

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: P867953

Luminaire Tested: **MEM2-HSN-SA-30-722-U-T2U**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867953
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-30-722-U-T2U
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 30W 70CRI 2200K
FITXURE w/ TYPE II URBAN DISTRIBUTION OPTIC
Light Source: (10) 2200K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

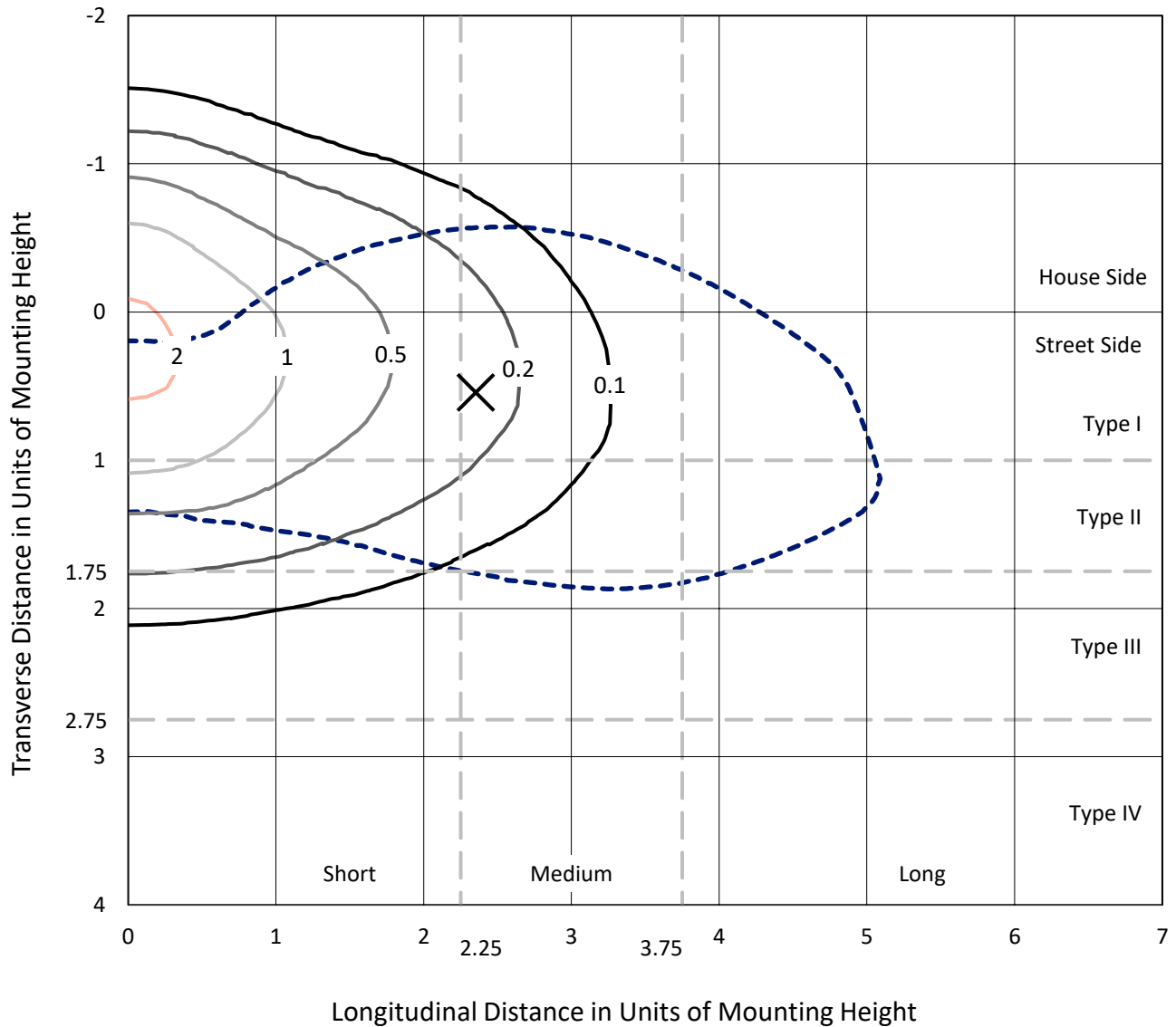
Lumens per Lamp: N/A
Luminaire Lumens: 4297.5 lumens
Efficiency: N/A
Efficacy: 131.0 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G1

