

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: P867541

Luminaire Tested: **MEM2-HTN-SA-60-727-U-T2U**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867541
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-60-727-U-T2U
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 60W 70CRI 2700K
FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC
Light Source: (10) 2700K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

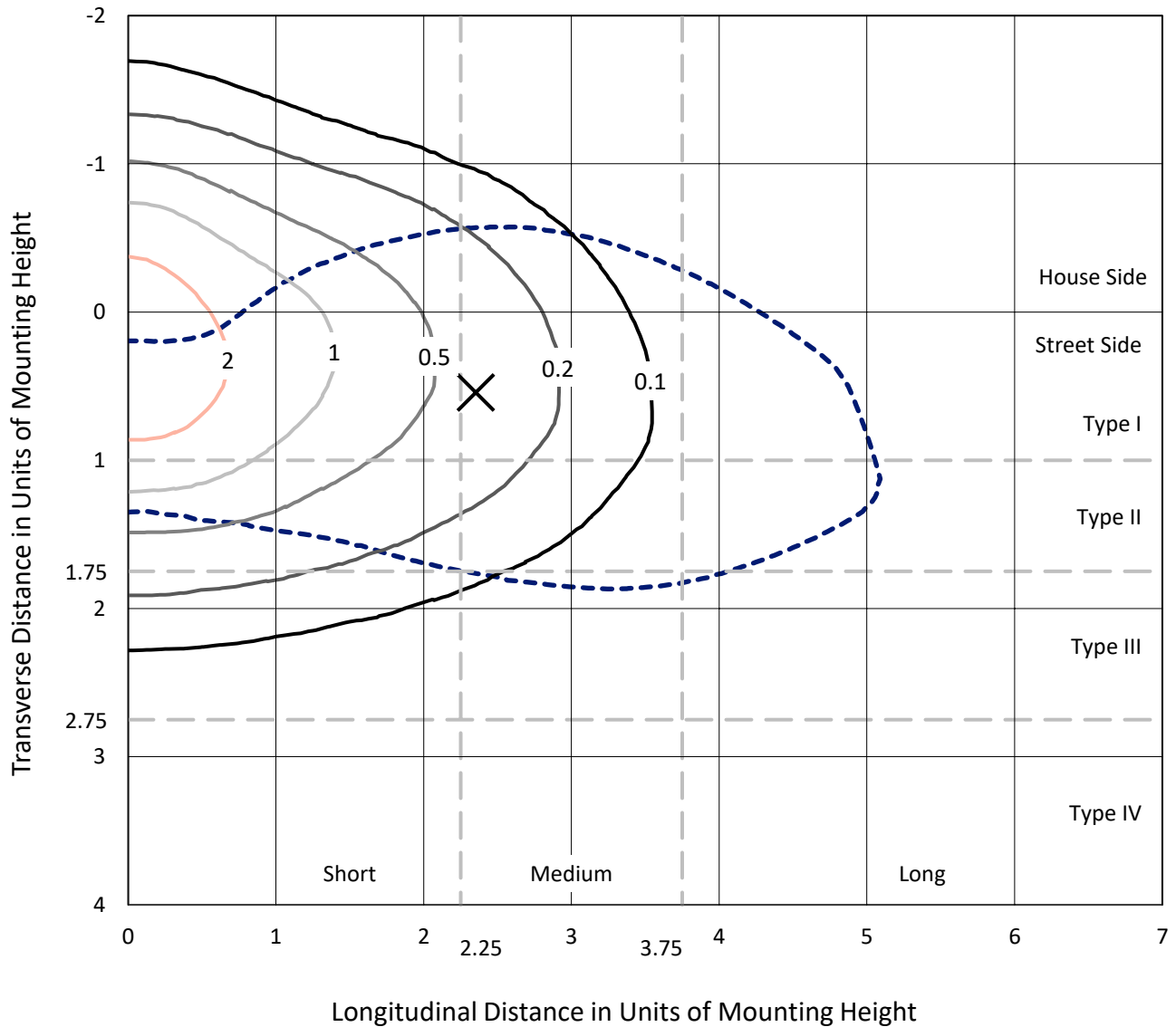
Lumens per Lamp: N/A
Luminaire Lumens: 5820.1 lumens
Efficiency: N/A
Efficacy: 132.3 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G2

Input Watts (W): 44
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 6.91%
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

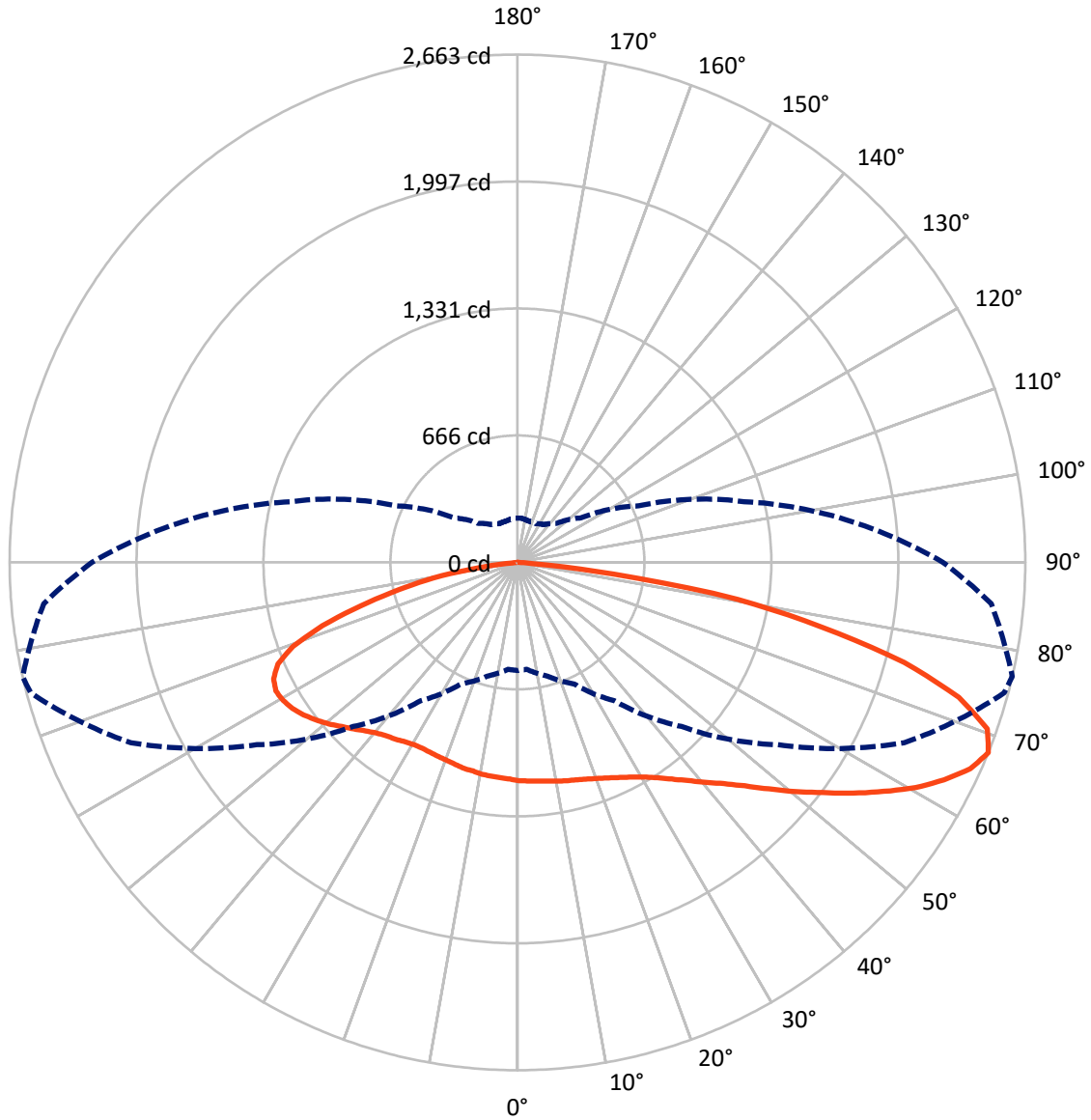
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.1 fc
 Type III - Medium - N/A

REPORT NUMBER: P867541
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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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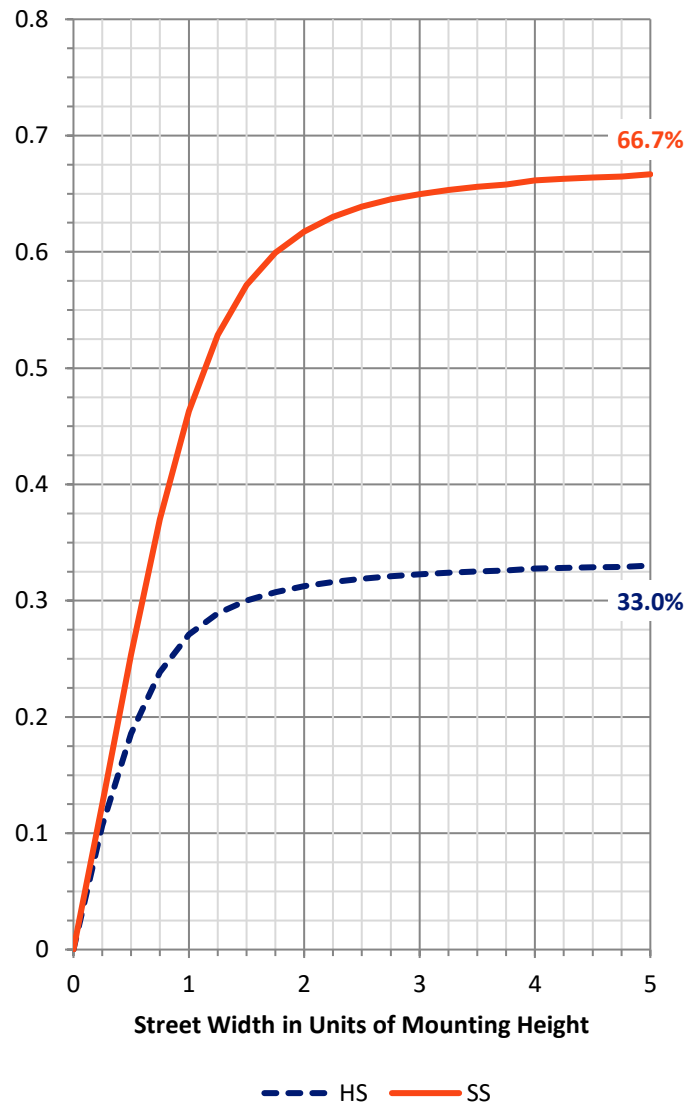
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1935.4 | 0.0 | 1935.4 |
| | % Fixture | 33.3 | 0.0 | 33.3 |
| Street Side | Lumens | 3884.7 | 0.0 | 3884.7 |
