

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: P867949

Luminaire Tested: **MEM2-HSN-SA-90-750-U-T2R-HSS**

Issue Date: 08/21/2024

Test Information

Test Method: LM-79-08
Report Number: P867949
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-90-750-U-T2R-HSS
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 90W 70CRI 5000K
FITXURE w/ TYPE II ROADWAY DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD
Light Source: (20) 5000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

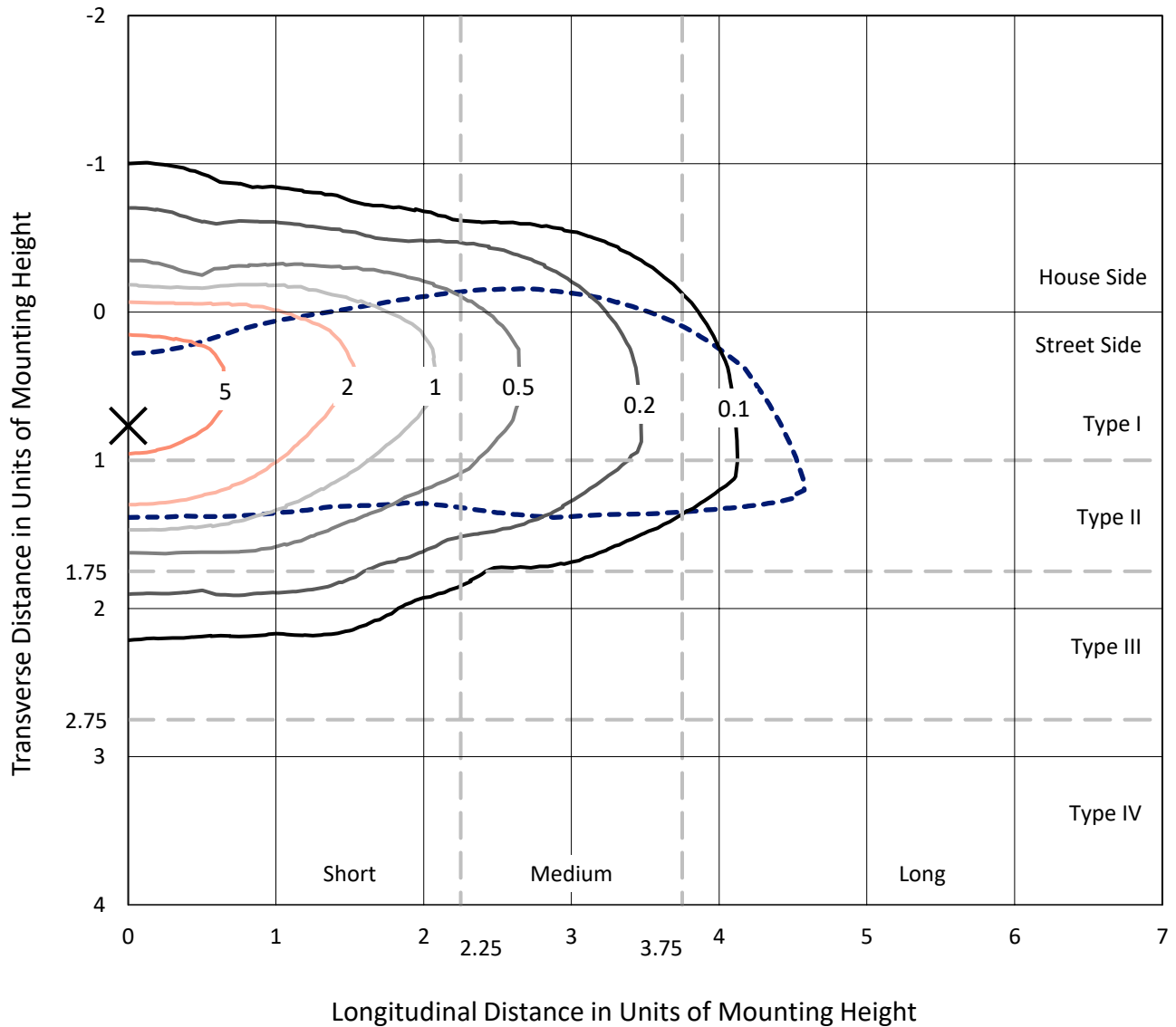
Lumens per Lamp: N/A
Luminaire Lumens: 9052.9 lumens
Efficiency: N/A
Efficacy: 100.6 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