Input Watts (W): 32.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.76%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P867953
 CATALOG NUMBER: MEM2-HSN-SA-30-722-U-T2U

Iso-Footcandle Lines of Horizontal Illumination

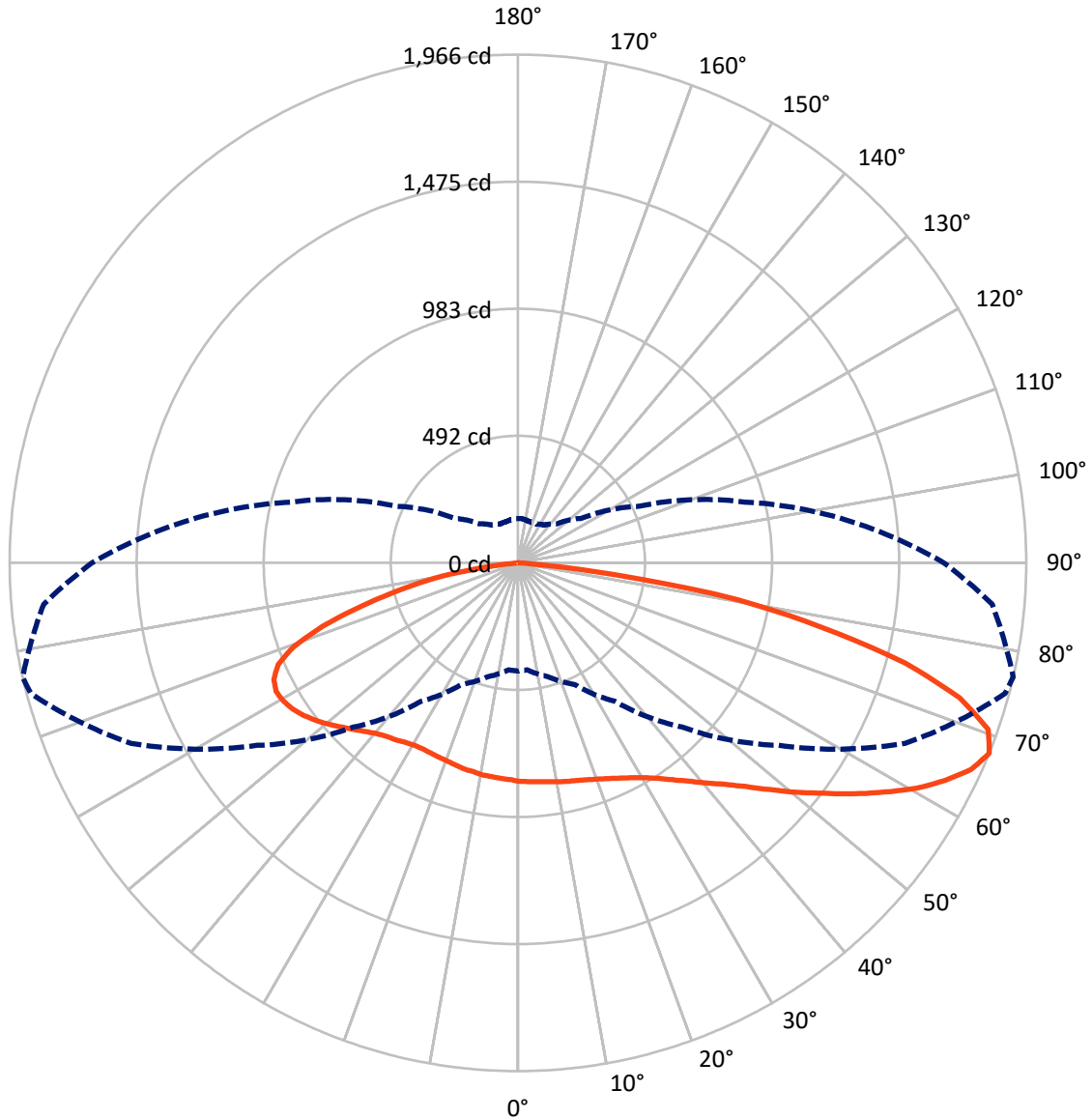
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.3 fc
 Type III - Medium - N/A