| | % Fixture | 66.7 | 0.0 | 66.7 |
| Total | Lumens | 5820.1 | 0.0 | 5820.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 110.0 | 1.9 |
| 10°-20° | 333.6 | 5.7 |
| 20°-30° | 562.3 | 9.7 |
| 30°-40° | 798.0 | 13.7 |
| 40°-50° | 1009.6 | 17.3 |
| 50°-60° | 1106.0 | 19.0 |
| 60°-70° | 1069.1 | 18.4 |
| 70°-80° | 719.1 | 12.4 |
| 80°-90° | 112.4 | 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° | 5820.1 | 100.0 |
| 0°-180° | 5820.1 | 100.0 |



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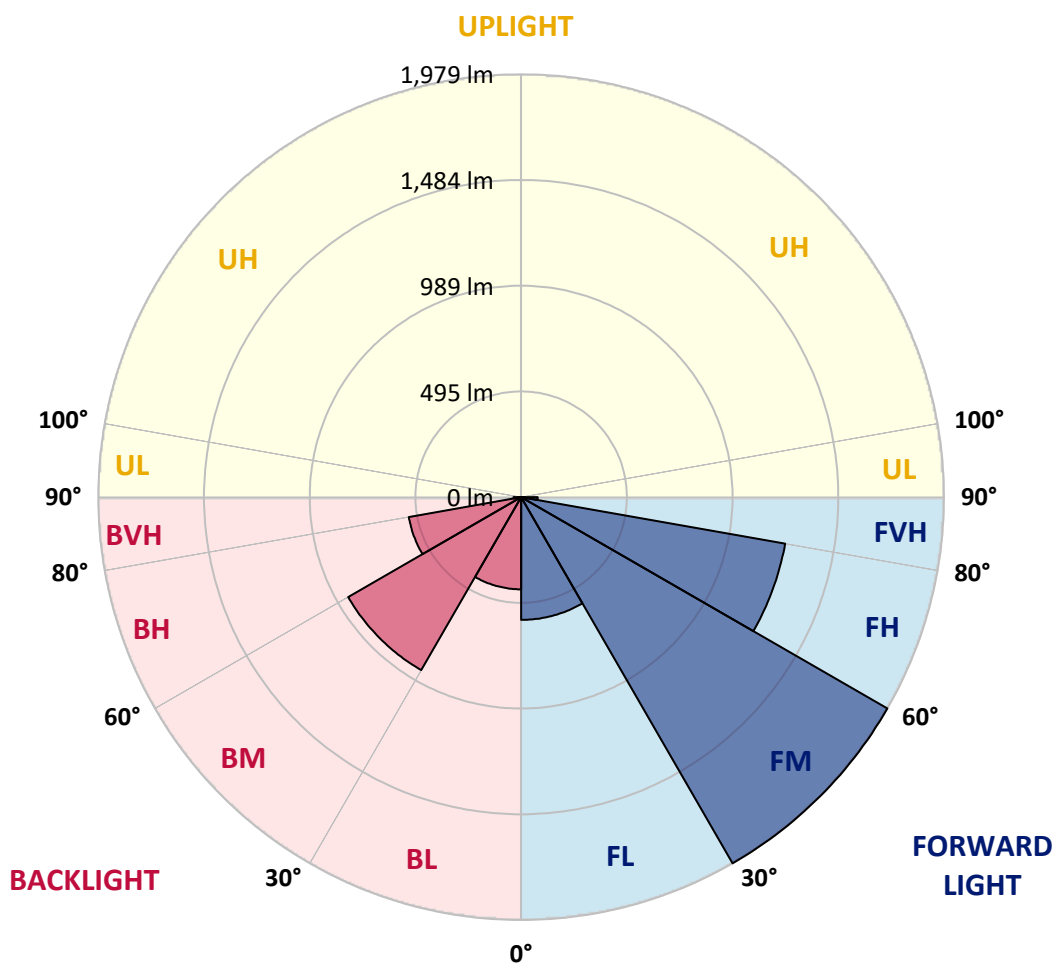
CATALOG NUMBER: MEM2-HTN-SA-60-727-U-T2U

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 574.4 | 9.9 | | | |
| FM (30°-60°) | 1978.9 | 34.0 | | | |
| FH (60°-80°) | 1254.4 | 21.6 | | | G1/1800 |
| FVH (80°-90°) | 76.9 | 1.3 | | | G1/100 |
| BL (0°-30°) | 431.4 | 7.4 | B1/500 | | |
| BM (30°-60°) | 934.7 | 16.1 | B1/1000 | | |
| BH (60°-80°) | 533.8 | 9.2 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 35.4 | 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





REPORT NUMBER: P867541

CATALOG NUMBER: MEM2-HTN-SA-60-727-U-T2U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 |
| 2.5° | 1169.6 | 1168.5 | 1162.7 | 1165.0 | 1158.1 | 1162.7 | 1155.8 | 1150.0 | 1148.9 | 1147.7 | 1148.9 |