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

REPORT NUMBER: P867949
 CATALOG NUMBER: MEM2-HSN-SA-90-750-U-T2R-HSS

Iso-Footcandle Lines of Horizontal Illumination

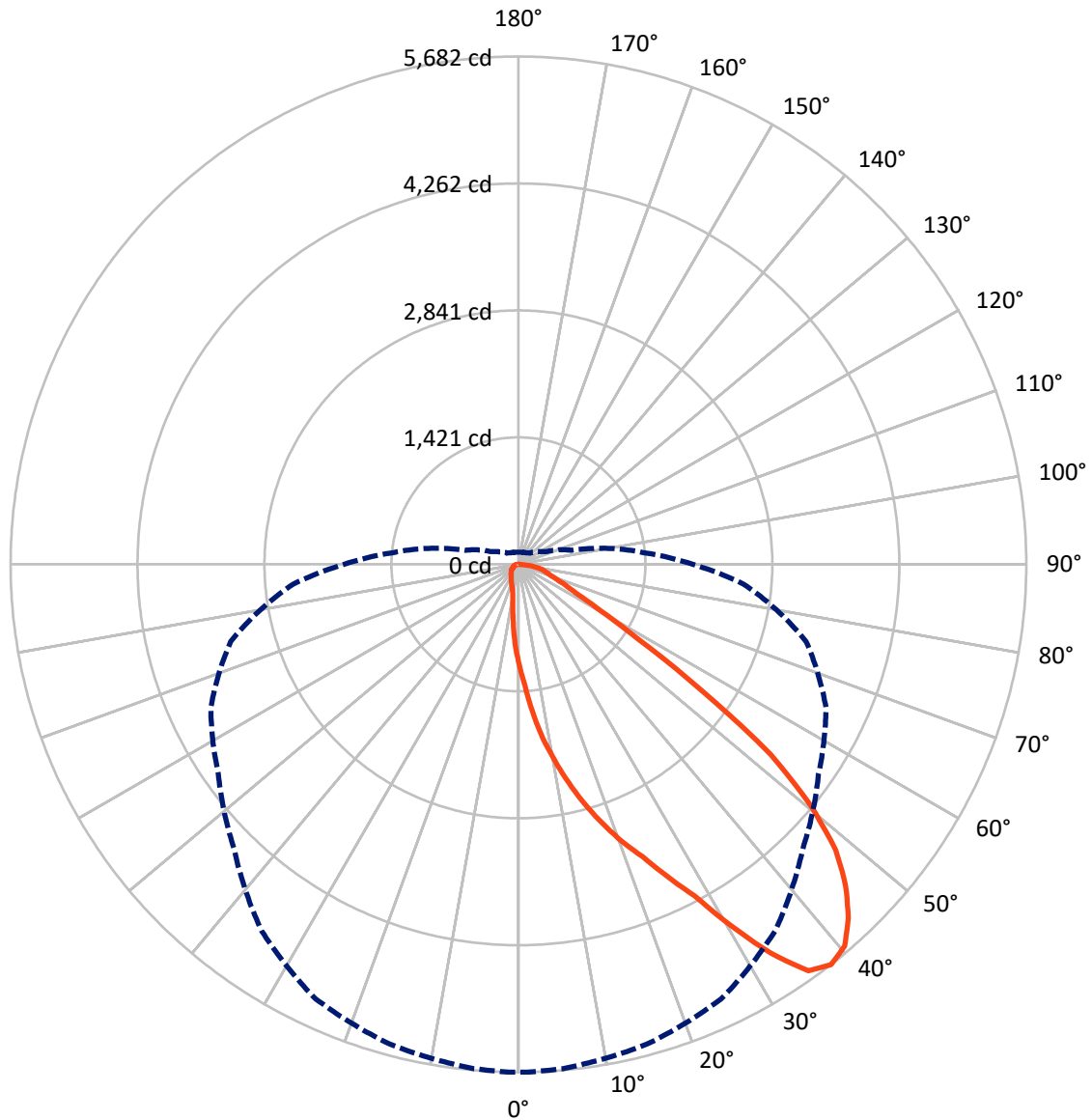
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.8 fc
 Type II - Short - N/A

