

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: P869909

Luminaire Tested: **MEM2-HTN-SA-70-830-U-T2U**

Issue Date: 08/21/2024

Test Information

Test Method: LM-79-08
Report Number: P869909
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-70-830-U-T2U
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 70W 80CRI 3000K
FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC
Light Source: (20) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

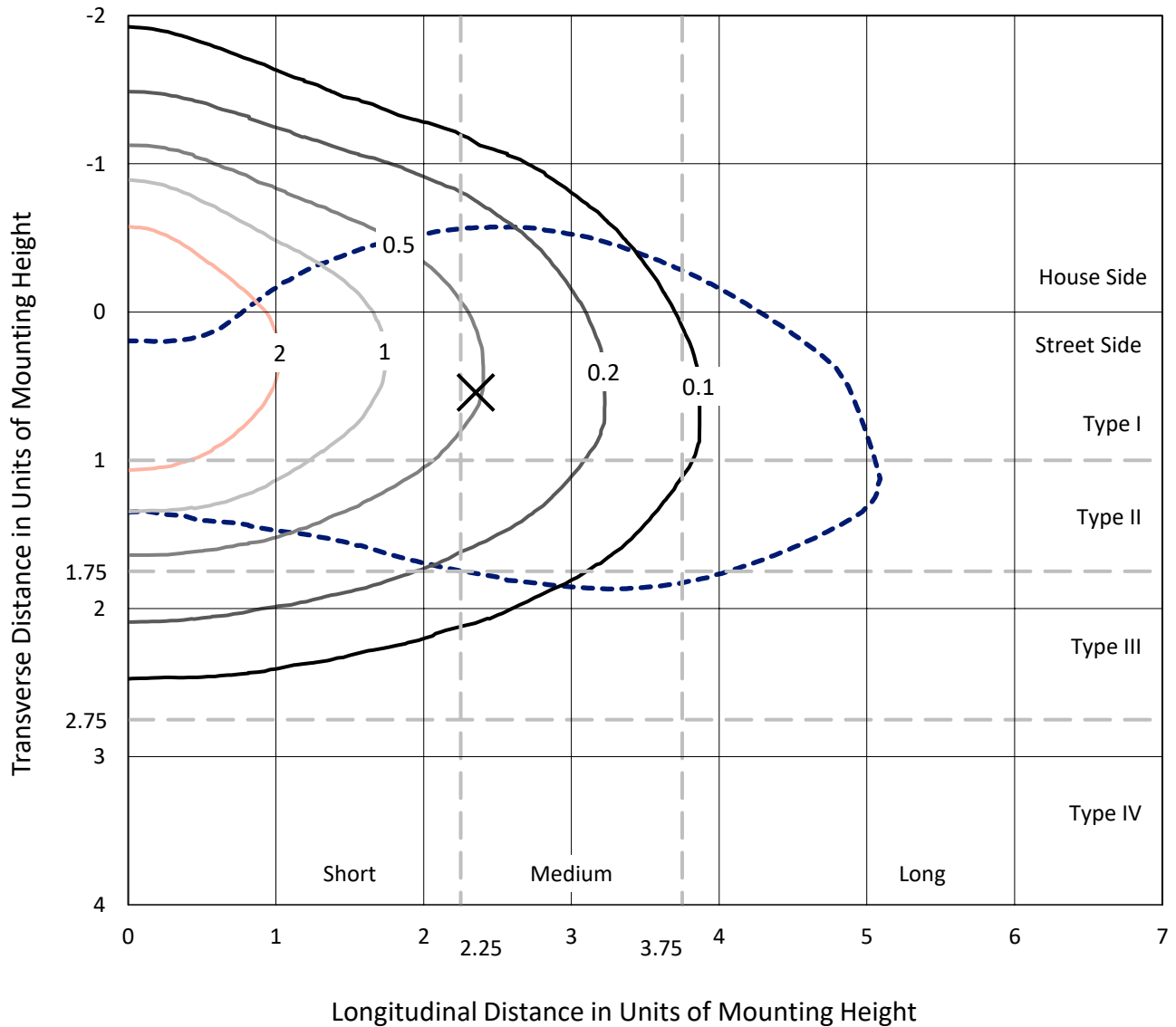
Lumens per Lamp: N/A
Luminaire Lumens: 8223.8 lumens
Efficiency: N/A
Efficacy: 134.8 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G2

Input Watts (W): 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

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Iso-Footcandle Lines of Horizontal Illumination

