

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: P868062

Luminaire Tested: **MEM2-HSN-SA-100-722-U-T3-HSS**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P868062
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-100-722-U-T3-HSS
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 100W 70CRI 2200K
FITXURE w/ TYPE III DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD
Light Source: (20) 2200K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

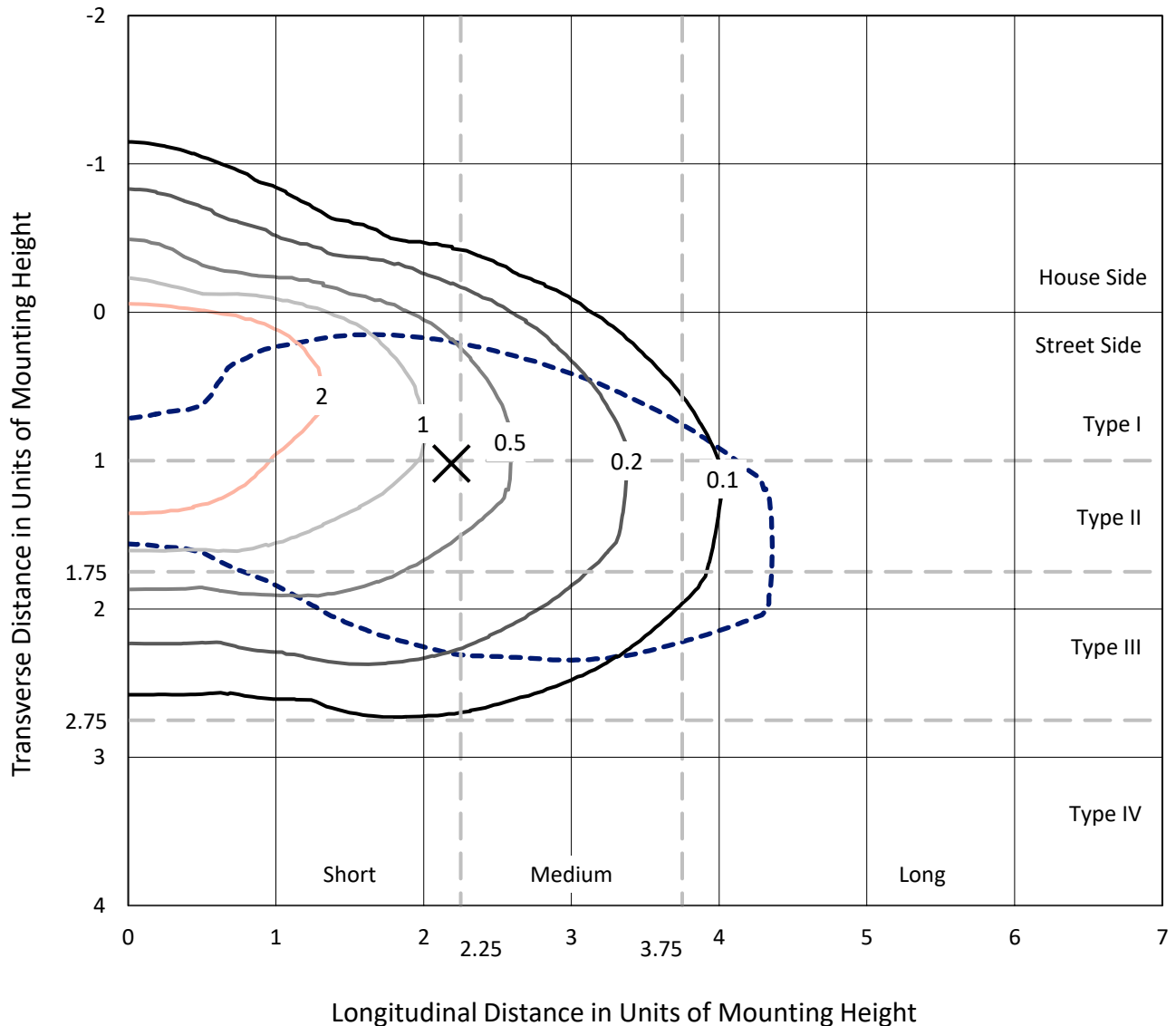
Lumens per Lamp: N/A
Luminaire Lumens: 8266.9 lumens
Efficiency: N/A
Efficacy: 81.9 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

Input Watts (W): 101
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.45%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P868062
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Iso-Footcandle Lines of Horizontal Illumination