REPORT NUMBER: P867949
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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 37.5-Deg Vertical

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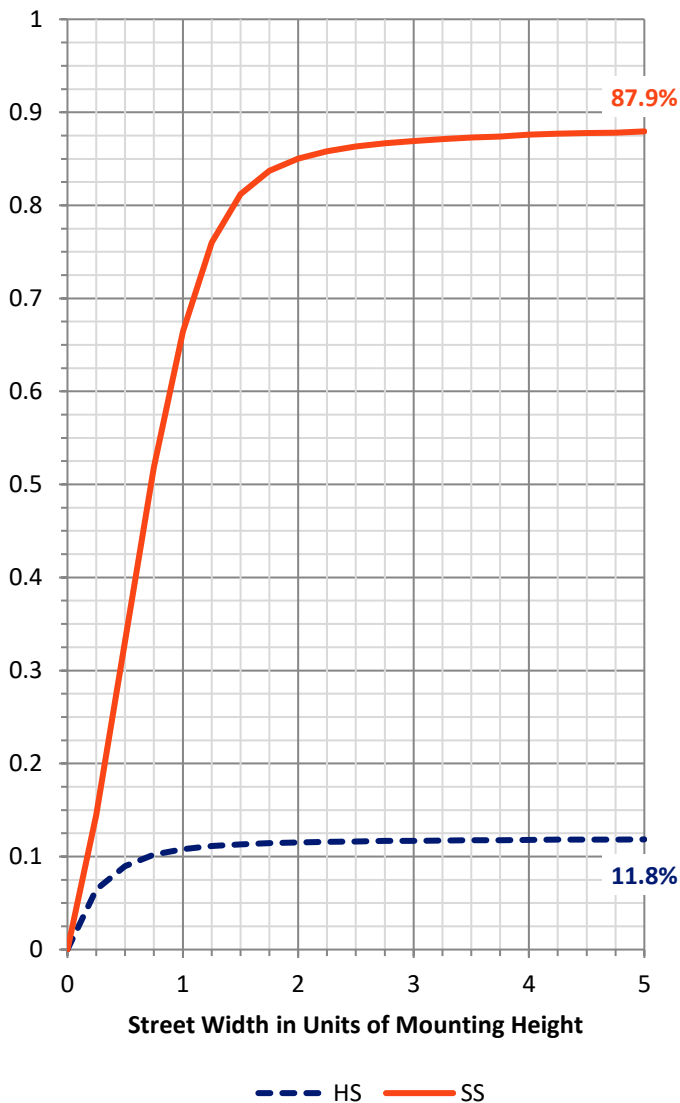
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1079.7 | 0.0 | 1079.7 |
| | % Fixture | 11.9 | 0.0 | 11.9 |
| Street Side | Lumens | 7973.1 | 0.0 | 7973.1 |
| | % Fixture | 88.1 | 0.0 | 88.1 |
| Total | Lumens | 9052.9 | 0.0 | 9052.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 112.5 | 1.2 |
| 10°-20° | 393.4 | 4.3 |
| 20°-30° | 811.7 | 9.0 |
| 30°-40° | 1428.2 | 15.8 |
| 40°-50° | 1939.1 | 21.4 |
| 50°-60° | 1921.2 | 21.2 |
| 60°-70° | 1479.1 | 16.3 |
| 70°-80° | 858.4 | 9.5 |
| 80°-90° | 109.2 | 1.2 |
| 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° | 9052.9 | 100.0 |
| 0°-180° | 9052.9 | 100.0 |