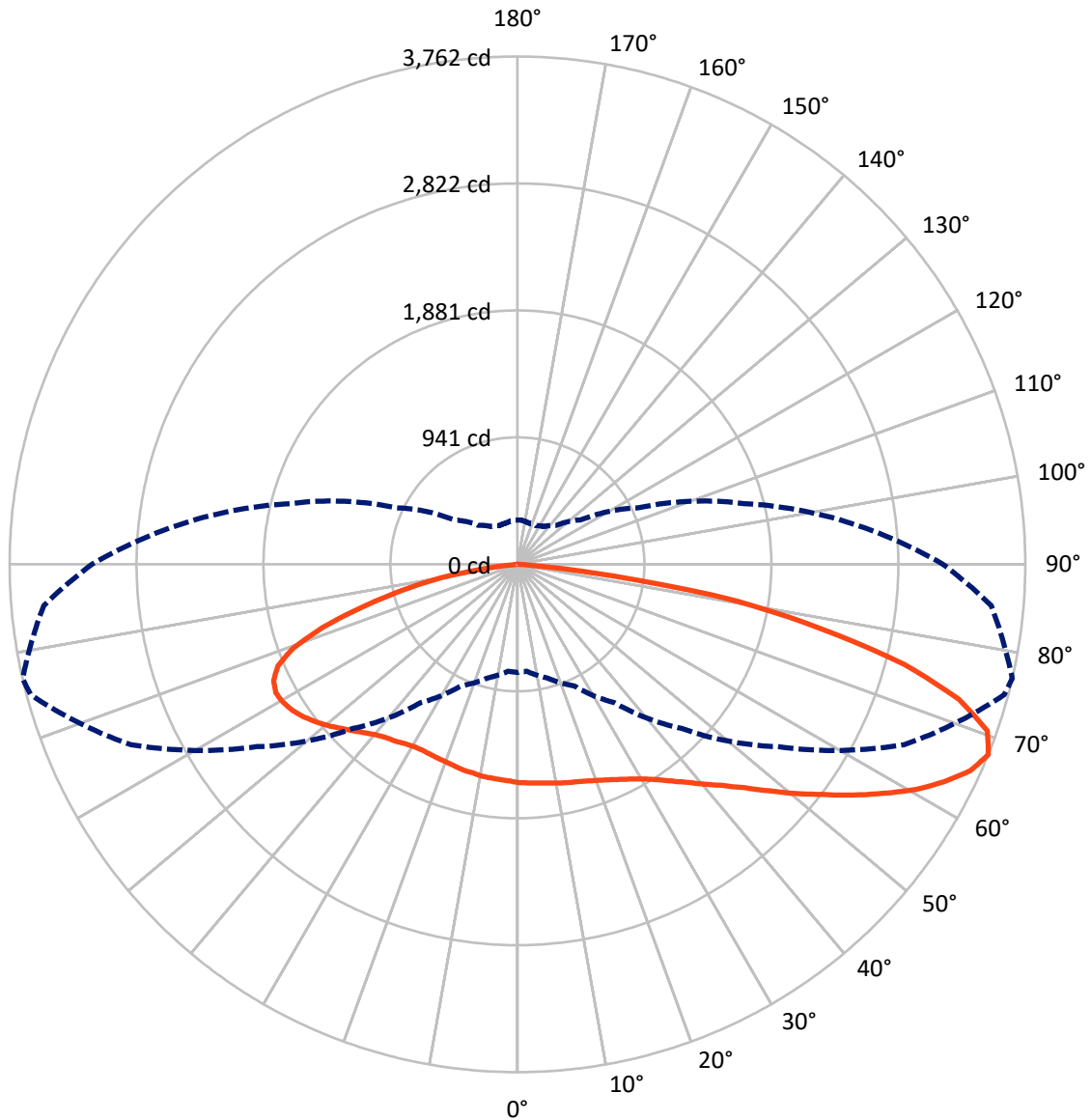
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.4 fc
 Type III - Medium - N/A

REPORT NUMBER: P869909
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Luminous Intensity Polar Plot