| 5° | 1206.4 | 1200.7 | 1194.9 | 1191.5 | 1185.7 | 1183.4 | 1171.9 | 1160.4 | 1153.5 | 1152.3 | 1150.0 |
| 7.5° | 1249.0 | 1246.7 | 1238.7 | 1234.1 | 1218.0 | 1209.9 | 1193.8 | 1173.1 | 1162.7 | 1158.1 | 1152.3 |
| 10° | 1292.8 | 1298.5 | 1288.2 | 1279.0 | 1260.6 | 1243.3 | 1215.7 | 1189.2 | 1168.5 | 1166.2 | 1153.5 |
| 12.5° | 1346.9 | 1345.7 | 1338.8 | 1322.7 | 1300.8 | 1276.7 | 1243.3 | 1206.4 | 1178.8 | 1174.2 | 1155.8 |
| 15° | 1395.2 | 1394.1 | 1384.9 | 1369.9 | 1341.1 | 1311.2 | 1266.3 | 1223.7 | 1189.2 | 1182.3 | 1160.4 |
| 17.5° | 1440.1 | 1437.8 | 1432.1 | 1416.0 | 1380.3 | 1343.4 | 1299.7 | 1243.3 | 1201.8 | 1193.8 | 1163.9 |
| 20° | 1479.3 | 1481.6 | 1474.7 | 1458.6 | 1425.2 | 1386.0 | 1330.8 | 1268.6 | 1218.0 | 1208.7 | 1174.2 |
| 22.5° | 1521.9 | 1523.0 | 1519.6 | 1513.8 | 1471.2 | 1429.8 | 1369.9 | 1297.4 | 1236.4 | 1227.2 | 1185.7 |
| 25° | 1566.8 | 1567.9 | 1570.2 | 1566.8 | 1518.4 | 1473.5 | 1410.2 | 1333.1 | 1261.7 | 1249.0 | 1201.8 |
| 27.5° | 1618.6 | 1619.7 | 1624.3 | 1617.4 | 1565.6 | 1518.4 | 1455.1 | 1371.1 | 1288.2 | 1274.4 | 1215.7 |
| 30° | 1677.3 | 1681.9 | 1678.4 | 1676.1 | 1616.3 | 1570.2 | 1500.0 | 1410.2 | 1322.7 | 1305.4 | 1239.8 |
| 32.5° | 1747.5 | 1746.4 | 1739.4 | 1732.5 | 1671.5 | 1623.2 | 1550.7 | 1460.9 | 1365.3 | 1345.7 | 1279.0 |
