

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: P867711

Luminaire Tested: **MEM2-HTN-SA-90-722-U-T4W-HSS**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867711
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-90-722-U-T4W-HSS
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 90W 70CRI 2200K
FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD
Light Source: (20) 2200K CCT, 70 CRI LEDs
Ballast/Driver: ELECTRONIC DRIVER

Summary

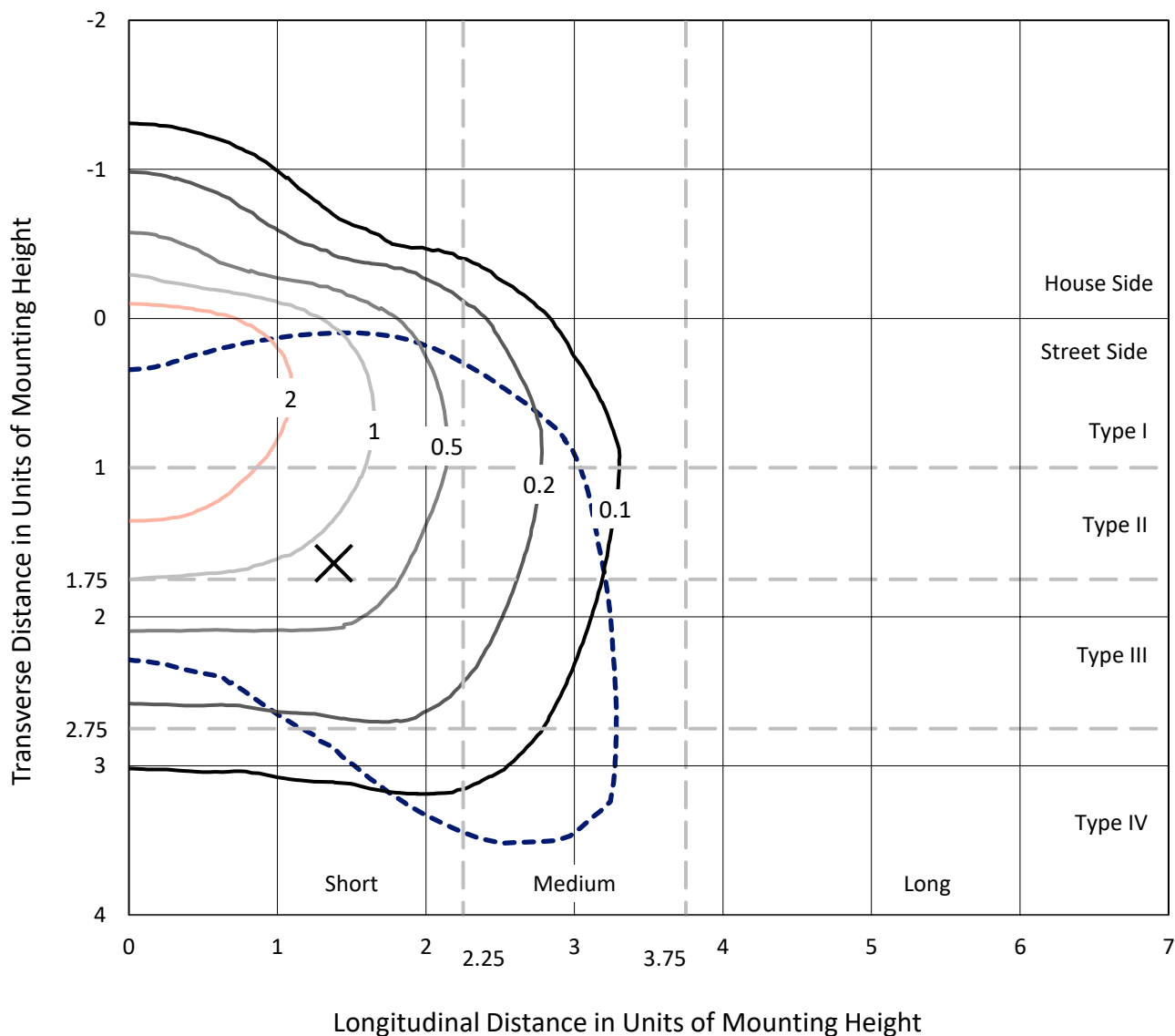
Lumens per Lamp: N/A
Luminaire Lumens: 7813.9 lumens
Efficiency: N/A
Efficacy: 86.8 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