REPORT NUMBER: P867953
CATALOG NUMBER: MEM2-HSN-SA-30-722-U-T2U

Luminous Intensity Polar Plot



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

REPORT NUMBER: P867953
 CATALOG NUMBER: MEM2-HSN-SA-30-722-U-T2U

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1429.1 | 0.0 | 1429.1 |
| | % Fixture | 33.3 | 0.0 | 33.3 |
| Street Side | Lumens | 2868.4 | 0.0 | 2868.4 |
| | % Fixture | 66.7 | 0.0 | 66.7 |
| Total | Lumens | 4297.5 | 0.0 | 4297.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 81.2 | 1.9 |
| 10°-20° | 246.3 | 5.7 |
| 20°-30° | 415.2 | 9.7 |
| 30°-40° | 589.2 | 13.7 |
| 40°-50° | 745.5 | 17.3 |
| 50°-60° | 816.7 | 19.0 |
| 60°-70° | 789.4 | 18.4 |
| 70°-80° | 531.0 | 12.4 |
| 80°-90° | 83.0 | 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° | 4297.5 | 100.0 |
| 0°-180° | 4297.5 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P867953

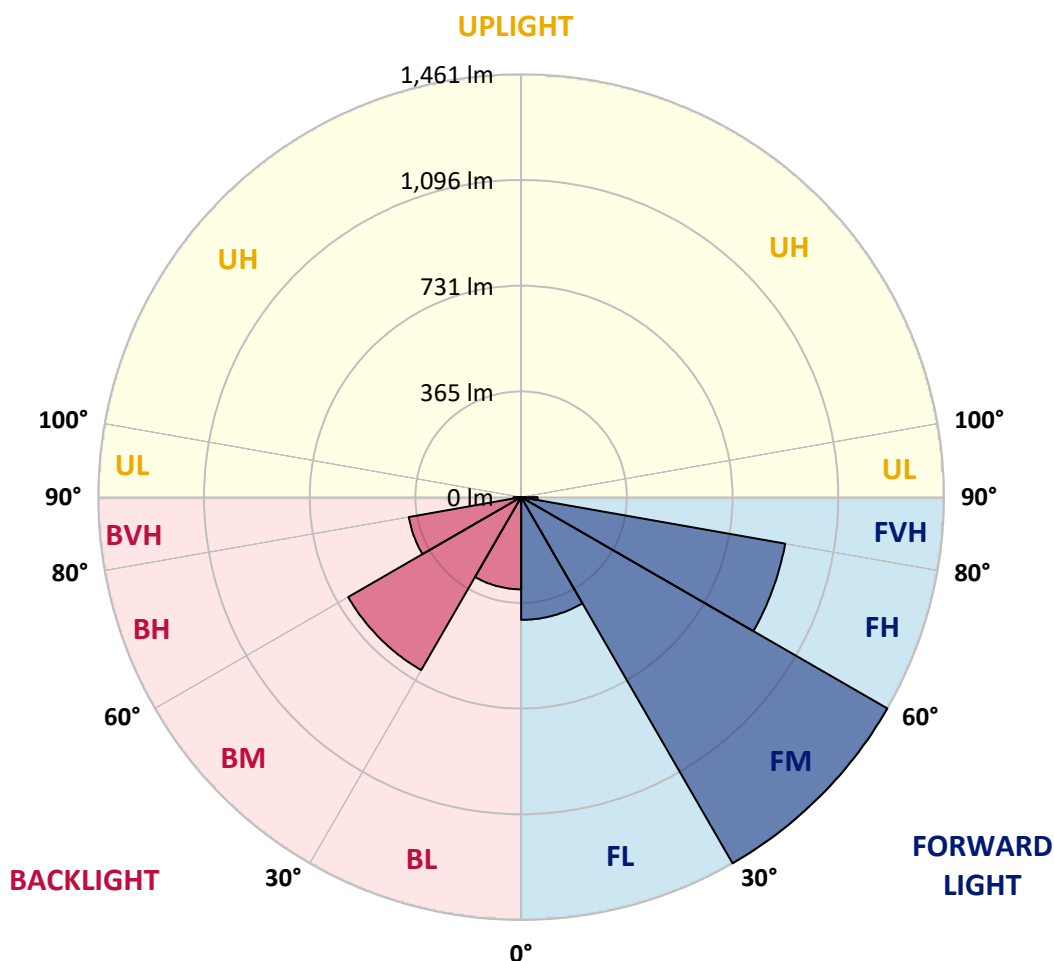
CATALOG NUMBER: MEM2-HSN-SA-30-722-U-T2U