| 35° | 1798.2 | 1798.2 | 1787.8 | 1784.3 | 1727.9 | 1677.3 | 1605.9 | 1517.3 | 1413.7 | 1395.2 | 1320.4 |
| 37.5° | 1829.2 | 1833.8 | 1825.8 | 1828.1 | 1774.0 | 1726.8 | 1661.2 | 1574.8 | 1466.6 | 1450.5 | 1371.1 |
| 40° | 1840.8 | 1852.3 | 1859.2 | 1868.4 | 1814.3 | 1774.0 | 1719.9 | 1637.0 | 1534.5 | 1516.1 | 1432.1 |
| 42.5° | 1843.1 | 1860.3 | 1884.5 | 1904.1 | 1843.1 | 1809.7 | 1776.3 | 1700.3 | 1601.3 | 1585.2 | 1498.8 |
| 45° | 1831.5 | 1823.5 | 1882.2 | 1884.5 | 1859.2 | 1838.4 | 1825.8 | 1776.3 | 1698.0 | 1671.5 | 1581.7 |
| 47.5° | 1744.1 | 1734.8 | 1751.0 | 1824.6 | 1839.6 | 1851.1 | 1876.4 | 1864.9 | 1794.7 | 1774.0 | 1677.3 |
| 50° | 1602.5 | 1597.9 | 1662.3 | 1741.7 | 1791.3 | 1850.0 | 1917.9 | 1950.1 | 1901.8 | 1889.1 | 1798.2 |
| 52.5° | 1368.8 | 1356.1 | 1487.3 | 1641.6 | 1727.9 | 1838.4 | 1946.7 | 2037.6 | 2022.6 | 2004.2 | 1901.8 |
| 55° | 1220.3 | 1220.3 | 1308.9 | 1501.2 | 1647.4 | 1797.0 | 1965.1 | 2129.7 | 2156.2 | 2135.5 | 2020.3 |
| 57.5° | 1061.4 | 1074.1 | 1166.2 | 1298.5 | 1531.1 | 1721.0 | 1962.8 | 2206.8 | 2285.1 | 2265.5 | 2145.8 |
| 60° | 925.6 | 935.9 | 988.9 | 1122.4 | 1394.1 | 1620.9 | 1937.5 | 2270.1 | 2404.8 | 2397.9 | 2256.3 |