Input Watts (W): 90
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 6.20%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P867711
 CATALOG NUMBER: MEM2-HTN-SA-90-722-U-T4W-HSS

Iso-Footcandle Lines of Horizontal Illumination

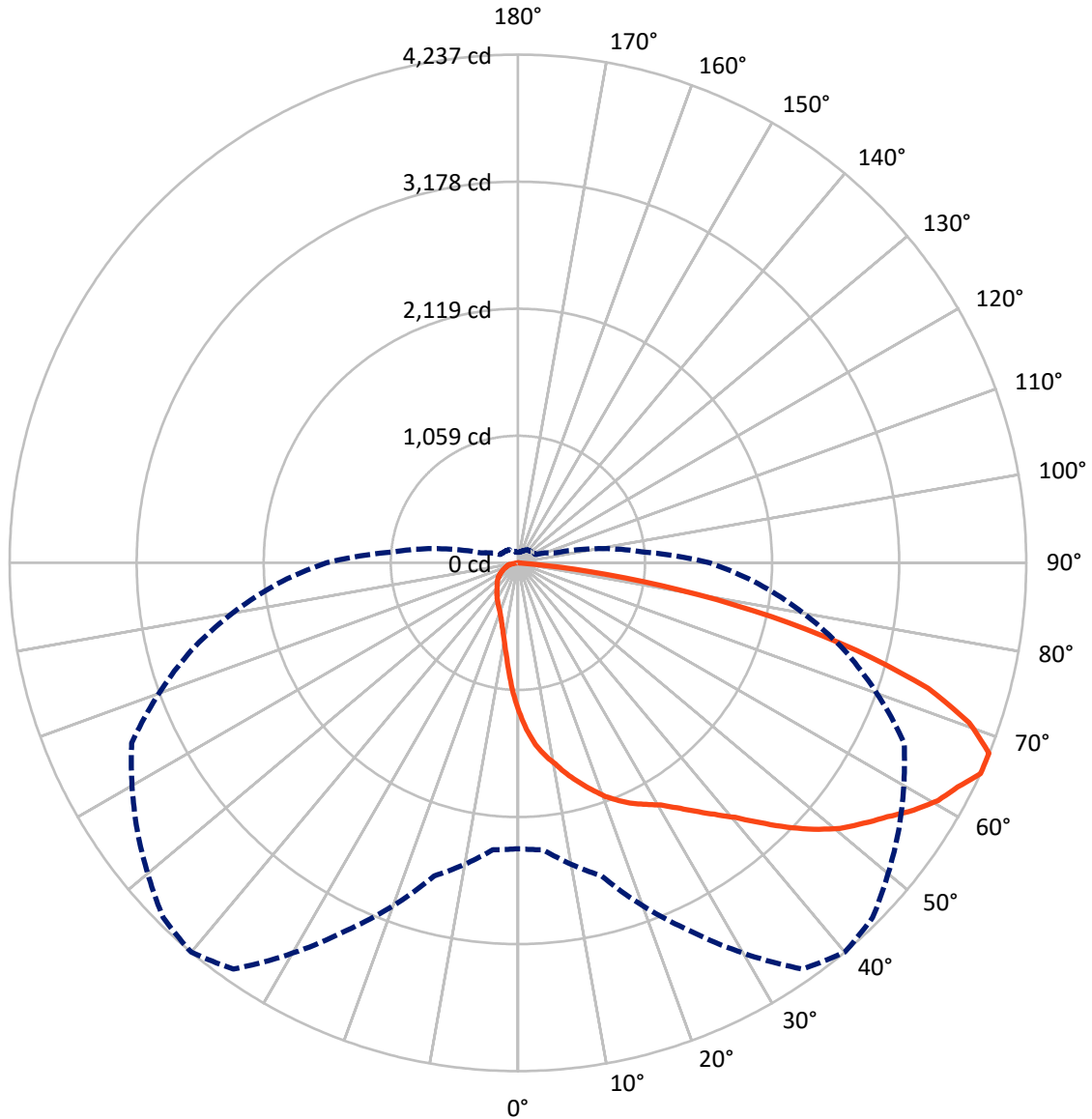
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.5 fc
 Type IV - Short - N/A