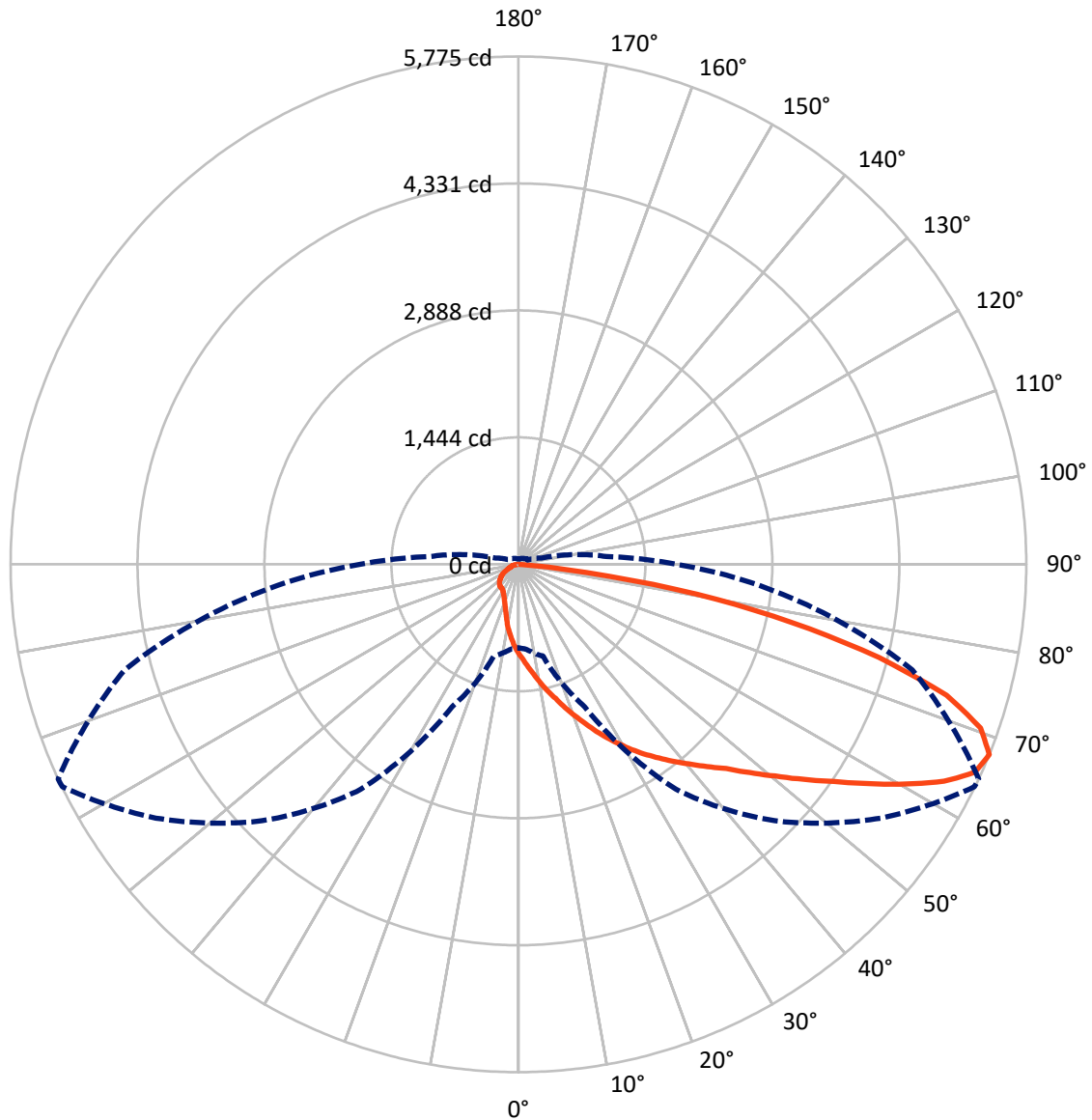
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.7 fc
 Type III - Short - N/A

REPORT NUMBER: P868062
CATALOG NUMBER: MEM2-HSN-SA-100-722-U-T3-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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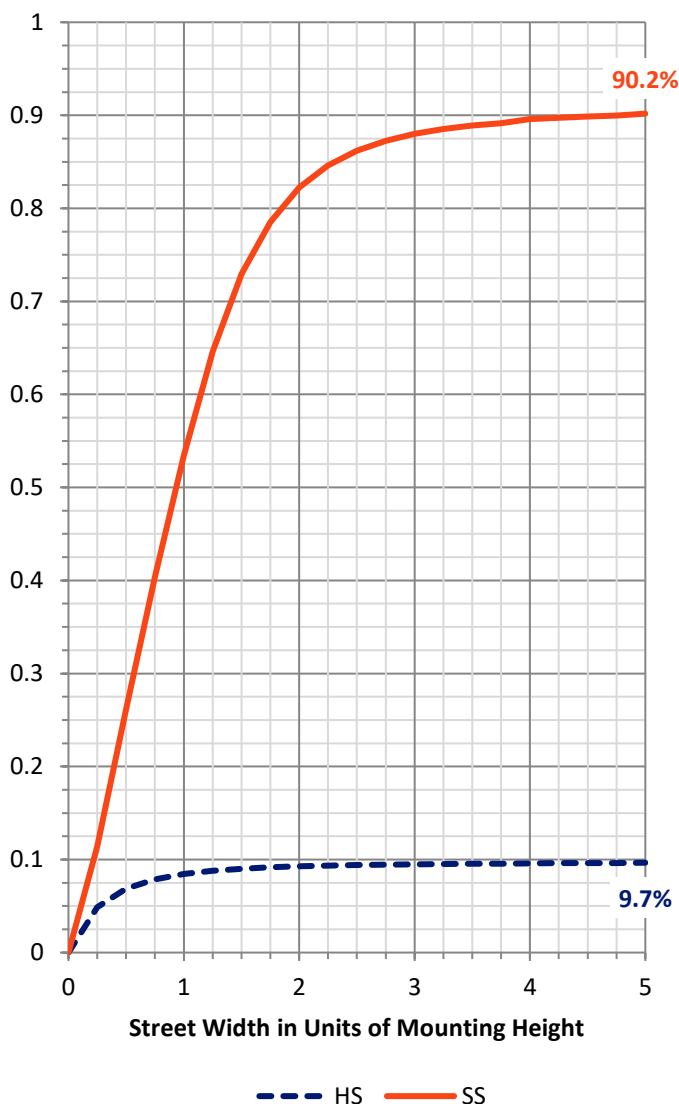
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 804.6 | 0.0 | 804.6 |
| | % Fixture | 9.7 | 0.0 | 9.7 |
| Street Side | Lumens | 7462.3 | 0.0 | 7462.3 |
| | % Fixture | 90.3 | 0.0 | 90.3 |
| Total | Lumens | 8266.9 | 0.0 | 8266.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 100.0 | 1.2 |
| 10°-20° | 331.7 | 4.0 |
| 20°-30° | 603.7 | 7.3 |
| 30°-40° | 934.3 | 11.3 |
| 40°-50° | 1412.4 | 17.1 |
| 50°-60° | 1837.5 | 22.2 |
| 60°-70° | 1812.7 | 21.9 |
| 70°-80° | 1103.4 | 13.3 |
| 80°-90° | 131.2 | 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° | 8266.9 | 100.0 |
| 0°-180° | 8266.9 | 100.0 |

