 412.6 | 546.8 | 635.4 | 939.1 | 1868.1 | 2698.4 | 2771.8 | 2569.3 | 1756.8 |
| 82.5° | 217.7 | 232.9 | 225.3 | 283.5 | 319.0 | 435.4 | 741.7 | 1091.0 | 1202.4 | 1070.8 | 797.4 |
| 85° | 15.2 | 10.1 | 17.7 | 22.8 | 27.8 | 43.0 | 58.2 | 81.0 | 75.9 | 108.8 | 55.7 |
| 87.5° | 2.5 | 2.5 | 2.5 | 5.1 | 5.1 | 7.6 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 |
| 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: P868034

CATALOG NUMBER: MEM2-HSN-SA-120-727-U-T3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 | 2192.2 |
| 2.5° | 2202.3 | 2189.6 | 2169.4 | 2164.3 | 2156.7 | 2146.6 | 2136.5 | 2121.3 | 2116.2 | 2121.3 | 2126.3 |
| 5° | 2204.8 | 2187.1 | 2154.2 | 2133.9 | 2113.7 | 2096.0 | 2075.7 | 2055.5 | 2042.8 | 2045.3 | 2055.5 |
| 7.5° | 2212.4 | 2187.1 | 2136.5 | 2103.6 | 2070.6 | 2042.8 | 2009.9 | 1987.1 | 1971.9 | 1974.5 | 1982.1 |
| 10° | 2222.5 | 2187.1 | 2126.3 | 2070.6 | 2025.1 | 1984.6 | 1951.7 | 1923.8 | 1908.6 | 1906.1 | 1908.6 |
| 12.5° | 2225.1 | 2184.6 | 2103.6 | 2035.2 | 1979.5 | 1926.4 | 1890.9 | 1865.6 | 1850.4 | 1842.8 | 1847.9 |
| 15° | 2232.7 | 2177.0 | 2080.8 | 1997.2 | 1928.9 | 1873.2 | 1830.2 | 1799.8 | 1789.7 | 1784.6 | 1782.1 |
| 17.5° | 2242.8 | 2174.4 | 2060.5 | 1959.3 | 1878.3 | 1815.0 | 1777.0 | 1746.6 | 1734.0 | 1728.9 | 1734.0 |
| 20° | 2258.0 | 2177.0 | 2037.7 | 1921.3 | 1832.7 | 1769.4 | 1726.4 | 1696.0 | 1685.9 | 1683.4 | 1680.8 |
| 22.5° | 2278.2 | 2182.0 | 2020.0 | 1885.9 | 1782.1 | 1718.8 | 1675.8 | 1655.5 | 1647.9 | 1650.4 | 1650.4 |
| 25° | 2298.5 | 2187.1 | 1994.7 | 1837.8 | 1728.9 | 1663.1 | 1632.7 | 1617.5 | 1622.6 | 1632.7 | 1632.7 |
| 27.5° | 2316.2 | 2184.6 | 1959.3 | 1787.1 | 1665.6 | 1604.9 | 1582.1 | 1584.6 | 1597.3 | 1615.0 | 1617.5 |
| 30° | 2339.0 | 2184.6 | 1921.3 | 1723.9 | 1594.8 | 1536.5 | 1531.5 | 1551.7 | 1572.0 | 1589.7 | 1589.7 |
| 32.5° | 2374.4 | 2199.7 | 1890.9 | 1660.6 | 1521.3 | 1475.8 | 1498.6 | 1526.4 | 1549.2 | 1566.9 | 1572.0 |
| 35° | 2435.2 | 2232.7 | 1870.7 | 1597.3 | 1450.5 | 1417.6 | 1460.6 | 1506.2 | 1521.3 | 1534.0 | 1536.5 |
| 37.5° | 2493.4 | 2263.0 | 1845.4 | 1536.5 | 1377.1 | 1364.4 | 1422.6 | 1470.7 | 1473.2 | 1480.8 | 1480.8 |