REPORT NUMBER: P867711
CATALOG NUMBER: MEM2-HTN-SA-90-722-U-T4W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P867711
 CATALOG NUMBER: MEM2-HTN-SA-90-722-U-T4W-HSS

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 935.5 | 0.0 | 935.5 |
| | % Fixture | 12.0 | 0.0 | 12.0 |
| Street Side | Lumens | 6878.4 | 0.0 | 6878.4 |
| | % Fixture | 88.0 | 0.0 | 88.0 |
| Total | Lumens | 7813.9 | 0.0 | 7813.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 116.3 | 1.5 |
| 10°-20° | 349.6 | 4.5 |
| 20°-30° | 601.4 | 7.7 |
| 30°-40° | 909.1 | 11.6 |
| 40°-50° | 1329.3 | 17.0 |
| 50°-60° | 1697.8 | 21.7 |
| 60°-70° | 1694.4 | 21.7 |
| 70°-80° | 993.6 | 12.7 |
| 80°-90° | 122.4 | 1.6 |
| 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° | 7813.9 | 100.0 |
| 0°-180° | 7813.9 | 100.0 |



REPORT NUMBER: P867711

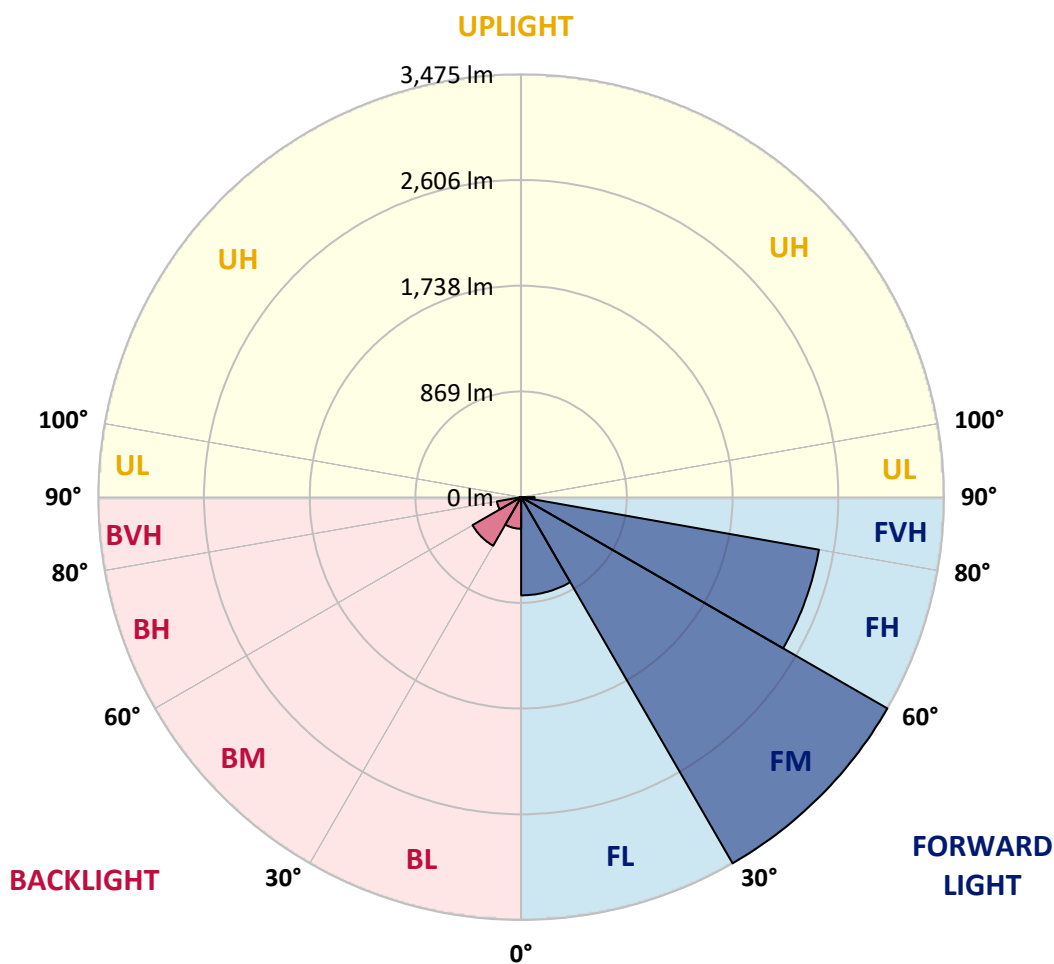
CATALOG NUMBER: MEM2-HTN-SA-90-722-U-T4W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 807.1 | 10.3 | | | |
| FM (30°-60°) | 3475.3 | 44.5 | | | |
| FH (60°-80°) | 2485.5 | 31.8 | | | G2/5000 |
| FVH (80°-90°) | 110.6 | 1.4 | | | G2/225 |
| BL (0°-30°) | 260.2 | 3.3 | B1/500 | | |
| BM (30°-60°) | 461.0 | 5.9 | B1/1000 | | |
| BH (60°-80°) | 202.5 | 2.6 | B1/500 | | G1/500 |
| BVH (80°-90°) | 11.8 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type IV Short