Coefficient of Utilization



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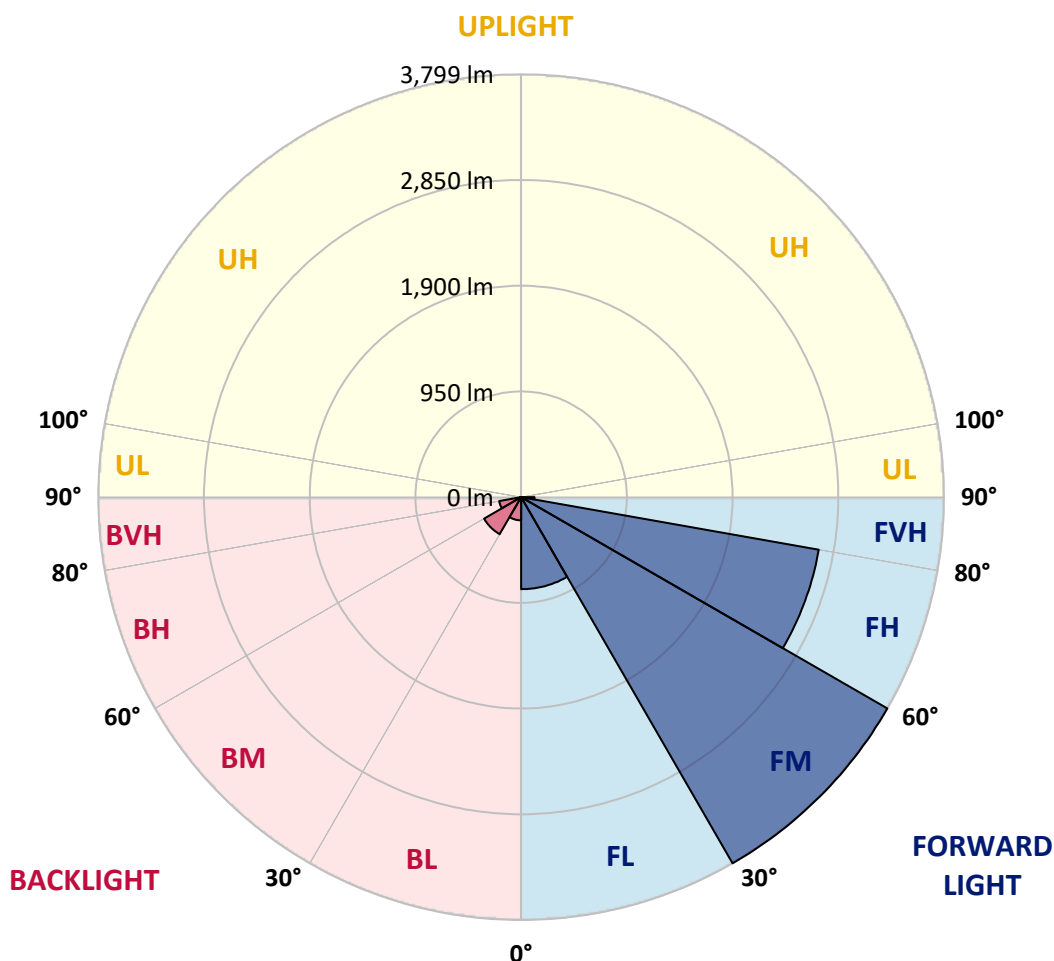
CATALOG NUMBER: MEM2-HSN-SA-100-722-U-T3-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 827.2 | 10.0 | | | |
| FM | (30°-60°) | 3799.5 | 46.0 | | | |
| FH | (60°-80°) | 2715.7 | 32.9 | | | G2/5000 |
| FVH | (80°-90°) | 119.9 | 1.5 | | | G2/225 |
| BL | (0°-30°) | 208.2 | 2.5 | B1/500 | | |
| BM | (30°-60°) | 384.8 | 4.7 | B1/1000 | | |
| BH | (60°-80°) | 200.4 | 2.4 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 11.3 | 0.1 | | | 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 III Short