| 62.5° | 787.4 | 800.1 | 842.7 | 968.2 | 1213.4 | 1505.8 | 1884.5 | 2304.7 | 2517.7 | 2510.7 | 2368.0 |
| 65° | 676.9 | 678.1 | 720.6 | 825.4 | 1032.6 | 1366.5 | 1791.3 | 2297.8 | 2605.1 | 2609.7 | 2462.4 |
| 67.5° | 566.4 | 562.9 | 618.2 | 703.4 | 885.3 | 1216.8 | 1666.9 | 2236.8 | 2642.0 | 2662.7 | 2493.5 |
| 70° | 416.7 | 421.3 | 498.5 | 592.9 | 748.3 | 1044.1 | 1493.1 | 2118.2 | 2582.1 | 2614.4 | 2422.1 |
| 72.5° | 313.1 | 322.3 | 397.2 | 495.0 | 625.1 | 871.5 | 1303.1 | 1912.1 | 2415.2 | 2419.8 | 2204.5 |
| 75° | 254.4 | 256.7 | 323.5 | 411.0 | 512.3 | 698.8 | 1046.4 | 1596.7 | 2042.2 | 2095.2 | 1873.0 |
| 77.5° | 216.4 | 214.1 | 246.4 | 331.5 | 413.3 | 558.3 | 788.6 | 1214.5 | 1603.6 | 1627.8 | 1466.6 |
| 80° | 184.2 | 183.0 | 194.6 | 268.2 | 323.5 | 398.3 | 539.9 | 846.1 | 1144.3 | 1170.8 | 1041.8 |
| 82.5° | 96.7 | 103.6 | 101.3 | 165.8 | 183.0 | 209.5 | 259.0 | 384.5 | 499.6 | 506.5 | 478.9 |
| 85° | 4.6 | 4.6 | 4.6 | 6.9 | 11.5 | 18.4 | 35.7 | 35.7 | 39.1 | 74.8 | 85.2 |
| 87.5° | 1.2 | 1.2 | 2.3 | 2.3 | 2.3 | 3.5 | 3.5 | 4.6 | 4.6 | 4.6 | 4.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P867541

CATALOG NUMBER: MEM2-HTN-SA-60-727-U-T2U

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 | 1144.3 |