REPORT NUMBER: P867711

CATALOG NUMBER: MEM2-HTN-SA-90-722-U-T4W-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 40° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 |
| 2.5° | 1449.1 | 1442.5 | 1429.3 | 1418.3 | 1402.9 | 1389.6 | 1376.4 | 1352.2 | 1321.4 | 1294.9 | 1261.9 |
| 5° | 1592.2 | 1581.2 | 1572.4 | 1559.2 | 1532.8 | 1521.8 | 1513.0 | 1462.3 | 1409.5 | 1354.4 | 1281.7 |
| 7.5° | 1693.6 | 1702.4 | 1684.7 | 1664.9 | 1631.9 | 1618.7 | 1605.5 | 1554.8 | 1488.7 | 1409.5 | 1305.9 |
| 10° | 1810.3 | 1812.5 | 1790.5 | 1766.2 | 1731.0 | 1704.6 | 1686.9 | 1625.3 | 1552.6 | 1464.5 | 1332.4 |
| 12.5° | 1922.6 | 1922.6 | 1909.4 | 1874.1 | 1827.9 | 1803.7 | 1772.8 | 1702.4 | 1614.3 | 1510.8 | 1363.2 |
| 15° | 2012.9 | 2017.3 | 2006.3 | 1979.8 | 1929.2 | 1896.2 | 1865.3 | 1783.8 | 1671.5 | 1563.6 | 1387.4 |
| 17.5° | 2094.4 | 2092.2 | 2085.6 | 2061.3 | 2012.9 | 1986.5 | 1955.6 | 1865.3 | 1737.6 | 1605.5 | 1424.9 |
| 20° | 2149.4 | 2149.4 | 2147.2 | 2134.0 | 2098.8 | 2078.9 | 2041.5 | 1946.8 | 1810.3 | 1667.1 | 1464.5 |
| 22.5° | 2191.3 | 2189.1 | 2189.1 | 2191.3 | 2171.4 | 2151.6 | 2136.2 | 2041.5 | 1885.1 | 1720.0 | 1504.2 |
| 25° | 2226.5 | 2224.3 | 2230.9 | 2235.3 | 2226.5 | 2222.1 | 2204.5 | 2131.8 | 1977.6 | 1781.6 | 1543.8 |
| 27.5° | 2272.7 | 2279.4 | 2277.2 | 2277.2 | 2275.0 | 2279.4 | 2277.2 | 2215.5 | 2067.9 | 1847.7 | 1585.6 |
| 30° | 2345.4 | 2356.4 | 2349.8 | 2341.0 | 2341.0 | 2343.2 | 2354.2 | 2314.6 | 2173.6 | 1929.2 | 1631.9 |
| 32.5° | 2515.0 | 2504.0 | 2457.7 | 2426.9 | 2431.3 | 2433.5 | 2444.5 | 2422.5 | 2279.4 | 2021.7 | 1680.3 |
| 35° | 2708.8 | 2695.6 | 2644.9 | 2574.5 | 2550.2 | 2541.4 | 2539.2 | 2526.0 | 2393.9 | 2120.8 | 1737.6 |
| 37.5° | 2959.9 | 2964.3 | 2889.4 | 2788.1 | 2715.4 | 2660.3 | 2649.3 | 2620.7 | 2493.0 | 2211.1 | 1797.1 |
| 40° | 3215.3 | 3197.7 | 3133.8 | 3034.7 | 2891.6 | 2790.3 | 2757.3 | 2717.6 | 2605.3 | 2305.8 | 1854.3 |
| 42.5° | 3462.0 | 3428.9 | 3345.3 | 3237.3 | 3070.0 | 2959.9 | 2885.0 | 2834.3 | 2708.8 | 2409.3 | 1909.4 |