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CATALOG NUMBER: MEM2-HSN-SA-100-722-U-T3-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 |
| 2.5° | 1193.7 | 1184.3 | 1191.4 | 1174.9 | 1156.0 | 1141.8 | 1113.5 | 1089.9 | 1087.6 | 1064.0 | 1038.0 |
| 5° | 1422.6 | 1391.9 | 1394.3 | 1361.2 | 1321.1 | 1278.7 | 1233.8 | 1174.9 | 1174.9 | 1118.2 | 1059.3 |
| 7.5° | 1627.8 | 1623.1 | 1601.9 | 1550.0 | 1502.8 | 1436.7 | 1354.2 | 1278.7 | 1262.2 | 1174.9 | 1082.9 |
| 10° | 1826.0 | 1818.9 | 1800.0 | 1759.9 | 1679.7 | 1606.6 | 1502.8 | 1389.5 | 1368.3 | 1243.3 | 1111.2 |
| 12.5° | 1984.1 | 1986.4 | 1965.2 | 1932.2 | 1861.4 | 1774.1 | 1637.3 | 1495.7 | 1476.8 | 1309.3 | 1139.5 |
| 15° | 2123.2 | 2120.9 | 2116.2 | 2087.9 | 2019.4 | 1939.2 | 1778.8 | 1613.7 | 1583.0 | 1380.1 | 1167.8 |
| 17.5° | 2229.4 | 2224.7 | 2215.3 | 2191.7 | 2158.6 | 2080.8 | 1927.4 | 1738.7 | 1712.8 | 1462.7 | 1200.8 |
| 20° | 2260.1 | 2257.7 | 2257.7 | 2274.2 | 2260.1 | 2212.9 | 2076.1 | 1868.5 | 1840.1 | 1550.0 | 1245.6 |
| 22.5° | 2316.7 | 2314.3 | 2312.0 | 2328.5 | 2337.9 | 2333.2 | 2215.3 | 2000.6 | 1974.6 | 1651.4 | 1302.3 |
| 25° | 2389.8 | 2385.1 | 2378.0 | 2394.6 | 2406.3 | 2434.7 | 2354.4 | 2156.3 | 2125.6 | 1769.4 | 1358.9 |
| 27.5° | 2486.6 | 2491.3 | 2481.8 | 2479.5 | 2479.5 | 2496.0 | 2477.1 | 2295.5 | 2267.2 | 1882.6 | 1424.9 |
| 30° | 2614.0 | 2621.0 | 2604.5 | 2592.7 | 2571.5 | 2569.1 | 2573.8 | 2451.2 | 2411.1 | 2005.3 | 1493.4 |
| 32.5° | 2739.0 | 2746.1 | 2736.6 | 2720.1 | 2665.9 | 2644.6 | 2663.5 | 2583.3 | 2557.3 | 2139.8 | 1580.6 |
| 35° | 2840.4 | 2856.9 | 2856.9 | 2823.9 | 2748.4 | 2736.6 | 2767.3 | 2713.0 | 2694.2 | 2297.8 | 1684.4 |
| 37.5° | 2977.3 | 2986.7 | 2977.3 | 2915.9 | 2821.6 | 2835.7 | 2882.9 | 2849.9 | 2838.1 | 2467.7 | 1807.1 |
| 40° | 3269.8 | 3281.6 | 3220.3 | 3074.0 | 2923.0 | 2939.5 | 3022.1 | 3003.2 | 2984.3 | 2635.2 | 1920.4 |
| 42.5° | 3677.9 | 3649.6 | 3637.8 | 3312.3 | 3078.7 | 3069.3 | 3173.1 | 3147.1 | 3144.8 | 2805.0 | 2024.2 |
| 45° | 3946.9 | 3956.3 | 3897.3 | 3588.3 | 3406.6 | 3229.7 | 3340.6 | 3331.1 | 3312.3 | 2977.3 | 2149.2 |
| 47.5° | 4133.3 | 4112.0 | 3965.8 | 3817.1 | 3852.5 | 3439.7 | 3527.0 | 3550.5 | 3538.7 | 3173.1 | 2302.5 |
| 50° | 4211.1 | 4189.9 | 4093.1 | 3994.1 | 4036.5 | 3680.3 | 3718.0 | 3795.9 | 3784.1 | 3371.2 | 2432.3 |
| 52.5° | 4114.4 | 4088.4 | 4095.5 | 4121.5 | 4100.2 | 3869.0 | 3954.0 | 4076.6 | 4062.5 | 3602.4 | 2583.3 |
| 55° | 3498.6 | 3567.1 | 3831.3 | 4095.5 | 4088.4 | 4012.9 | 4206.4 | 4385.7 | 4357.4 | 3843.1 | 2713.0 |
| 57.5° | 2821.6 | 2859.3 | 3194.3 | 3909.1 | 4050.7 | 4133.3 | 4494.2 | 4716.0 | 4706.5 | 4083.7 | 2831.0 |
| 60° | 2243.6 | 2283.7 | 2538.5 | 3522.2 | 3963.4 | 4258.3 | 4789.1 | 5081.6 | 5072.2 | 4326.7 | 2915.9 |
| 62.5° | 1783.5 | 1783.5 | 2010.0 | 2965.5 | 3795.9 | 4331.4 | 5022.7 | 5449.7 | 5433.2 | 4522.5 | 2937.2 |
| 65° | 1283.4 | 1299.9 | 1469.8 | 2385.1 | 3524.6 | 4312.6 | 5135.9 | 5711.5 | 5702.1 | 4633.4 | 2892.3 |
| 67.5° | 948.4 | 967.3 | 1080.5 | 1788.2 | 3123.5 | 4123.8 | 5032.1 | 5770.5 | 5775.2 | 4635.8 | 2746.1 |
| 70° | 740.8 | 745.5 | 830.4 | 1243.3 | 2559.7 | 3703.9 | 4642.8 | 5574.7 | 5574.7 | 4520.2 | 2529.0 |
| 72.5° | 563.8 | 568.6 | 641.7 | 846.9 | 1885.0 | 3062.2 | 4060.1 | 5055.7 | 5091.1 | 4213.5 | 2208.2 |
| 75° | 436.4 | 445.9 | 495.4 | 608.7 | 1181.9 | 2177.5 | 3335.9 | 4140.3 | 4237.1 | 3619.0 | 1818.9 |
| 77.5° | 337.4 | 346.8 | 386.9 | 445.9 | 688.9 | 1342.4 | 2345.0 | 3095.2 | 3182.5 | 2849.9 | 1403.7 |
| 80° | 271.3 | 276.0 | 302.0 | 335.0 | 417.6 | 691.2 | 1432.0 | 2033.6 | 2059.6 | 1936.9 | 929.5 |
| 82.5° | 125.0 | 134.5 | 162.8 | 184.0 | 207.6 | 320.8 | 611.0 | 752.6 | 785.6 | 769.1 | 382.2 |
| 85° | 14.2 | 14.2 | 16.5 | 18.9 | 21.2 | 33.0 | 42.5 | 37.7 | 37.7 | 44.8 | 40.1 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.4 | 4.7 | 4.7 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P868062