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 424.2 | 9.9 | | | |
| FM (30°-60°) | 1461.2 | 34.0 | | | |
| FH (60°-80°) | 926.3 | 21.6 | | | G1/1800 |
| FVH (80°-90°) | 56.8 | 1.3 | | | G1/100 |
| BL (0°-30°) | 318.6 | 7.4 | B1/500 | | |
| BM (30°-60°) | 690.2 | 16.1 | B1/1000 | | |
| BH (60°-80°) | 394.1 | 9.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 26.2 | 0.6 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type III Medium





REPORT NUMBER: P867953

CATALOG NUMBER: MEM2-HSN-SA-30-722-U-T2U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 |
| 2.5° | 863.6 | 862.8 | 858.5 | 860.2 | 855.1 | 858.5 | 853.4 | 849.2 | 848.3 | 847.5 | 848.3 |
| 5° | 890.8 | 886.6 | 882.3 | 879.8 | 875.5 | 873.8 | 865.3 | 856.8 | 851.7 | 850.9 | 849.2 |
| 7.5° | 922.3 | 920.6 | 914.6 | 911.2 | 899.3 | 893.4 | 881.5 | 866.2 | 858.5 | 855.1 | 850.9 |
| 10° | 954.6 | 958.8 | 951.2 | 944.4 | 930.8 | 918.0 | 897.6 | 878.1 | 862.8 | 861.1 | 851.7 |
| 12.5° | 994.5 | 993.7 | 988.6 | 976.7 | 960.5 | 942.7 | 918.0 | 890.8 | 870.4 | 867.0 | 853.4 |
| 15° | 1030.2 | 1029.4 | 1022.6 | 1011.5 | 990.3 | 968.2 | 935.0 | 903.6 | 878.1 | 873.0 | 856.8 |
| 17.5° | 1063.4 | 1061.7 | 1057.4 | 1045.5 | 1019.2 | 992.0 | 959.7 | 918.0 | 887.4 | 881.5 | 859.4 |
| 20° | 1092.3 | 1094.0 | 1088.9 | 1077.0 | 1052.3 | 1023.4 | 982.6 | 936.7 | 899.3 | 892.5 | 867.0 |
| 22.5° | 1123.7 | 1124.6 | 1122.0 | 1117.8 | 1086.3 | 1055.7 | 1011.5 | 958.0 | 912.9 | 906.1 | 875.5 |
| 25° | 1156.9 | 1157.7 | 1159.4 | 1156.9 | 1121.2 | 1088.0 | 1041.3 | 984.3 | 931.6 | 922.3 | 887.4 |
| 27.5° | 1195.1 | 1196.0 | 1199.4 | 1194.3 | 1156.0 | 1121.2 | 1074.4 | 1012.4 | 951.2 | 941.0 | 897.6 |
| 30° | 1238.5 | 1241.9 | 1239.3 | 1237.6 | 1193.4 | 1159.4 | 1107.6 | 1041.3 | 976.7 | 963.9 | 915.5 |
| 32.5° | 1290.3 | 1289.5 | 1284.4 | 1279.3 | 1234.2 | 1198.5 | 1145.0 | 1078.7 | 1008.1 | 993.7 | 944.4 |
| 35° | 1327.7 | 1327.7 | 1320.1 | 1317.5 | 1275.9 | 1238.5 | 1185.8 | 1120.3 | 1043.8 | 1030.2 | 975.0 |
| 37.5° | 1350.7 | 1354.1 | 1348.1 | 1349.8 | 1309.9 | 1275.0 | 1226.6 | 1162.8 | 1082.9 | 1071.0 | 1012.4 |