— Vertical Plane Through 77-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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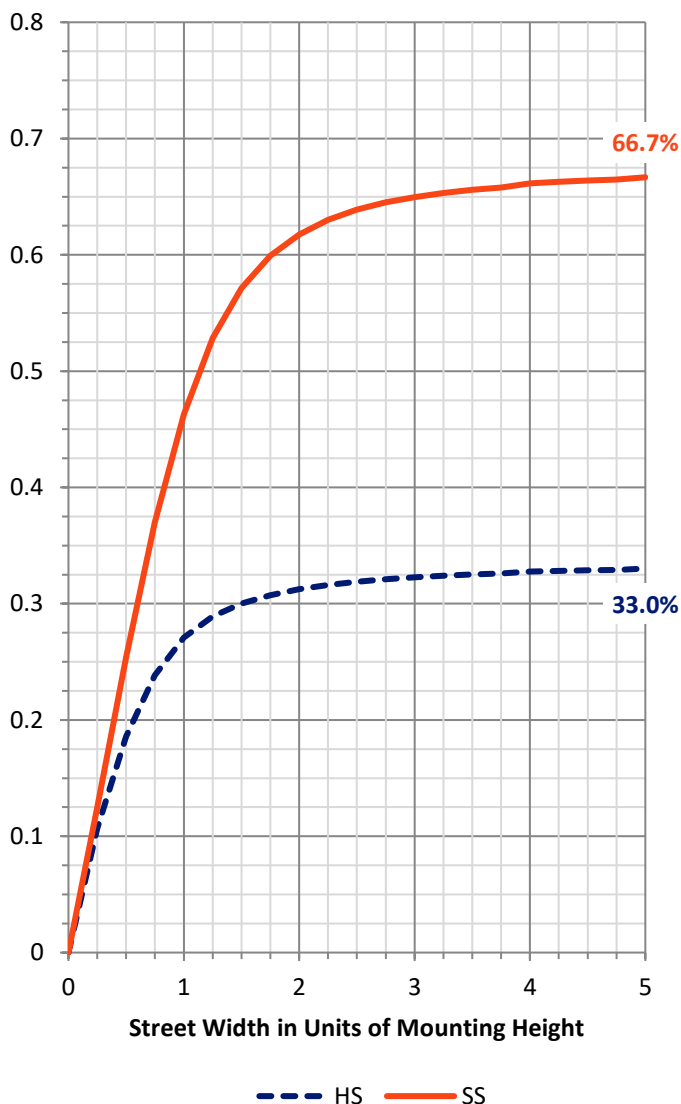
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2734.7 | 0.0 | 2734.7 |
| | % Fixture | 33.3 | 0.0 | 33.3 |
| Street Side | Lumens | 5489.1 | 0.0 | 5489.1 |
| | % Fixture | 66.7 | 0.0 | 66.7 |
| Total | Lumens | 8223.8 | 0.0 | 8223.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 155.4 | 1.9 |
| 10°-20° | 471.3 | 5.7 |
| 20°-30° | 794.6 | 9.7 |
| 30°-40° | 1127.6 | 13.7 |
| 40°-50° | 1426.6 | 17.3 |
| 50°-60° | 1562.8 | 19.0 |
| 60°-70° | 1510.7 | 18.4 |
| 70°-80° | 1016.0 | 12.4 |
| 80°-90° | 158.8 | 1.9 |
| 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° | 8223.8 | 100.0 |
| 0°-180° | 8223.8 | 100.0 |

Coefficient of Utilization



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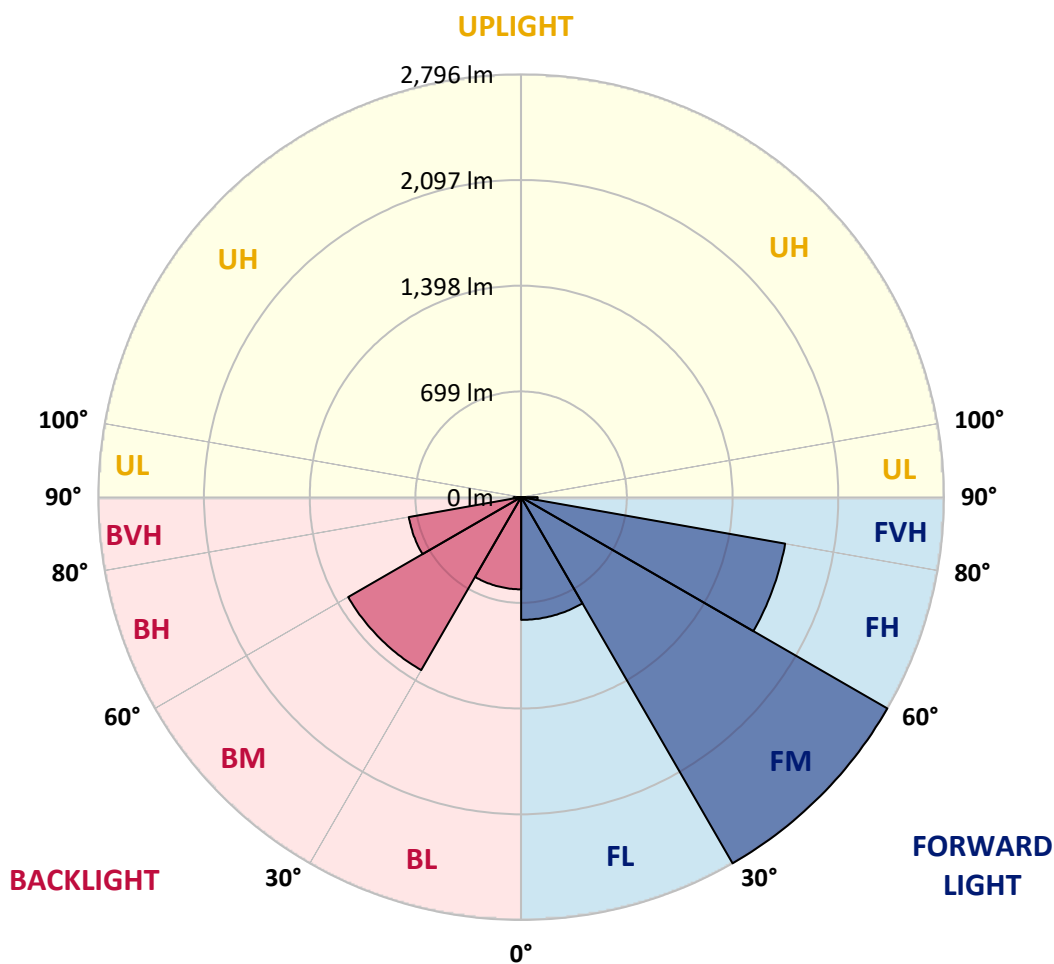
CATALOG NUMBER: MEM2-HTN-SA-70-830-U-T2U