Coefficient of Utilization



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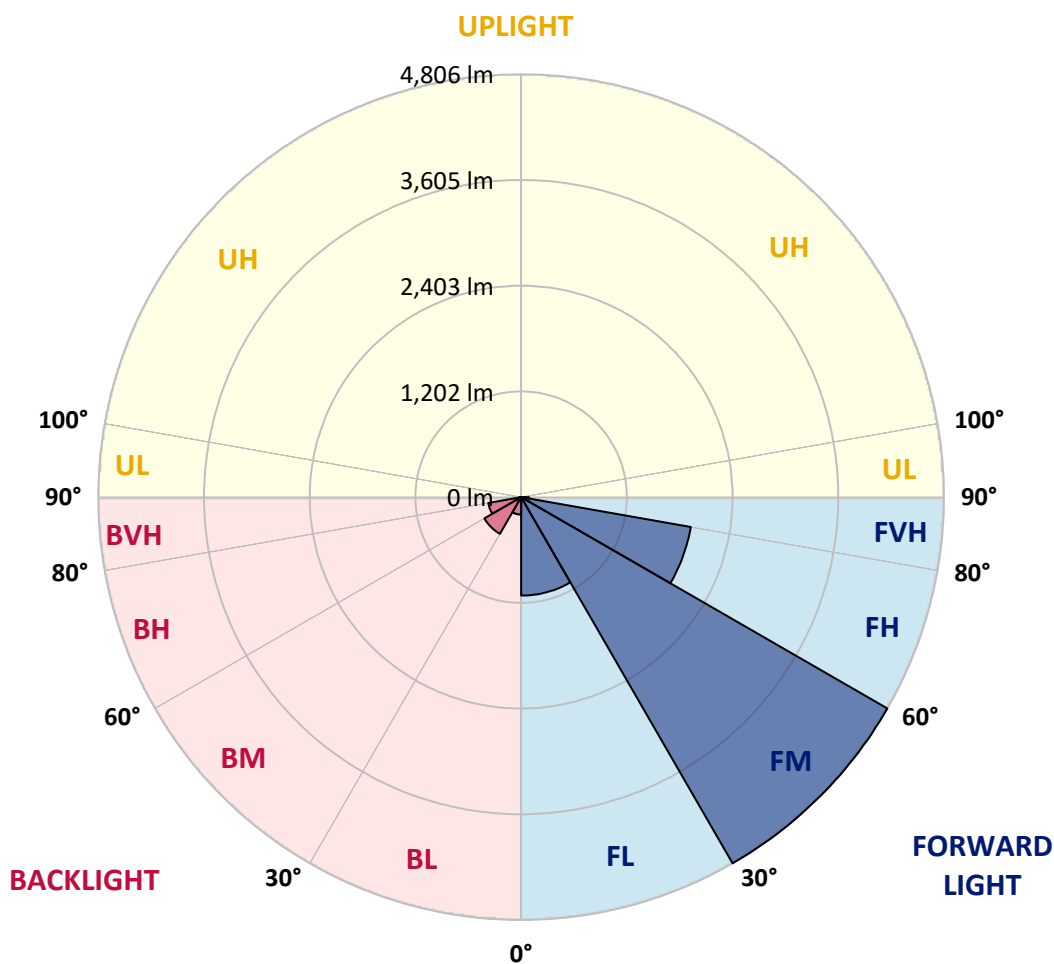
CATALOG NUMBER: MEM2-HSN-SA-90-750-U-T2R-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1119.1 | 12.4 | | | |
| FM | (30°-60°) | 4806.3 | 53.1 | | | |
| FH | (60°-80°) | 1958.7 | 21.6 | | | G2/5000 |
| FVH | (80°-90°) | 89.0 | 1.0 | | | G1/100 |
| BL | (0°-30°) | 198.5 | 2.2 | B1/500 | | |
| BM | (30°-60°) | 482.2 | 5.3 | B1/1000 | | |
| BH | (60°-80°) | 378.8 | 4.2 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 20.1 | 0.2 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 1° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 |
| 2.5° | 1351.7 | 1371.9 | 1356.7 | 1344.1 | 1326.4 | 1308.7 | 1283.5 | 1255.7 | 1220.3 | 1177.4 | 1139.5 |
| 5° | 1657.4 | 1667.5 | 1662.5 | 1654.9 | 1599.3 | 1546.2 | 1493.2 | 1427.5 | 1336.5 | 1255.7 | 1169.8 |
| 7.5° | 1963.1 | 1958.1 | 1945.4 | 1922.7 | 1872.2 | 1811.5 | 1715.5 | 1606.9 | 1478.0 | 1336.5 | 1202.6 |
| 10° | 2230.9 | 2238.5 | 2228.4 | 2193.0 | 2129.9 | 2046.5 | 1930.3 | 1806.5 | 1632.1 | 1435.1 | 1248.1 |
| 12.5° | 2511.4 | 2516.4 | 2516.4 | 2440.6 | 2397.7 | 2268.8 | 2145.0 | 1978.3 | 1783.7 | 1556.3 | 1301.2 |
| 15° | 2786.8 | 2776.6 | 2776.6 | 2726.1 | 2650.3 | 2506.3 | 2367.4 | 2165.2 | 1945.4 | 1670.0 | 1361.8 |
| 17.5° | 3049.5 | 3054.6 | 3031.8 | 2976.2 | 2903.0 | 2764.0 | 2592.2 | 2369.9 | 2104.6 | 1806.5 | 1425.0 |
| 20° | 3309.7 | 3294.6 | 3284.5 | 3228.9 | 3150.6 | 2986.3 | 2822.1 | 2569.5 | 2291.6 | 1960.6 | 1513.4 |
| 22.5° | 3552.3 | 3559.9 | 3534.6 | 3446.2 | 3372.9 | 3223.8 | 3036.9 | 2804.4 | 2488.6 | 2114.7 | 1609.4 |
| 25° | 3865.6 | 3840.3 | 3863.1 | 3756.9 | 3643.2 | 3466.4 | 3254.2 | 3024.2 | 2703.4 | 2304.2 | 1728.1 |
| 27.5° | 4199.1 | 4214.2 | 4201.6 | 4085.4 | 3931.3 | 3693.8 | 3471.4 | 3226.4 | 2920.7 | 2483.6 | 1862.0 |
| 30° | 4696.8 | 4689.2 | 4691.8 | 4517.4 | 4262.2 | 3979.3 | 3706.4 | 3438.6 | 3137.9 | 2703.4 | 2018.7 |
| 32.5° | 5189.5 | 5217.3 | 5149.1 | 4994.9 | 4701.9 | 4274.9 | 3941.4 | 3643.2 | 3347.6 | 2892.9 | 2177.9 |
| 35° | 5586.1 | 5578.6 | 5550.8 | 5379.0 | 5088.4 | 4674.1 | 4209.2 | 3870.6 | 3570.0 | 3125.3 | 2354.7 |