| 40° | 1359.2 | 1367.7 | 1372.8 | 1379.6 | 1339.6 | 1309.9 | 1269.9 | 1208.7 | 1133.1 | 1119.5 | 1057.4 |
| 42.5° | 1360.9 | 1373.6 | 1391.5 | 1405.9 | 1360.9 | 1336.2 | 1311.6 | 1255.5 | 1182.4 | 1170.5 | 1106.7 |
| 45° | 1352.4 | 1346.4 | 1389.8 | 1391.5 | 1372.8 | 1357.5 | 1348.1 | 1311.6 | 1253.8 | 1234.2 | 1167.9 |
| 47.5° | 1287.8 | 1281.0 | 1292.9 | 1347.3 | 1358.3 | 1366.8 | 1385.5 | 1377.0 | 1325.2 | 1309.9 | 1238.5 |
| 50° | 1183.2 | 1179.8 | 1227.4 | 1286.1 | 1322.6 | 1366.0 | 1416.1 | 1439.9 | 1404.2 | 1394.9 | 1327.7 |
| 52.5° | 1010.7 | 1001.3 | 1098.2 | 1212.1 | 1275.9 | 1357.5 | 1437.4 | 1504.5 | 1493.5 | 1479.9 | 1404.2 |
| 55° | 901.0 | 901.0 | 966.5 | 1108.4 | 1216.4 | 1326.9 | 1451.0 | 1572.6 | 1592.1 | 1576.8 | 1491.8 |
| 57.5° | 783.7 | 793.1 | 861.1 | 958.8 | 1130.5 | 1270.8 | 1449.3 | 1629.5 | 1687.3 | 1672.9 | 1584.5 |
| 60° | 683.4 | 691.1 | 730.2 | 828.8 | 1029.4 | 1196.8 | 1430.6 | 1676.3 | 1775.7 | 1770.6 | 1666.1 |
| 62.5° | 581.4 | 590.8 | 622.2 | 714.9 | 895.9 | 1111.8 | 1391.5 | 1701.8 | 1859.0 | 1853.9 | 1748.5 |
| 65° | 499.8 | 500.7 | 532.1 | 609.5 | 762.5 | 1009.0 | 1322.6 | 1696.7 | 1923.6 | 1927.0 | 1818.2 |
| 67.5° | 418.2 | 415.7 | 456.5 | 519.4 | 653.7 | 898.5 | 1230.8 | 1651.6 | 1950.8 | 1966.1 | 1841.2 |
| 70° | 307.7 | 311.1 | 368.1 | 437.8 | 552.5 | 771.0 | 1102.5 | 1564.1 | 1906.6 | 1930.4 | 1788.5 |
| 72.5° | 231.2 | 238.0 | 293.3 | 365.5 | 461.6 | 643.5 | 962.2 | 1411.9 | 1783.4 | 1786.8 | 1627.8 |
| 75° | 187.9 | 189.6 | 238.9 | 303.5 | 378.3 | 516.0 | 772.7 | 1179.0 | 1507.9 | 1547.1 | 1383.0 |
| 77.5° | 159.8 | 158.1 | 181.9 | 244.8 | 305.2 | 412.3 | 582.3 | 896.8 | 1184.1 | 1201.9 | 1082.9 |
| 80° | 136.0 | 135.2 | 143.7 | 198.1 | 238.9 | 294.1 | 398.7 | 624.8 | 844.9 | 864.5 | 769.3 |
| 82.5° | 71.4 | 76.5 | 74.8 | 122.4 | 135.2 | 154.7 | 191.3 | 283.9 | 368.9 | 374.0 | 353.6 |
| 85° | 3.4 | 3.4 | 3.4 | 5.1 | 8.5 | 13.6 | 26.4 | 26.4 | 28.9 | 55.3 | 62.9 |
| 87.5° | 0.9 | 0.9 | 1.7 | 1.7 | 1.7 | 2.6 | 2.6 | 3.4 | 3.4 | 3.4 | 3.4 |
| 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: P867953