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 811.7 | 9.9 | | | |
| FM | (30°-60°) | 2796.2 | 34.0 | | | |
| FH | (60°-80°) | 1772.5 | 21.6 | | | G1/1800 |
| FVH | (80°-90°) | 108.7 | 1.3 | | | G2/225 |
| BL | (0°-30°) | 609.6 | 7.4 | B2/1000 | | |
| BM | (30°-60°) | 1320.8 | 16.1 | B2/2500 | | |
| BH | (60°-80°) | 754.2 | 9.2 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 50.1 | 0.6 | | | 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





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 |
| 2.5° | 1652.7 | 1651.0 | 1642.9 | 1646.2 | 1636.4 | 1642.9 | 1633.2 | 1625.0 | 1623.4 | 1621.8 | 1623.4 |
| 5° | 1704.7 | 1696.6 | 1688.5 | 1683.6 | 1675.4 | 1672.2 | 1655.9 | 1639.7 | 1629.9 | 1628.3 | 1625.0 |
| 7.5° | 1764.9 | 1761.7 | 1750.3 | 1743.8 | 1721.0 | 1709.6 | 1686.8 | 1657.6 | 1642.9 | 1636.4 | 1628.3 |
| 10° | 1826.7 | 1834.9 | 1820.2 | 1807.2 | 1781.2 | 1756.8 | 1717.7 | 1680.3 | 1651.0 | 1647.8 | 1629.9 |
| 12.5° | 1903.2 | 1901.6 | 1891.8 | 1869.0 | 1838.1 | 1804.0 | 1756.8 | 1704.7 | 1665.7 | 1659.2 | 1633.2 |
| 15° | 1971.5 | 1969.9 | 1956.9 | 1935.7 | 1895.0 | 1852.8 | 1789.3 | 1729.1 | 1680.3 | 1670.6 | 1639.7 |
| 17.5° | 2034.9 | 2031.7 | 2023.6 | 2000.8 | 1950.4 | 1898.3 | 1836.5 | 1756.8 | 1698.2 | 1686.8 | 1644.5 |
| 20° | 2090.2 | 2093.5 | 2083.7 | 2061.0 | 2013.8 | 1958.5 | 1880.4 | 1792.6 | 1721.0 | 1708.0 | 1659.2 |
| 22.5° | 2150.4 | 2152.1 | 2147.2 | 2139.0 | 2078.9 | 2020.3 | 1935.7 | 1833.2 | 1747.0 | 1734.0 | 1675.4 |
| 25° | 2213.9 | 2215.5 | 2218.7 | 2213.9 | 2145.5 | 2082.1 | 1992.6 | 1883.7 | 1782.8 | 1764.9 | 1698.2 |
| 27.5° | 2287.1 | 2288.7 | 2295.2 | 2285.4 | 2212.2 | 2145.5 | 2056.1 | 1937.3 | 1820.2 | 1800.7 | 1717.7 |
| 30° | 2370.0 | 2376.5 | 2371.7 | 2368.4 | 2283.8 | 2218.7 | 2119.5 | 1992.6 | 1869.0 | 1844.6 | 1751.9 |
| 32.5° | 2469.3 | 2467.6 | 2457.9 | 2448.1 | 2361.9 | 2293.6 | 2191.1 | 2064.2 | 1929.2 | 1901.6 | 1807.2 |
| 35° | 2540.8 | 2540.8 | 2526.2 | 2521.3 | 2441.6 | 2370.0 | 2269.2 | 2143.9 | 1997.5 | 1971.5 | 1865.8 |
| 37.5° | 2584.7 | 2591.3 | 2579.9 | 2583.1 | 2506.7 | 2440.0 | 2347.3 | 2225.3 | 2072.4 | 2049.6 | 1937.3 |