CATALOG NUMBER: MEM2-HSN-SA-100-722-U-T3-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 | 1021.5 |
| 2.5° | 1023.9 | 1007.4 | 976.7 | 950.7 | 927.2 | 903.6 | 891.8 | 863.5 | 856.4 | 861.1 | 844.6 |
| 5° | 1028.6 | 995.6 | 931.9 | 872.9 | 823.3 | 776.2 | 736.1 | 693.6 | 684.2 | 670.0 | 662.9 |
| 7.5° | 1035.7 | 986.1 | 887.0 | 795.0 | 719.5 | 651.1 | 601.6 | 568.6 | 542.6 | 535.5 | 533.2 |
| 10° | 1045.1 | 974.3 | 837.5 | 721.9 | 618.1 | 547.3 | 502.5 | 478.9 | 469.5 | 462.4 | 464.8 |
| 12.5° | 1052.2 | 962.5 | 790.3 | 639.3 | 537.9 | 474.2 | 453.0 | 434.1 | 429.4 | 427.0 | 427.0 |
| 15° | 1061.6 | 950.7 | 733.7 | 566.2 | 469.5 | 431.7 | 410.5 | 403.4 | 403.4 | 401.1 | 401.1 |
| 17.5° | 1073.4 | 941.3 | 686.5 | 509.6 | 429.4 | 394.0 | 384.5 | 375.1 | 375.1 | 375.1 | 372.7 |
| 20° | 1097.0 | 936.6 | 644.1 | 462.4 | 394.0 | 370.4 | 356.2 | 349.2 | 346.8 | 344.4 | 344.4 |
| 22.5° | 1120.6 | 936.6 | 596.9 | 427.0 | 370.4 | 344.4 | 330.3 | 323.2 | 320.8 | 320.8 | 320.8 |
| 25° | 1153.6 | 934.2 | 559.1 | 396.3 | 349.2 | 318.5 | 304.3 | 297.3 | 292.5 | 292.5 | 290.2 |
| 27.5° | 1191.4 | 934.2 | 526.1 | 372.7 | 325.6 | 294.9 | 278.4 | 271.3 | 264.2 | 264.2 | 261.9 |
| 30° | 1229.1 | 938.9 | 497.8 | 353.9 | 302.0 | 273.7 | 252.4 | 243.0 | 238.3 | 235.9 | 235.9 |
| 32.5° | 1278.7 | 953.1 | 478.9 | 339.7 | 280.7 | 252.4 | 231.2 | 221.8 | 217.0 | 214.7 | 214.7 |
| 35° | 1354.2 | 988.5 | 481.3 | 332.6 | 266.6 | 233.6 | 212.3 | 200.5 | 198.2 | 198.2 | 195.8 |
| 37.5° | 1434.4 | 1021.5 | 488.3 | 327.9 | 252.4 | 219.4 | 198.2 | 186.4 | 184.0 | 184.0 | 184.0 |
| 40° | 1502.8 | 1049.8 | 497.8 | 325.6 | 240.6 | 205.2 | 186.4 | 176.9 | 172.2 | 172.2 | 172.2 |
| 42.5° | 1571.2 | 1066.3 | 500.1 | 318.5 | 233.6 | 193.5 | 176.9 | 167.5 | 162.8 | 165.1 | 165.1 |
| 45° | 1639.6 | 1078.1 | 493.1 | 309.1 | 226.5 | 184.0 | 167.5 | 158.1 | 153.3 | 153.3 | 153.3 |
| 47.5° | 1722.2 | 1104.1 | 481.3 | 294.9 | 221.8 | 176.9 | 158.1 | 148.6 | 146.3 | 146.3 | 146.3 |
| 50° | 1804.8 | 1125.3 | 471.8 | 278.4 | 210.0 | 167.5 | 151.0 | 139.2 | 136.8 | 136.8 | 136.8 |
| 52.5° | 1873.2 | 1134.8 | 460.0 | 257.1 | 198.2 | 158.1 | 141.5 | 129.8 | 125.0 | 125.0 | 125.0 |
| 55° | 1925.1 | 1137.1 | 443.5 | 240.6 | 181.7 | 148.6 | 132.1 | 120.3 | 115.6 | 113.2 | 113.2 |
| 57.5° | 1967.5 | 1134.8 | 427.0 | 224.1 | 167.5 | 136.8 | 120.3 | 110.9 | 103.8 | 101.4 | 101.4 |
| 60° | 1991.1 | 1127.7 | 403.4 | 202.9 | 148.6 | 125.0 | 110.9 | 99.1 | 94.4 | 92.0 | 92.0 |
| 62.5° | 1977.0 | 1108.8 | 370.4 | 169.9 | 134.5 | 113.2 | 101.4 | 92.0 | 84.9 | 82.6 | 82.6 |
| 65° | 1910.9 | 1071.1 | 327.9 | 139.2 | 120.3 | 101.4 | 92.0 | 82.6 | 73.1 | 70.8 | 70.8 |
| 67.5° | 1795.3 | 1007.4 | 271.3 | 118.0 | 110.9 | 92.0 | 82.6 | 73.1 | 66.1 | 61.3 | 61.3 |
| 70° | 1634.9 | 922.4 | 212.3 | 101.4 | 99.1 | 84.9 | 75.5 | 66.1 | 59.0 | 54.3 | 54.3 |
| 72.5° | 1406.1 | 783.2 | 158.1 | 87.3 | 87.3 | 77.9 | 68.4 | 61.3 | 54.3 | 49.5 | 49.5 |
| 75° | 1137.1 | 592.2 | 120.3 | 80.2 | 77.9 | 70.8 | 61.3 | 54.3 | 49.5 | 44.8 | 44.8 |
| 77.5° | 830.4 | 394.0 | 99.1 | 73.1 | 73.1 | 63.7 | 56.6 | 49.5 | 44.8 | 42.5 | 42.5 |
| 80° | 504.9 | 226.5 | 70.8 | 56.6 | 56.6 | 54.3 | 47.2 | 42.5 | 40.1 | 35.4 | 33.0 |
| 82.5° | 205.2 | 87.3 | 37.7 | 28.3 | 28.3 | 26.0 | 16.5 | 14.2 | 14.2 | 14.2 | 11.8 |
| 85° | 21.2 | 14.2 | 9.4 | 7.1 | 7.1 | 7.1 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| 87.5° | 7.1 | 7.1 | 4.7 | 4.7 | 4.7 | 4.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| 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