| 45° | 3783.5 | 3688.8 | 3539.1 | 3442.2 | 3232.9 | 3142.6 | 3074.4 | 2962.1 | 2832.1 | 2512.8 | 1975.4 |
| 47.5° | 4036.8 | 3854.0 | 3717.4 | 3675.6 | 3402.5 | 3318.8 | 3257.2 | 3100.8 | 2957.7 | 2629.5 | 2043.7 |
| 50° | 3990.5 | 3878.2 | 3845.2 | 3807.7 | 3530.2 | 3479.6 | 3422.3 | 3259.4 | 3085.4 | 2752.8 | 2109.8 |
| 52.5° | 3871.6 | 3884.8 | 3926.7 | 3862.8 | 3642.6 | 3607.3 | 3569.9 | 3428.9 | 3213.1 | 2854.2 | 2169.2 |
| 55° | 3776.9 | 3803.3 | 3915.6 | 3895.8 | 3776.9 | 3737.3 | 3710.8 | 3596.3 | 3336.4 | 2946.6 | 2219.9 |
| 57.5° | 3605.1 | 3583.1 | 3724.0 | 3953.1 | 3920.1 | 3889.2 | 3862.8 | 3772.5 | 3462.0 | 3012.7 | 2252.9 |
| 60° | 3334.2 | 3252.8 | 3442.2 | 3882.6 | 4019.2 | 4023.6 | 4008.1 | 3904.6 | 3563.3 | 3012.7 | 2235.3 |
| 62.5° | 2953.3 | 2876.2 | 3109.6 | 3647.0 | 4072.0 | 4113.9 | 4105.0 | 3950.9 | 3607.3 | 2946.6 | 2167.0 |
| 65° | 2382.9 | 2400.5 | 2702.2 | 3380.5 | 4133.7 | 4237.2 | 4182.1 | 3876.0 | 3552.3 | 2818.9 | 2012.9 |
| 67.5° | 1902.8 | 1955.6 | 2226.5 | 3034.7 | 4105.0 | 4235.0 | 4157.9 | 3664.6 | 3316.6 | 2640.5 | 1777.2 |
| 70° | 1502.0 | 1537.2 | 1761.8 | 2567.9 | 3854.0 | 3990.5 | 3893.6 | 3340.9 | 2918.0 | 2365.2 | 1477.7 |
| 72.5° | 1173.8 | 1206.8 | 1398.4 | 2054.7 | 3417.9 | 3576.5 | 3455.4 | 2904.8 | 2420.3 | 2006.3 | 1173.8 |
| 75° | 891.9 | 916.1 | 1059.3 | 1583.4 | 2722.0 | 2920.2 | 2832.1 | 2325.6 | 1889.6 | 1587.8 | 898.5 |
| 77.5° | 574.8 | 607.8 | 768.6 | 1109.9 | 1922.6 | 2160.4 | 2171.4 | 1737.6 | 1358.8 | 1147.4 | 660.7 |
| 80° | 381.0 | 394.2 | 493.3 | 722.3 | 1182.6 | 1367.6 | 1431.5 | 1173.8 | 867.7 | 731.2 | 475.7 |
| 82.5° | 158.6 | 176.2 | 235.6 | 363.4 | 592.4 | 594.6 | 680.5 | 495.5 | 352.4 | 310.5 | 200.4 |
| 85° | 4.4 | 8.8 | 6.6 | 17.6 | 15.4 | 24.2 | 28.6 | 39.6 | 28.6 | 30.8 | 30.8 |
| 87.5° | 0.0 | 0.0 | 2.2 | 2.2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 6.6 | 4.4 |
| 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: P867711