| 40° | 2601.0 | 2617.3 | 2627.0 | 2640.1 | 2563.6 | 2506.7 | 2430.2 | 2313.1 | 2168.3 | 2142.3 | 2023.6 |
| 42.5° | 2604.3 | 2628.7 | 2662.8 | 2690.5 | 2604.3 | 2557.1 | 2509.9 | 2402.6 | 2262.7 | 2239.9 | 2117.9 |
| 45° | 2588.0 | 2576.6 | 2659.6 | 2662.8 | 2627.0 | 2597.8 | 2579.9 | 2509.9 | 2399.3 | 2361.9 | 2235.0 |
| 47.5° | 2464.4 | 2451.4 | 2474.1 | 2578.2 | 2599.4 | 2615.7 | 2651.4 | 2635.2 | 2535.9 | 2506.7 | 2370.0 |
| 50° | 2264.3 | 2257.8 | 2348.9 | 2461.1 | 2531.1 | 2614.0 | 2710.0 | 2755.5 | 2687.2 | 2669.3 | 2540.8 |
| 52.5° | 1934.1 | 1916.2 | 2101.6 | 2319.6 | 2441.6 | 2597.8 | 2750.7 | 2879.2 | 2858.0 | 2832.0 | 2687.2 |
| 55° | 1724.2 | 1724.2 | 1849.5 | 2121.1 | 2327.7 | 2539.2 | 2776.7 | 3009.3 | 3046.7 | 3017.4 | 2854.8 |
| 57.5° | 1499.8 | 1517.7 | 1647.8 | 1834.9 | 2163.4 | 2431.8 | 2773.4 | 3118.3 | 3228.9 | 3201.2 | 3032.1 |
| 60° | 1307.8 | 1322.5 | 1397.3 | 1586.0 | 1969.9 | 2290.3 | 2737.6 | 3207.8 | 3398.1 | 3388.3 | 3188.2 |
| 62.5° | 1112.6 | 1130.5 | 1190.7 | 1368.0 | 1714.5 | 2127.7 | 2662.8 | 3256.6 | 3557.5 | 3547.7 | 3346.0 |
| 65° | 956.5 | 958.1 | 1018.3 | 1166.3 | 1459.1 | 1930.8 | 2531.1 | 3246.8 | 3681.1 | 3687.6 | 3479.4 |
| 67.5° | 800.3 | 795.4 | 873.5 | 993.9 | 1250.9 | 1719.4 | 2355.4 | 3160.6 | 3733.2 | 3762.4 | 3523.3 |
| 70° | 588.8 | 595.4 | 704.3 | 837.7 | 1057.3 | 1475.4 | 2109.8 | 2993.0 | 3648.6 | 3694.1 | 3422.5 |
| 72.5° | 442.4 | 455.5 | 561.2 | 699.5 | 883.3 | 1231.4 | 1841.4 | 2701.9 | 3412.7 | 3419.2 | 3115.0 |
| 75° | 359.5 | 362.7 | 457.1 | 580.7 | 723.9 | 987.4 | 1478.6 | 2256.2 | 2885.7 | 2960.5 | 2646.6 |
| 77.5° | 305.8 | 302.6 | 348.1 | 468.5 | 584.0 | 788.9 | 1114.3 | 1716.1 | 2265.9 | 2300.1 | 2072.4 |
| 80° | 260.3 | 258.6 | 274.9 | 379.0 | 457.1 | 562.8 | 762.9 | 1195.6 | 1616.9 | 1654.3 | 1472.1 |
| 82.5° | 136.6 | 146.4 | 143.1 | 234.2 | 258.6 | 296.1 | 366.0 | 543.3 | 706.0 | 715.7 | 676.7 |
| 85° | 6.5 | 6.5 | 6.5 | 9.8 | 16.3 | 26.0 | 50.4 | 50.4 | 55.3 | 105.7 | 120.4 |
| 87.5° | 1.6 | 1.6 | 3.3 | 3.3 | 3.3 | 4.9 | 4.9 | 6.5 | 6.5 | 6.5 | 6.5 |
| 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: P869909