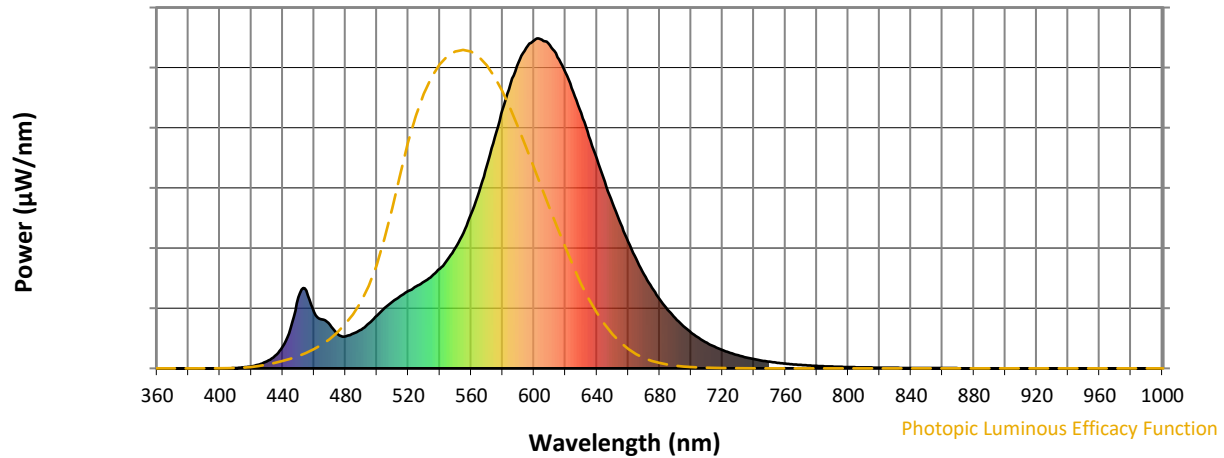
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2200K 4-step quadrangle

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Photopic Flux vs. Wavelength