CATALOG NUMBER: MEM2-HTN-SA-90-722-U-T4W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 | 1242.1 |
| 2.5° | 1246.5 | 1226.7 | 1187.0 | 1156.2 | 1123.2 | 1098.9 | 1076.9 | 1052.7 | 1037.3 | 1039.5 | 1024.1 |
| 5° | 1246.5 | 1209.0 | 1129.8 | 1059.3 | 995.4 | 949.2 | 898.5 | 858.9 | 830.3 | 825.9 | 839.1 |
| 7.5° | 1253.1 | 1191.4 | 1072.5 | 966.8 | 878.7 | 806.0 | 753.2 | 713.5 | 693.7 | 680.5 | 678.3 |
| 10° | 1259.7 | 1178.2 | 1019.7 | 885.3 | 775.2 | 695.9 | 649.7 | 605.6 | 583.6 | 581.4 | 574.8 |
| 12.5° | 1264.1 | 1162.8 | 971.2 | 803.8 | 689.3 | 614.4 | 568.2 | 533.0 | 515.3 | 515.3 | 513.1 |
| 15° | 1279.5 | 1158.4 | 920.6 | 742.2 | 623.2 | 550.6 | 510.9 | 482.3 | 471.3 | 464.7 | 462.5 |
| 17.5° | 1292.7 | 1149.6 | 876.5 | 680.5 | 563.8 | 499.9 | 462.5 | 442.7 | 431.6 | 427.2 | 425.0 |
| 20° | 1312.6 | 1145.2 | 834.7 | 629.9 | 519.7 | 458.1 | 429.4 | 411.8 | 405.2 | 400.8 | 400.8 |
| 22.5° | 1332.4 | 1140.8 | 792.8 | 585.8 | 482.3 | 427.2 | 400.8 | 385.4 | 378.8 | 376.6 | 374.4 |
| 25° | 1356.6 | 1138.6 | 757.6 | 548.4 | 449.3 | 403.0 | 378.8 | 365.6 | 356.8 | 352.4 | 352.4 |
| 27.5° | 1380.8 | 1140.8 | 722.3 | 510.9 | 420.6 | 381.0 | 356.8 | 341.4 | 334.7 | 325.9 | 328.1 |
| 30° | 1413.9 | 1143.0 | 693.7 | 480.1 | 396.4 | 359.0 | 336.9 | 317.1 | 308.3 | 303.9 | 303.9 |
| 32.5° | 1446.9 | 1151.8 | 665.1 | 451.5 | 372.2 | 341.4 | 314.9 | 297.3 | 286.3 | 284.1 | 281.9 |
| 35° | 1482.1 | 1158.4 | 638.7 | 427.2 | 352.4 | 321.5 | 295.1 | 277.5 | 268.7 | 266.5 | 266.5 |
| 37.5° | 1521.8 | 1169.4 | 618.8 | 405.2 | 332.5 | 301.7 | 277.5 | 259.9 | 253.3 | 251.1 | 251.1 |
| 40° | 1563.6 | 1187.0 | 603.4 | 385.4 | 317.1 | 284.1 | 262.1 | 246.7 | 242.3 | 240.0 | 240.0 |
| 42.5° | 1605.5 | 1202.4 | 590.2 | 370.0 | 301.7 | 268.7 | 251.1 | 235.6 | 229.0 | 229.0 | 229.0 |