CATALOG NUMBER: MEM2-HTN-SA-70-830-U-T2U

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 | 1616.9 |
| 2.5° | 1620.1 | 1613.6 | 1603.9 | 1605.5 | 1603.9 | 1603.9 | 1595.7 | 1589.2 | 1587.6 | 1590.9 | 1597.4 |
| 5° | 1621.8 | 1612.0 | 1597.4 | 1592.5 | 1587.6 | 1584.4 | 1571.3 | 1561.6 | 1556.7 | 1560.0 | 1561.6 |
| 7.5° | 1621.8 | 1607.1 | 1590.9 | 1581.1 | 1568.1 | 1558.3 | 1543.7 | 1530.7 | 1524.2 | 1525.8 | 1529.0 |
| 10° | 1618.5 | 1602.2 | 1589.2 | 1569.7 | 1548.6 | 1537.2 | 1514.4 | 1498.1 | 1490.0 | 1491.6 | 1483.5 |
| 12.5° | 1618.5 | 1600.6 | 1574.6 | 1556.7 | 1527.4 | 1503.0 | 1485.1 | 1467.2 | 1460.7 | 1454.2 | 1451.0 |
| 15° | 1620.1 | 1597.4 | 1571.3 | 1533.9 | 1499.8 | 1473.7 | 1451.0 | 1439.6 | 1429.8 | 1426.6 | 1428.2 |
| 17.5° | 1620.1 | 1597.4 | 1558.3 | 1514.4 | 1475.4 | 1442.8 | 1423.3 | 1410.3 | 1407.1 | 1403.8 | 1403.8 |
| 20° | 1628.3 | 1599.0 | 1546.9 | 1494.9 | 1446.1 | 1411.9 | 1394.0 | 1385.9 | 1385.9 | 1381.0 | 1381.0 |
| 22.5° | 1641.3 | 1602.2 | 1540.4 | 1478.6 | 1421.7 | 1384.3 | 1364.8 | 1355.0 | 1359.9 | 1356.6 | 1355.0 |
| 25° | 1655.9 | 1613.6 | 1532.3 | 1455.9 | 1389.2 | 1350.1 | 1330.6 | 1324.1 | 1322.5 | 1314.3 | 1325.7 |
| 27.5° | 1667.3 | 1621.8 | 1527.4 | 1433.1 | 1359.9 | 1314.3 | 1289.9 | 1278.5 | 1270.4 | 1273.7 | 1270.4 |
| 30° | 1698.2 | 1644.5 | 1529.0 | 1413.6 | 1327.3 | 1272.0 | 1242.8 | 1229.7 | 1226.5 | 1226.5 | 1226.5 |
| 32.5° | 1740.5 | 1673.8 | 1540.4 | 1405.4 | 1296.4 | 1231.4 | 1195.6 | 1182.6 | 1179.3 | 1172.8 | 1176.1 |
| 35° | 1794.2 | 1717.7 | 1558.3 | 1392.4 | 1272.0 | 1184.2 | 1145.2 | 1127.3 | 1122.4 | 1115.9 | 1115.9 |
| 37.5° | 1854.4 | 1761.7 | 1571.3 | 1385.9 | 1239.5 | 1135.4 | 1091.5 | 1068.7 | 1065.5 | 1058.9 | 1062.2 |
| 40° | 1930.8 | 1821.8 | 1592.5 | 1372.9 | 1202.1 | 1091.5 | 1032.9 | 995.5 | 1003.6 | 1006.9 | 1013.4 |
| 42.5° | 2017.0 | 1898.3 | 1625.0 | 1359.9 | 1172.8 | 1045.9 | 959.7 | 922.3 | 932.1 | 928.8 | 935.3 |
| 45° | 2134.2 | 1987.8 | 1665.7 | 1355.0 | 1137.0 | 990.6 | 884.9 | 842.6 | 839.4 | 834.5 | 837.7 |
| 47.5° | 2256.2 | 2095.1 | 1704.7 | 1345.2 | 1098.0 | 922.3 | 800.3 | 746.6 | 733.6 | 727.1 | 720.6 |
| 50° | 2383.0 | 2202.5 | 1750.3 | 1338.7 | 1045.9 | 845.9 | 715.7 | 653.9 | 629.5 | 621.4 | 613.2 |
| 52.5° | 2526.2 | 2318.0 | 1789.3 | 1322.5 | 989.0 | 766.2 | 639.3 | 569.3 | 541.7 | 525.4 | 527.0 |
| 55° | 2677.5 | 2423.7 | 1825.1 | 1302.9 | 923.9 | 691.3 | 562.8 | 504.3 | 476.6 | 471.7 | 471.7 |
| 57.5° | 2817.4 | 2532.7 | 1851.1 | 1268.8 | 858.9 | 618.1 | 499.4 | 449.0 | 435.9 | 442.4 | 442.4 |
| 60° | 2960.5 | 2620.5 | 1864.1 | 1231.4 | 792.2 | 556.3 | 455.5 | 414.8 | 408.3 | 421.3 | 422.9 |
| 62.5° | 3076.0 | 2690.5 | 1860.9 | 1179.3 | 719.0 | 502.6 | 413.2 | 380.6 | 383.9 | 406.7 | 411.5 |
| 65° | 3159.0 | 2724.6 | 1820.2 | 1101.2 | 649.0 | 455.5 | 375.8 | 344.8 | 344.8 | 361.1 | 366.0 |
| 67.5° | 3152.4 | 2680.7 | 1738.9 | 992.3 | 574.2 | 408.3 | 341.6 | 317.2 | 317.2 | 328.6 | 327.0 |
| 70° | 3019.1 | 2529.4 | 1584.4 | 860.5 | 501.0 | 367.6 | 312.3 | 294.4 | 292.8 | 297.7 | 296.1 |
| 72.5° | 2698.6 | 2222.0 | 1343.6 | 710.8 | 432.7 | 327.0 | 283.0 | 266.8 | 263.5 | 257.0 | 252.1 |
| 75° | 2226.9 | 1825.1 | 1049.2 | 566.1 | 366.0 | 287.9 | 255.4 | 240.7 | 227.7 | 235.9 | 231.0 |
| 77.5° | 1727.5 | 1400.5 | 780.8 | 439.2 | 297.7 | 250.5 | 227.7 | 211.5 | 208.2 | 237.5 | 227.7 |
| 80° | 1260.7 | 967.9 | 551.4 | 313.9 | 231.0 | 203.3 | 190.3 | 177.3 | 224.5 | 300.9 | 299.3 |
| 82.5° | 559.6 | 466.8 | 252.1 | 149.7 | 107.4 | 89.5 | 74.8 | 84.6 | 141.5 | 138.3 | 143.1 |
| 85° | 50.4 | 52.1 | 27.7 | 17.9 | 11.4 | 9.8 | 6.5 | 6.5 | 4.9 | 4.9 | 4.9 |
| 87.5° | 6.5 | 6.5 | 4.9 | 4.9 | 3.3 | 3.3 | 3.3 | 3.3 | 1.6 | 1.6 | 1.6 |
| 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: SP1-2407-157-7