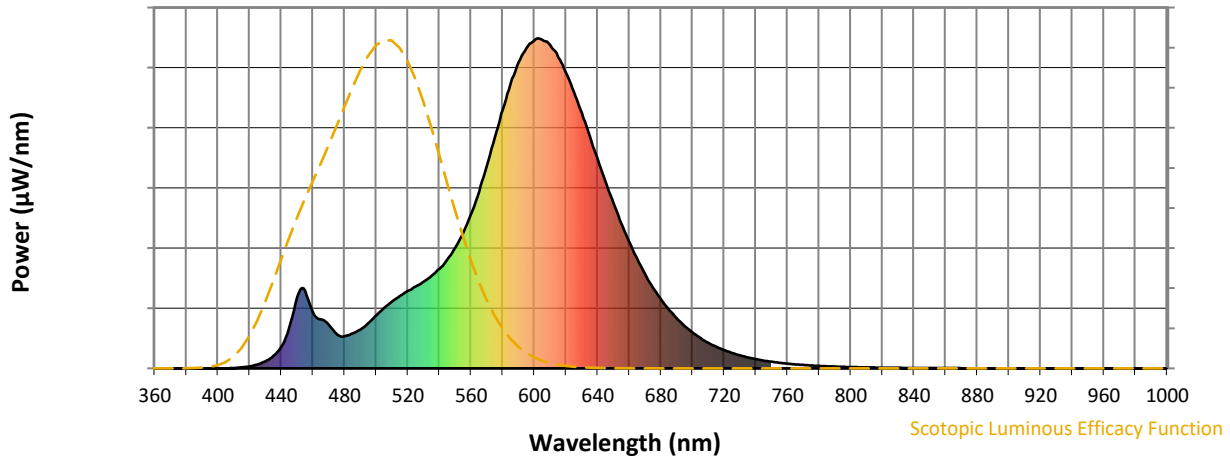


Photopic Lumens: NR

| 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



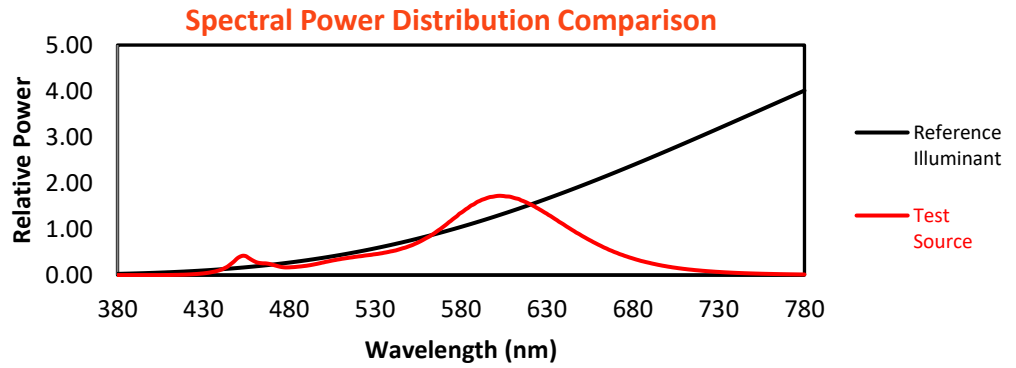
Melanopic Lumens: NR

M/P: 1.71

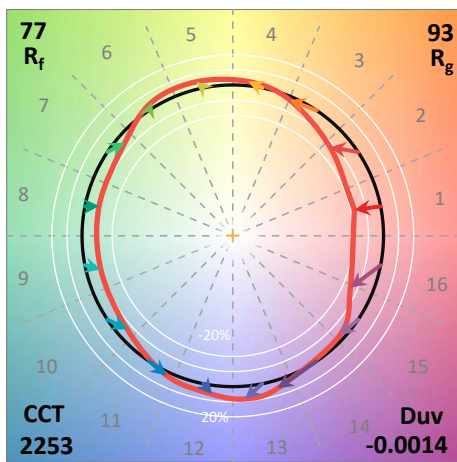
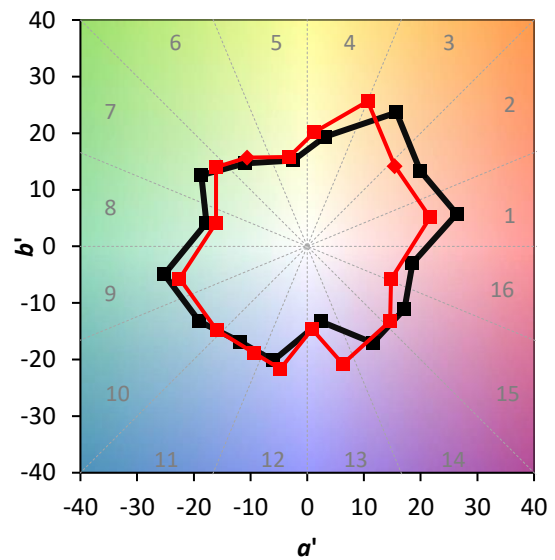
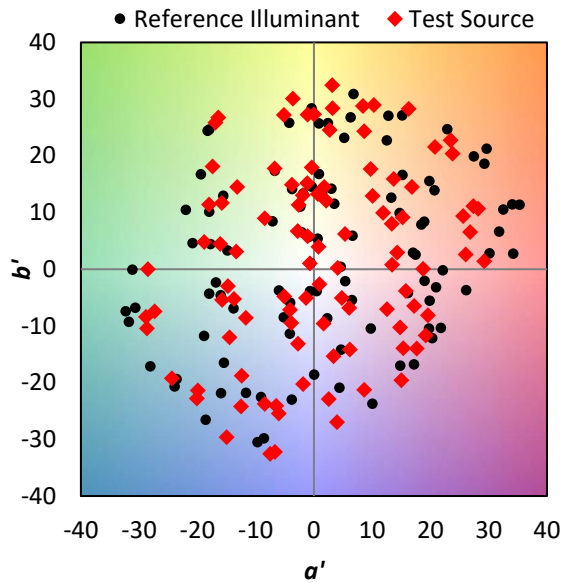
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 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 | | | |