| 2.5° | 1146.6 | 1142.0 | 1135.1 | 1136.2 | 1135.1 | 1135.1 | 1129.3 | 1124.7 | 1123.6 | 1125.9 | 1130.5 |
| 5° | 1147.7 | 1140.8 | 1130.5 | 1127.0 | 1123.6 | 1121.3 | 1112.0 | 1105.1 | 1101.7 | 1104.0 | 1105.1 |
| 7.5° | 1147.7 | 1137.4 | 1125.9 | 1119.0 | 1109.7 | 1102.8 | 1092.5 | 1083.3 | 1078.7 | 1079.8 | 1082.1 |
| 10° | 1145.4 | 1133.9 | 1124.7 | 1110.9 | 1095.9 | 1087.9 | 1071.8 | 1060.2 | 1054.5 | 1055.6 | 1049.9 |
| 12.5° | 1145.4 | 1132.8 | 1114.4 | 1101.7 | 1081.0 | 1063.7 | 1051.0 | 1038.4 | 1033.8 | 1029.2 | 1026.9 |
| 15° | 1146.6 | 1130.5 | 1112.0 | 1085.6 | 1061.4 | 1043.0 | 1026.9 | 1018.8 | 1011.9 | 1009.6 | 1010.7 |
| 17.5° | 1146.6 | 1130.5 | 1102.8 | 1071.8 | 1044.1 | 1021.1 | 1007.3 | 998.1 | 995.8 | 993.5 | 993.5 |
| 20° | 1152.3 | 1131.6 | 1094.8 | 1057.9 | 1023.4 | 999.2 | 986.6 | 980.8 | 980.8 | 977.4 | 977.4 |
| 22.5° | 1161.6 | 1133.9 | 1090.2 | 1046.4 | 1006.1 | 979.7 | 965.8 | 958.9 | 962.4 | 960.1 | 958.9 |
| 25° | 1171.9 | 1142.0 | 1084.4 | 1030.3 | 983.1 | 955.5 | 941.7 | 937.1 | 935.9 | 930.2 | 938.2 |
| 27.5° | 1180.0 | 1147.7 | 1081.0 | 1014.2 | 962.4 | 930.2 | 912.9 | 904.8 | 899.1 | 901.4 | 899.1 |
| 30° | 1201.8 | 1163.9 | 1082.1 | 1000.4 | 939.4 | 900.2 | 879.5 | 870.3 | 868.0 | 868.0 | 868.0 |