| 37.5° | 5682.1 | 5682.1 | 5664.5 | 5558.3 | 5366.3 | 5007.6 | 4499.7 | 4098.0 | 3797.4 | 3332.5 | 2526.5 |
| 40° | 5619.0 | 5606.4 | 5596.2 | 5525.5 | 5421.9 | 5209.7 | 4805.4 | 4333.0 | 4039.9 | 3600.3 | 2716.0 |
| 42.5° | 5411.8 | 5414.3 | 5401.7 | 5361.3 | 5305.7 | 5224.8 | 4994.9 | 4583.1 | 4277.4 | 3852.9 | 2903.0 |
| 45° | 5133.9 | 5138.9 | 5123.8 | 5118.7 | 5090.9 | 5090.9 | 5037.9 | 4780.2 | 4502.3 | 4110.7 | 3107.6 |
| 47.5° | 4777.7 | 4775.1 | 4767.5 | 4754.9 | 4810.5 | 4871.1 | 4919.1 | 4891.3 | 4701.9 | 4388.6 | 3292.1 |
| 50° | 4234.5 | 4229.4 | 4252.1 | 4315.3 | 4451.7 | 4585.6 | 4727.1 | 4858.5 | 4845.9 | 4646.3 | 3514.4 |
| 52.5° | 3529.6 | 3496.7 | 3522.0 | 3716.5 | 3997.0 | 4295.1 | 4494.7 | 4701.9 | 4919.1 | 4919.1 | 3734.2 |
| 55° | 2468.4 | 2496.2 | 2511.4 | 2796.9 | 3350.2 | 3863.1 | 4214.2 | 4482.1 | 4891.3 | 5136.4 | 3976.7 |
| 57.5° | 1571.5 | 1581.6 | 1627.1 | 1935.3 | 2584.6 | 3226.4 | 3847.9 | 4287.5 | 4787.8 | 5318.3 | 4219.3 |
| 60° | 1058.6 | 1023.2 | 1058.6 | 1235.5 | 1859.5 | 2531.6 | 3309.7 | 4042.4 | 4638.7 | 5449.7 | 4487.1 |
| 62.5° | 747.9 | 745.3 | 755.4 | 859.0 | 1326.4 | 1902.5 | 2635.2 | 3711.5 | 4519.9 | 5457.3 | 4686.7 |
| 65° | 603.8 | 586.2 | 593.7 | 651.8 | 889.3 | 1394.6 | 1932.8 | 3112.7 | 4413.8 | 5323.4 | 4785.2 |
| 67.5° | 485.1 | 477.5 | 482.6 | 520.5 | 667.0 | 1048.5 | 1361.8 | 2367.4 | 4189.0 | 5096.0 | 4729.6 |
| 70° | 396.7 | 399.2 | 401.7 | 439.6 | 530.6 | 793.3 | 972.7 | 1624.6 | 3708.9 | 4838.3 | 4479.5 |
| 72.5° | 343.6 | 343.6 | 346.1 | 371.4 | 444.7 | 629.1 | 735.2 | 1056.1 | 3001.5 | 4560.4 | 4019.7 |
| 75° | 303.2 | 303.2 | 303.2 | 325.9 | 379.0 | 505.3 | 571.0 | 722.6 | 2155.1 | 4045.0 | 3324.9 |
| 77.5° | 262.8 | 265.3 | 265.3 | 285.5 | 325.9 | 394.1 | 439.6 | 500.3 | 1374.4 | 3125.3 | 2516.4 |
| 80° | 202.1 | 202.1 | 204.6 | 227.4 | 277.9 | 308.2 | 323.4 | 353.7 | 722.6 | 1963.1 | 1596.8 |
| 82.5° | 141.5 | 144.0 | 144.0 | 146.5 | 187.0 | 189.5 | 174.3 | 176.9 | 262.8 | 651.8 | 606.4 |
| 85° | 15.2 | 17.7 | 20.2 | 20.2 | 32.8 | 40.4 | 43.0 | 40.4 | 43.0 | 75.8 | 75.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 5.1 | 5.1 | 7.6 | 7.6 | 7.6 | 7.6 |
| 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: P867949