| 45° | 1645.1 | 1213.5 | 577.0 | 354.6 | 286.3 | 257.7 | 237.8 | 224.6 | 218.0 | 218.0 | 218.0 |
| 47.5° | 1680.3 | 1224.5 | 557.2 | 339.2 | 270.9 | 242.3 | 226.8 | 213.6 | 207.0 | 207.0 | 207.0 |
| 50° | 1717.8 | 1231.1 | 535.2 | 319.3 | 255.5 | 231.2 | 215.8 | 200.4 | 196.0 | 193.8 | 193.8 |
| 52.5° | 1748.6 | 1231.1 | 506.5 | 299.5 | 237.8 | 215.8 | 202.6 | 189.4 | 182.8 | 178.4 | 178.4 |
| 55° | 1770.6 | 1231.1 | 475.7 | 275.3 | 220.2 | 202.6 | 189.4 | 176.2 | 167.4 | 160.8 | 160.8 |
| 57.5° | 1783.8 | 1224.5 | 440.5 | 246.7 | 202.6 | 185.0 | 176.2 | 160.8 | 143.1 | 129.9 | 125.5 |
| 60° | 1772.8 | 1204.6 | 403.0 | 215.8 | 182.8 | 169.6 | 163.0 | 143.1 | 118.9 | 112.3 | 112.3 |
| 62.5° | 1726.6 | 1158.4 | 365.6 | 189.4 | 167.4 | 154.2 | 147.6 | 125.5 | 107.9 | 101.3 | 101.3 |
| 65° | 1596.7 | 1046.1 | 319.3 | 165.2 | 149.8 | 140.9 | 132.1 | 112.3 | 96.9 | 88.1 | 88.1 |
| 67.5° | 1407.3 | 902.9 | 266.5 | 145.4 | 134.3 | 127.7 | 121.1 | 101.3 | 85.9 | 77.1 | 77.1 |
| 70° | 1140.8 | 729.0 | 226.8 | 127.7 | 118.9 | 114.5 | 107.9 | 92.5 | 74.9 | 68.3 | 68.3 |
| 72.5° | 896.3 | 572.6 | 189.4 | 114.5 | 110.1 | 101.3 | 96.9 | 81.5 | 68.3 | 61.7 | 61.7 |
| 75° | 667.3 | 427.2 | 167.4 | 101.3 | 101.3 | 90.3 | 88.1 | 72.7 | 59.5 | 55.1 | 55.1 |
| 77.5° | 491.1 | 317.1 | 145.4 | 88.1 | 88.1 | 79.3 | 74.9 | 63.9 | 55.1 | 50.7 | 50.7 |
| 80° | 332.5 | 215.8 | 107.9 | 66.1 | 66.1 | 63.9 | 59.5 | 55.1 | 46.2 | 41.8 | 39.6 |
| 82.5° | 140.9 | 90.3 | 52.9 | 33.0 | 30.8 | 24.2 | 19.8 | 15.4 | 15.4 | 13.2 | 13.2 |
| 85° | 24.2 | 11.0 | 11.0 | 8.8 | 6.6 | 6.6 | 6.6 | 4.4 | 4.4 | 4.4 | 4.4 |
| 87.5° | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| 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)