Test Date: 09/05/2024

Luminaire Tested: MEM2-HTN-SA-40-830-U-5WQ

Data in this report applies to families of products including MEM2-HTN-SA-40-830-U-5WQ

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-7
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 09/05/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-SA-40-830-U-5WQ**
 Description: Epic Modern Light Square 40W 5WQ Optic

Spectral Parameters

CCT (K): 3126
 CIE u': 0.2465
 CIE v': 0.5182
 Duv: -0.0004
 CIE x: 0.4277
 CIE y: 0.3997
 CIE z: 0.1727
 Peak Wavelength (nm): 601
 Dominant Wavelength (nm): 582
 Purity: 48.31913
 Rf: 84.4
 Rg: 94.7

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 82.6 | | |
| R1: | 81.4 | R9: | 5.1 |
| R2: | 92.2 | R10: | 82.2 |
| R3: | 94.9 | R11: | 79.8 |
| R4: | 80.1 | R12: | 70.4 |
| R5: | 81.8 | R13: | 84.2 |
| R6: | 90.5 | R14: | 97.9 |
| R7: | 81.8 | R15: | 73.6 |
| R8: | 58.0 | | |



Test Conditions

Stabilization Time: 22M
 Operation Time: 1H 22M
 Sphere Temperature (°C): 24.3

REPORT NUMBER: SP1-2407-157-7

| 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: SP1-2407-157-7

CIE 1931 Chromaticity Diagram



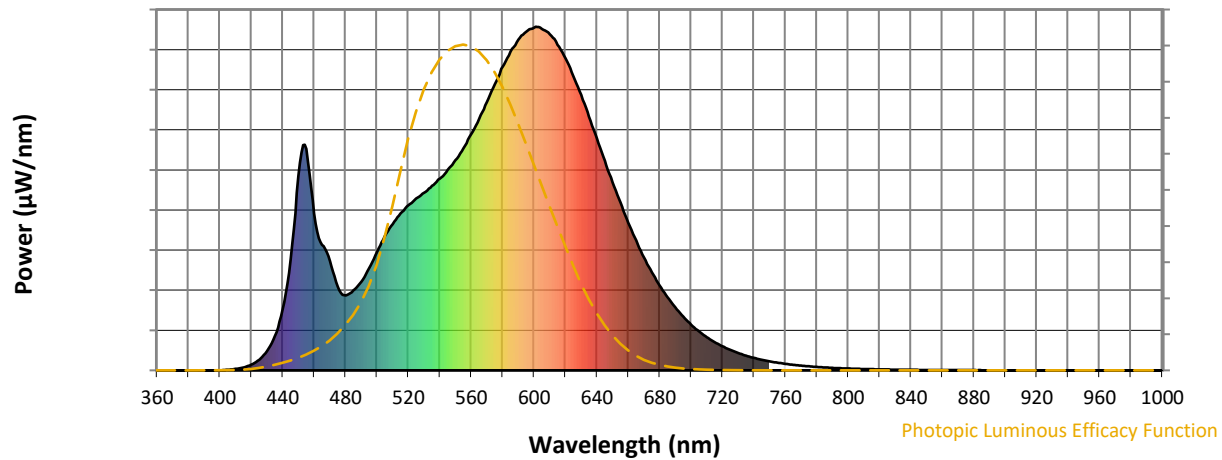
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-7

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 | 258 | NR | 620 | 908 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 297 | NR | 625 | 857 | NR | 755 | 22 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 345 | NR | 630 | 801 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 391 | NR | 635 | 738 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 426 | NR | 640 | 675 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 456 | NR | 645 | 610 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 480 | NR | 650 | 547 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 500 | NR | 655 | 488 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 517 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 538 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 558 | NR | 670 | 328 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 584 | NR | 675 | 285 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 16 | NR | 550 | 611 | NR | 680 | 247 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 31 | NR | 555 | 646 | NR | 685 | 212 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 56 | NR | 560 | 687 | NR | 690 | 183 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 101 | NR | 565 | 731 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 178 | NR | 570 | 780 | NR | 700 | 133 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 323 | NR | 575 | 832 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 566 | NR | 580 | 883 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 645 | NR | 585 | 927 | NR | 715 | 82 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 457 | NR | 590 | 963 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 365 | NR | 595 | 985 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 317 | NR | 600 | 998 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 244 | NR | 605 | 994 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 218 | NR | 610 | 978 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 233 | NR | 615 | 947 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-7