CATALOG NUMBER: MEM2-HSN-SA-30-722-U-T2U

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 | 844.9 |
| 2.5° | 846.6 | 843.2 | 838.1 | 839.0 | 838.1 | 838.1 | 833.9 | 830.5 | 829.6 | 831.3 | 834.7 |
| 5° | 847.5 | 842.4 | 834.7 | 832.2 | 829.6 | 827.9 | 821.1 | 816.0 | 813.5 | 815.2 | 816.0 |
| 7.5° | 847.5 | 839.8 | 831.3 | 826.2 | 819.4 | 814.3 | 806.7 | 799.9 | 796.5 | 797.3 | 799.0 |
| 10° | 845.8 | 837.3 | 830.5 | 820.3 | 809.2 | 803.3 | 791.4 | 782.9 | 778.6 | 779.5 | 775.2 |
| 12.5° | 845.8 | 836.4 | 822.8 | 813.5 | 798.2 | 785.4 | 776.1 | 766.7 | 763.3 | 759.9 | 758.2 |
| 15° | 846.6 | 834.7 | 821.1 | 801.6 | 783.7 | 770.1 | 758.2 | 752.3 | 747.2 | 745.5 | 746.3 |
| 17.5° | 846.6 | 834.7 | 814.3 | 791.4 | 771.0 | 754.0 | 743.8 | 737.0 | 735.3 | 733.6 | 733.6 |
| 20° | 850.9 | 835.6 | 808.4 | 781.2 | 755.7 | 737.8 | 728.5 | 724.2 | 724.2 | 721.7 | 721.7 |
| 22.5° | 857.7 | 837.3 | 805.0 | 772.7 | 742.9 | 723.4 | 713.2 | 708.1 | 710.6 | 708.9 | 708.1 |
| 25° | 865.3 | 843.2 | 800.7 | 760.8 | 725.9 | 705.5 | 695.3 | 691.9 | 691.1 | 686.8 | 692.8 |
| 27.5° | 871.3 | 847.5 | 798.2 | 748.9 | 710.6 | 686.8 | 674.1 | 668.1 | 663.9 | 665.6 | 663.9 |
| 30° | 887.4 | 859.4 | 799.0 | 738.7 | 693.6 | 664.7 | 649.4 | 642.6 | 640.9 | 640.9 | 640.9 |
| 32.5° | 909.5 | 874.7 | 805.0 | 734.4 | 677.5 | 643.5 | 624.8 | 618.0 | 616.3 | 612.9 | 614.6 |
| 35° | 937.6 | 897.6 | 814.3 | 727.6 | 664.7 | 618.8 | 598.4 | 589.1 | 586.5 | 583.1 | 583.1 |
| 37.5° | 969.0 | 920.6 | 821.1 | 724.2 | 647.7 | 593.3 | 570.4 | 558.5 | 556.8 | 553.4 | 555.1 |
| 40° | 1009.0 | 952.0 | 832.2 | 717.4 | 628.2 | 570.4 | 539.8 | 520.2 | 524.5 | 526.2 | 529.6 |
| 42.5° | 1054.0 | 992.0 | 849.2 | 710.6 | 612.9 | 546.6 | 501.5 | 482.0 | 487.1 | 485.4 | 488.8 |