| 32.5° | 1231.8 | 1184.6 | 1090.2 | 994.6 | 917.5 | 871.5 | 846.1 | 836.9 | 834.6 | 830.0 | 832.3 |
| 35° | 1269.8 | 1215.7 | 1102.8 | 985.4 | 900.2 | 838.1 | 810.4 | 797.8 | 794.3 | 789.7 | 789.7 |
| 37.5° | 1312.4 | 1246.7 | 1112.0 | 980.8 | 877.2 | 803.5 | 772.4 | 756.3 | 754.0 | 749.4 | 751.7 |
| 40° | 1366.5 | 1289.3 | 1127.0 | 971.6 | 850.7 | 772.4 | 731.0 | 704.5 | 710.3 | 712.6 | 717.2 |
| 42.5° | 1427.5 | 1343.4 | 1150.0 | 962.4 | 830.0 | 740.2 | 679.2 | 652.7 | 659.6 | 657.3 | 661.9 |
| 45° | 1510.4 | 1406.8 | 1178.8 | 958.9 | 804.7 | 701.1 | 626.2 | 596.3 | 594.0 | 590.6 | 592.9 |
| 47.5° | 1596.7 | 1482.7 | 1206.4 | 952.0 | 777.1 | 652.7 | 566.4 | 528.4 | 519.2 | 514.6 | 510.0 |
| 50° | 1686.5 | 1558.7 | 1238.7 | 947.4 | 740.2 | 598.6 | 506.5 | 462.8 | 445.5 | 439.8 | 434.0 |
| 52.5° | 1787.8 | 1640.4 | 1266.3 | 935.9 | 699.9 | 542.2 | 452.4 | 402.9 | 383.3 | 371.8 | 373.0 |
| 55° | 1894.9 | 1715.3 | 1291.6 | 922.1 | 653.9 | 489.3 | 398.3 | 356.9 | 337.3 | 333.8 | 333.8 |
| 57.5° | 1993.9 | 1792.4 | 1310.1 | 897.9 | 607.8 | 437.5 | 353.4 | 317.7 | 308.5 | 313.1 | 313.1 |
| 60° | 2095.2 | 1854.6 | 1319.3 | 871.5 | 560.6 | 393.7 | 322.3 | 293.6 | 288.9 | 298.2 | 299.3 |
| 62.5° | 2176.9 | 1904.1 | 1317.0 | 834.6 | 508.8 | 355.7 | 292.4 | 269.4 | 271.7 | 287.8 | 291.3 |