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR S/P: 1.42

| 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 | 258 | NR | 620 | 908 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 297 | NR | 625 | 857 | NR | 755 | 22 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 345 | NR | 630 | 801 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 391 | NR | 635 | 738 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 426 | NR | 640 | 675 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 456 | NR | 645 | 610 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 480 | NR | 650 | 547 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 500 | NR | 655 | 488 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 517 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 538 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 558 | NR | 670 | 328 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 584 | NR | 675 | 285 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 16 | NR | 550 | 611 | NR | 680 | 247 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 31 | NR | 555 | 646 | NR | 685 | 212 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 56 | NR | 560 | 687 | NR | 690 | 183 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 101 | NR | 565 | 731 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 178 | NR | 570 | 780 | NR | 700 | 133 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 323 | NR | 575 | 832 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 566 | NR | 580 | 883 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 645 | NR | 585 | 927 | NR | 715 | 82 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 457 | NR | 590 | 963 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 365 | NR | 595 | 985 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 317 | NR | 600 | 998 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 244 | NR | 605 | 994 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 218 | NR | 610 | 978 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 233 | NR | 615 | 947 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.79

| 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 | 258 | NR | 620 | 908 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 297 | NR | 625 | 857 | NR | 755 | 22 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 345 | NR | 630 | 801 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 391 | NR | 635 | 738 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 426 | NR | 640 | 675 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 456 | NR | 645 | 610 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 480 | NR | 650 | 547 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 500 | NR | 655 | 488 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 517 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 538 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 558 | NR | 670 | 328 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 584 | NR | 675 | 285 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 16 | NR | 550 | 611 | NR | 680 | 247 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 31 | NR | 555 | 646 | NR | 685 | 212 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 56 | NR | 560 | 687 | NR | 690 | 183 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 101 | NR | 565 | 731 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 178 | NR | 570 | 780 | NR | 700 | 133 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 323 | NR | 575 | 832 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 566 | NR | 580 | 883 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 645 | NR | 585 | 927 | NR | 715 | 82 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 457 | NR | 590 | 963 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 365 | NR | 595 | 985 | NR | 725 | 59 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 317 | NR | 600 | 998 | NR | 730 | 50 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 244 | NR | 605 | 994 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 218 | NR | 610 | 978 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 233 | NR | 615 | 947 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 84.4$
 $R_g = 94.7$
 $CIE R_a = 82.6$
 $R_9 = 5.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 86 | CES51 = 93 | CES76 = 82 |
| CES02 = 63 | CES27 = 92 | CES52 = 93 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 70 | CES29 = 92 | CES54 = 89 | CES79 = 90 |
| CES05 = 49 | CES30 = 91 | CES55 = 86 | CES80 = 89 |
| CES06 = 51 | CES31 = 93 | CES56 = 85 | CES81 = 72 |
| CES07 = 42 | CES32 = 85 | CES57 = 83 | CES82 = 95 |
| CES08 = 41 | CES33 = 97 | CES58 = 84 | CES83 = 94 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 91 |
| CES10 = 76 | CES35 = 96 | CES60 = 90 | CES85 = 74 |
| CES11 = 59 | CES36 = 81 | CES61 = 87 | CES86 = 68 |
| CES12 = 65 | CES37 = 96 | CES62 = 83 | CES87 = 84 |
| CES13 = 43 | CES38 = 86 | CES63 = 87 | CES88 = 88 |
| CES14 = 74 | CES39 = 98 | CES64 = 79 | CES89 = 75 |
| CES15 = 71 | CES40 = 96 | CES65 = 78 | CES90 = 89 |
| CES16 = 47 | CES41 = 96 | CES66 = 77 | CES91 = 73 |
| CES17 = 50 | CES42 = 97 | CES67 = 76 | CES92 = 63 |
| CES18 = 56 | CES43 = 91 | CES68 = 80 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 85 | CES94 = 61 |
| CES20 = 66 | CES45 = 93 | CES70 = 78 | CES95 = 73 |
| CES21 = 87 | CES46 = 90 | CES71 = 74 | CES96 = 84 |
| CES22 = 79 | CES47 = 94 | CES72 = 91 | CES97 = 88 |
| CES23 = 92 | CES48 = 83 | CES73 = 74 | CES98 = 85 |
| CES24 = 91 | CES49 = 91 | CES74 = 90 | CES99 = 76 |
| CES25 = 72 | CES50 = 93 | CES75 = 78 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)