| 45° | 1115.2 | 1038.7 | 870.4 | 708.1 | 594.2 | 517.7 | 462.4 | 440.3 | 438.6 | 436.1 | 437.8 |
| 47.5° | 1179.0 | 1094.8 | 890.8 | 703.0 | 573.8 | 482.0 | 418.2 | 390.2 | 383.4 | 380.0 | 376.6 |
| 50° | 1245.3 | 1150.9 | 914.6 | 699.6 | 546.6 | 442.0 | 374.0 | 341.7 | 329.0 | 324.7 | 320.5 |
| 52.5° | 1320.1 | 1211.3 | 935.0 | 691.1 | 516.8 | 400.4 | 334.1 | 297.5 | 283.1 | 274.6 | 275.4 |
| 55° | 1399.1 | 1266.5 | 953.7 | 680.9 | 482.8 | 361.3 | 294.1 | 263.5 | 249.1 | 246.5 | 246.5 |
| 57.5° | 1472.2 | 1323.5 | 967.3 | 663.0 | 448.8 | 323.0 | 261.0 | 234.6 | 227.8 | 231.2 | 231.2 |
| 60° | 1547.1 | 1369.4 | 974.1 | 643.5 | 414.0 | 290.7 | 238.0 | 216.8 | 213.4 | 220.2 | 221.0 |
| 62.5° | 1607.4 | 1405.9 | 972.4 | 616.3 | 375.7 | 262.7 | 215.9 | 198.9 | 200.6 | 212.5 | 215.1 |
| 65° | 1650.8 | 1423.8 | 951.2 | 575.5 | 339.2 | 238.0 | 196.4 | 180.2 | 180.2 | 188.7 | 191.3 |
| 67.5° | 1647.4 | 1400.8 | 908.7 | 518.5 | 300.1 | 213.4 | 178.5 | 165.8 | 165.8 | 171.7 | 170.9 |
| 70° | 1577.7 | 1321.8 | 827.9 | 449.7 | 261.8 | 192.1 | 163.2 | 153.9 | 153.0 | 155.6 | 154.7 |
| 72.5° | 1410.2 | 1161.1 | 702.1 | 371.5 | 226.1 | 170.9 | 147.9 | 139.4 | 137.7 | 134.3 | 131.8 |
| 75° | 1163.7 | 953.7 | 548.3 | 295.8 | 191.3 | 150.5 | 133.5 | 125.8 | 119.0 | 123.3 | 120.7 |
| 77.5° | 902.7 | 731.9 | 408.0 | 229.5 | 155.6 | 130.9 | 119.0 | 110.5 | 108.8 | 124.1 | 119.0 |
| 80° | 658.8 | 505.8 | 288.2 | 164.1 | 120.7 | 106.3 | 99.5 | 92.7 | 117.3 | 157.3 | 156.4 |
| 82.5° | 292.4 | 244.0 | 131.8 | 78.2 | 56.1 | 46.8 | 39.1 | 44.2 | 74.0 | 72.3 | 74.8 |
| 85° | 26.4 | 27.2 | 14.5 | 9.4 | 6.0 | 5.1 | 3.4 | 3.4 | 2.6 | 2.6 | 2.6 |
| 87.5° | 3.4 | 3.4 | 2.6 | 2.6 | 1.7 | 1.7 | 1.7 | 1.7 | 0.9 | 0.9 | 0.9 |
| 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