| 65° | 2235.6 | 1928.2 | 1288.2 | 779.4 | 459.3 | 322.3 | 265.9 | 244.1 | 244.1 | 255.6 | 259.0 |
| 67.5° | 2231.0 | 1897.2 | 1230.6 | 702.2 | 406.4 | 288.9 | 241.7 | 224.5 | 224.5 | 232.5 | 231.4 |
| 70° | 2136.6 | 1790.1 | 1121.3 | 609.0 | 354.6 | 260.2 | 221.0 | 208.4 | 207.2 | 210.7 | 209.5 |
| 72.5° | 1909.8 | 1572.5 | 950.9 | 503.1 | 306.2 | 231.4 | 200.3 | 188.8 | 186.5 | 181.9 | 178.4 |
| 75° | 1576.0 | 1291.6 | 742.5 | 400.6 | 259.0 | 203.8 | 180.7 | 170.4 | 161.2 | 166.9 | 163.5 |
| 77.5° | 1222.6 | 991.2 | 552.6 | 310.8 | 210.7 | 177.3 | 161.2 | 149.7 | 147.4 | 168.1 | 161.2 |
| 80° | 892.2 | 685.0 | 390.3 | 222.2 | 163.5 | 143.9 | 134.7 | 125.5 | 158.9 | 213.0 | 211.8 |
| 82.5° | 396.0 | 330.4 | 178.4 | 105.9 | 76.0 | 63.3 | 53.0 | 59.9 | 100.2 | 97.9 | 101.3 |
| 85° | 35.7 | 36.8 | 19.6 | 12.7 | 8.1 | 6.9 | 4.6 | 4.6 | 3.5 | 3.5 | 3.5 |
| 87.5° | 4.6 | 4.6 | 3.5 | 3.5 | 2.3 | 2.3 | 2.3 | 2.3 | 1.2 | 1.2 | 1.2 |
| 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: SP1-2407-157-3

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

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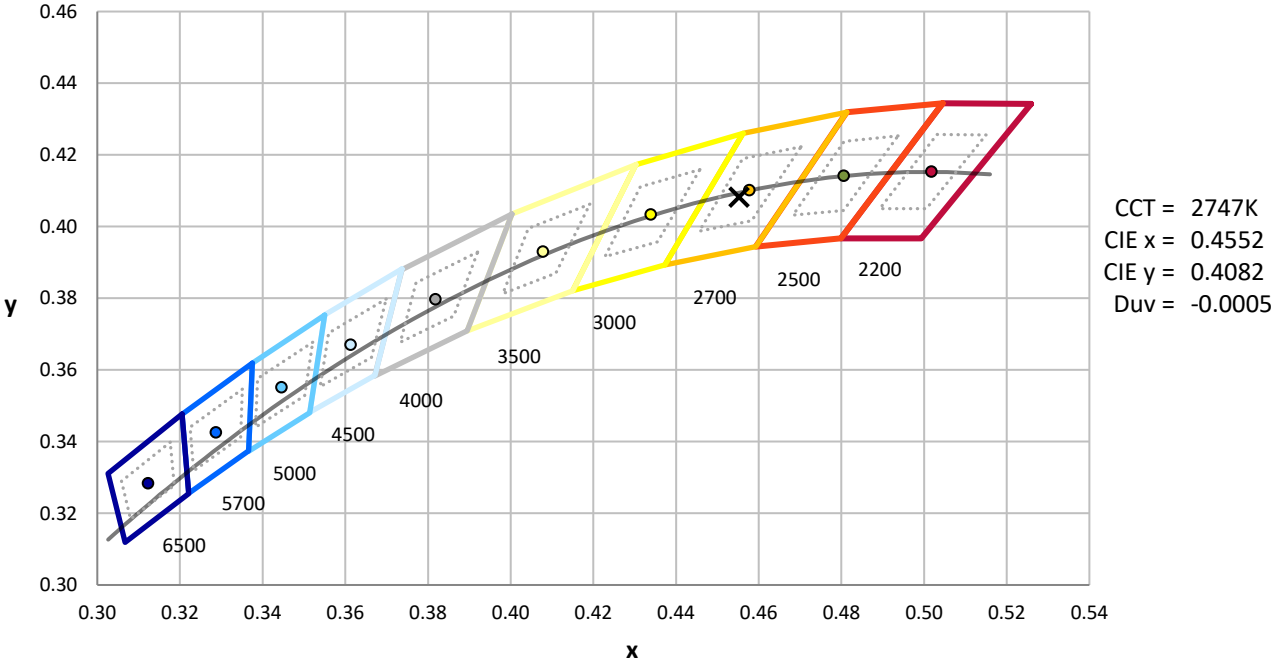
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 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)