Summary

$R_f = 76.9$
 $R_g = 92.7$
 CIE $R_a = 70.6$
 $R_9 = -36.0$

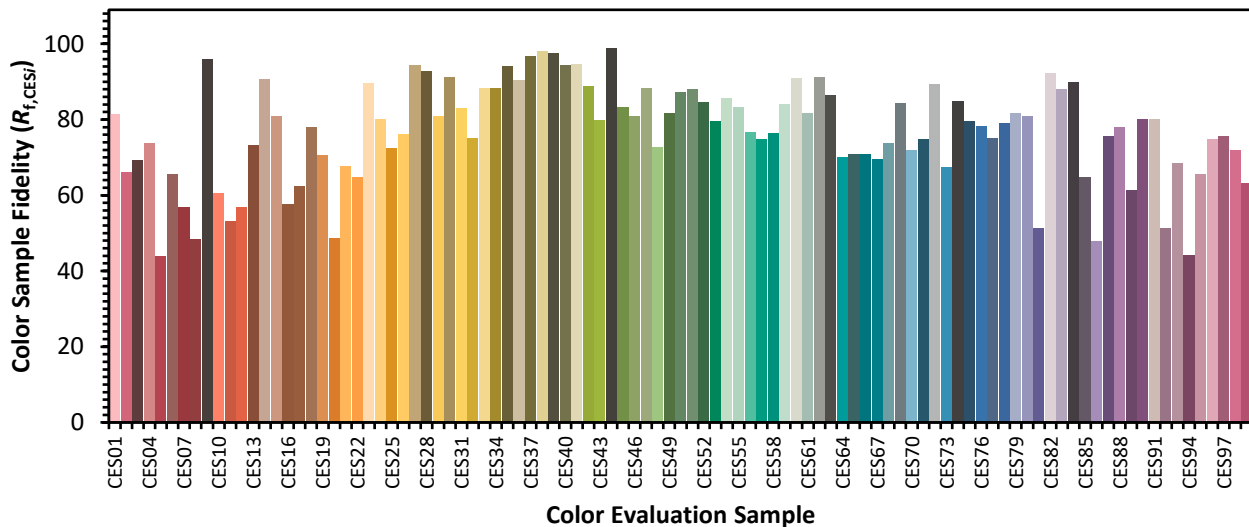


Color Vector Graphics

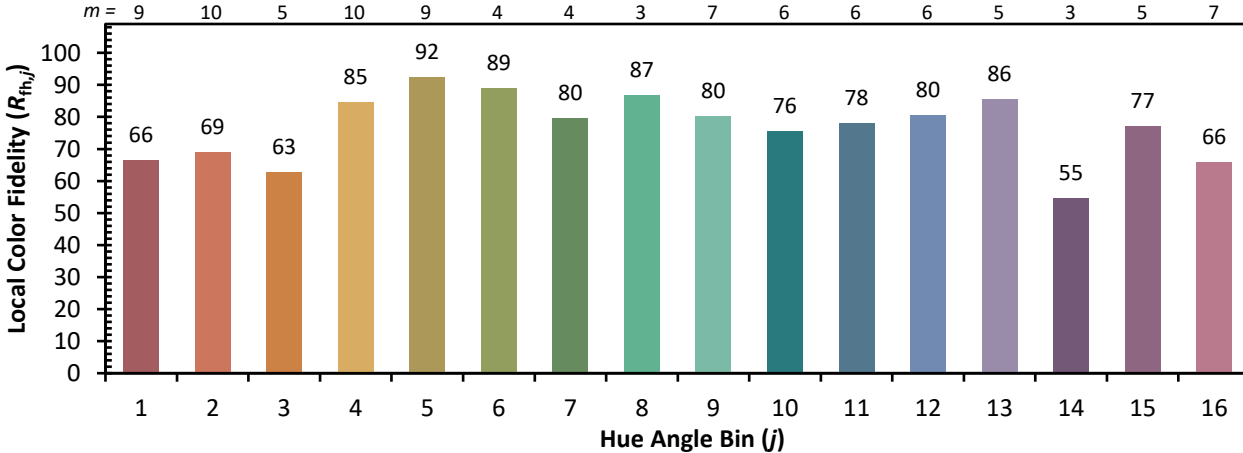


Individual Sample Fidelity Index ($R_{f,i}$)

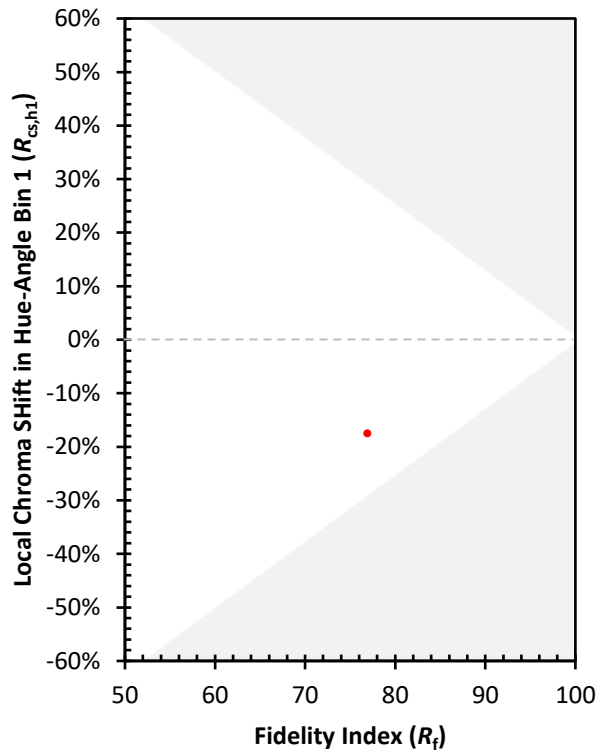
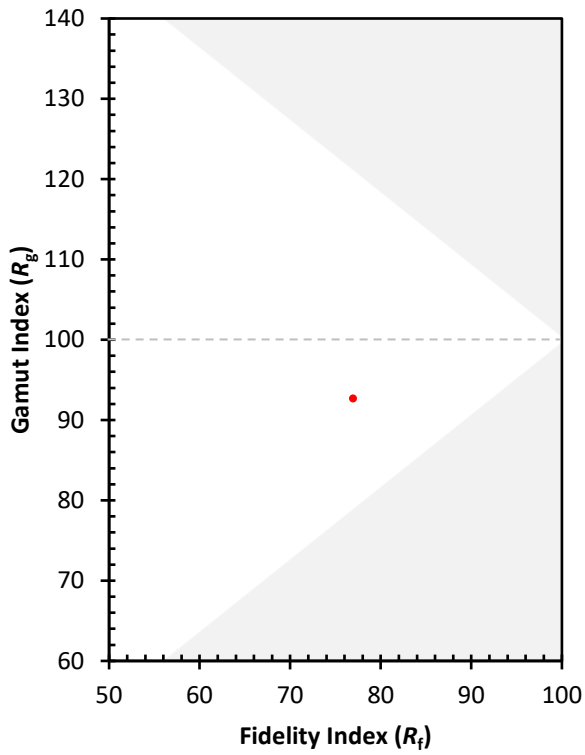
| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 76 | CES51 = 88 | CES76 = 78 |
| CES02 = 65 | CES27 = 94 | CES52 = 85 | CES77 = 75 |
| CES03 = 32 | CES28 = 93 | CES53 = 80 | CES78 = 79 |
| CES04 = 72 | CES29 = 81 | CES54 = 86 | CES79 = 82 |
| CES05 = 51 | CES30 = 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)