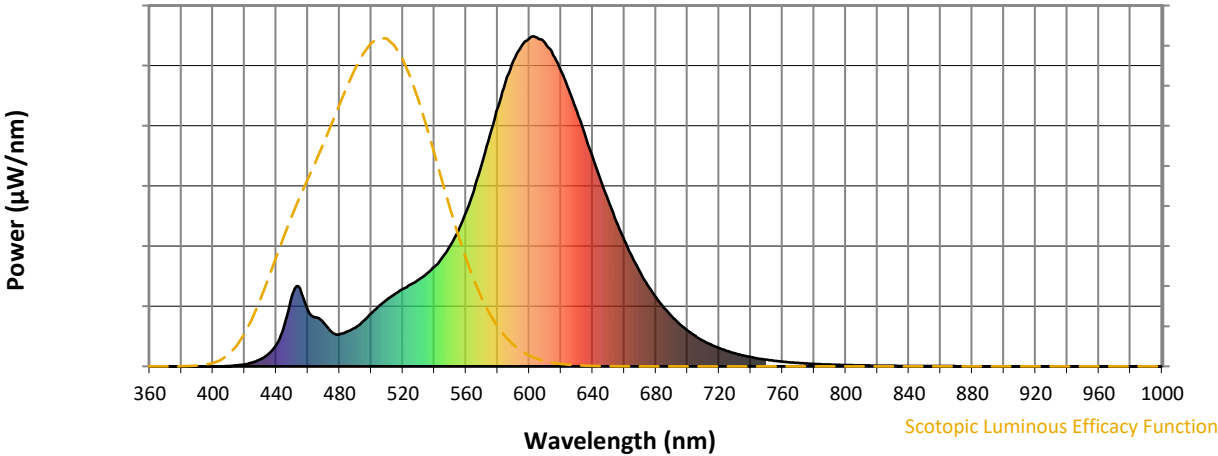


Photopic Lumens: NR

| 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

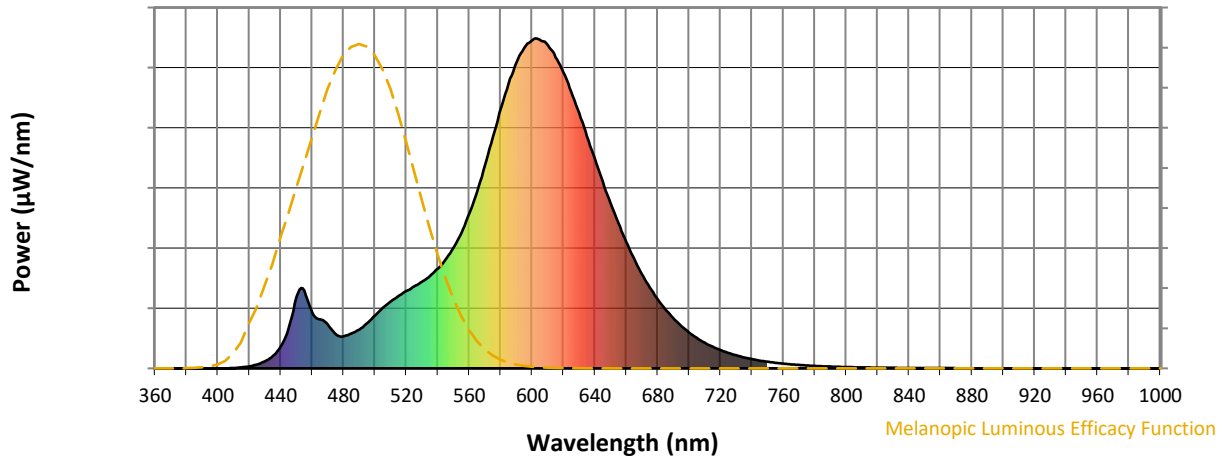


Scotopic Lumens: NR S/P: 0.96

| 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)