| 40° | 2549.1 | 2285.8 | 1812.4 | 1470.7 | 1306.2 | 1306.2 | 1374.5 | 1415.0 | 1410.0 | 1402.4 | 1404.9 |
| 42.5° | 2609.8 | 2298.5 | 1774.5 | 1410.0 | 1248.0 | 1248.0 | 1303.6 | 1339.1 | 1336.6 | 1346.7 | 1354.3 |
| 45° | 2683.2 | 2323.8 | 1723.9 | 1354.3 | 1187.2 | 1177.1 | 1222.6 | 1253.0 | 1291.0 | 1336.6 | 1349.2 |
| 47.5° | 2784.5 | 2359.2 | 1683.4 | 1293.5 | 1136.6 | 1101.1 | 1118.9 | 1182.1 | 1225.2 | 1263.1 | 1268.2 |
| 50° | 2890.8 | 2409.8 | 1647.9 | 1230.2 | 1075.8 | 1012.5 | 1027.7 | 1098.6 | 1123.9 | 1139.1 | 1146.7 |
| 52.5° | 3004.7 | 2450.4 | 1617.5 | 1177.1 | 1012.5 | 921.4 | 941.7 | 1010.0 | 1027.7 | 1040.4 | 1042.9 |
| 55° | 3103.4 | 2483.3 | 1579.6 | 1126.5 | 944.2 | 835.3 | 860.7 | 926.5 | 944.2 | 959.4 | 959.4 |
| 57.5° | 3207.2 | 2513.6 | 1554.3 | 1083.4 | 870.8 | 764.5 | 782.2 | 848.0 | 873.3 | 878.4 | 886.0 |
| 60° | 3293.3 | 2541.5 | 1531.5 | 1042.9 | 802.4 | 701.2 | 713.8 | 772.1 | 802.4 | 805.0 | 810.0 |
| 62.5° | 3354.0 | 2559.2 | 1518.8 | 992.3 | 734.1 | 637.9 | 648.0 | 706.2 | 741.7 | 749.3 | 751.8 |
| 65° | 3392.0 | 2569.3 | 1496.0 | 926.5 | 675.9 | 584.7 | 584.7 | 643.0 | 678.4 | 696.1 | 701.2 |
| 67.5° | 3374.3 | 2551.6 | 1435.3 | 850.5 | 622.7 | 531.6 | 529.1 | 587.3 | 617.7 | 627.8 | 630.3 |
| 70° | 3237.6 | 2447.8 | 1311.2 | 756.9 | 567.0 | 483.5 | 478.4 | 531.6 | 559.4 | 536.6 | 539.2 |
| 72.5° | 2959.2 | 2212.4 | 1141.6 | 663.2 | 508.8 | 437.9 | 432.9 | 478.4 | 481.0 | 481.0 | 478.4 |
| 75° | 2493.4 | 1807.4 | 911.3 | 564.5 | 448.0 | 389.8 | 392.4 | 427.8 | 430.3 | 443.0 | 435.4 |
| 77.5° | 1911.2 | 1339.1 | 711.3 | 450.6 | 379.7 | 346.8 | 359.5 | 372.1 | 389.8 | 407.5 | 389.8 |
| 80° | 1389.7 | 923.9 | 493.6 | 336.7 | 293.6 | 293.6 | 298.7 | 311.4 | 336.7 | 354.4 | 336.7 |
| 82.5° | 594.9 | 407.5 | 227.8 | 167.1 | 144.3 | 141.8 | 144.3 | 144.3 | 177.2 | 182.3 | 159.5 |
| 85° | 45.6 | 38.0 | 27.8 | 27.8 | 22.8 | 12.7 | 12.7 | 10.1 | 7.6 | 7.6 | 7.6 |
| 87.5° | 10.1 | 7.6 | 7.6 | 7.6 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 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
 R_f: 75.5
 R_g: 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

REPORT NUMBER: SP1-2407-157-3

| 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)