CATALOG NUMBER: MEM2-HSN-SA-90-750-U-T2R-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 | 1121.8 |
| 2.5° | 1119.2 | 1101.6 | 1063.7 | 1030.8 | 1000.5 | 975.2 | 957.6 | 934.8 | 917.1 | 917.1 | 927.2 |
| 5° | 1126.8 | 1086.4 | 1008.1 | 934.8 | 876.7 | 821.1 | 770.6 | 737.7 | 712.5 | 697.3 | 697.3 |
| 7.5° | 1136.9 | 1076.3 | 957.6 | 846.4 | 755.4 | 667.0 | 588.7 | 550.8 | 512.9 | 500.3 | 502.8 |
| 10° | 1157.1 | 1071.2 | 912.1 | 768.1 | 631.6 | 520.5 | 444.7 | 404.2 | 384.0 | 373.9 | 373.9 |
| 12.5° | 1179.9 | 1071.2 | 864.1 | 679.6 | 520.5 | 406.8 | 361.3 | 331.0 | 320.9 | 315.8 | 310.8 |
| 15° | 1210.2 | 1076.3 | 823.6 | 586.2 | 424.5 | 343.6 | 310.8 | 293.1 | 283.0 | 277.9 | 277.9 |
| 17.5° | 1245.6 | 1081.4 | 780.7 | 510.4 | 361.3 | 303.2 | 277.9 | 265.3 | 255.2 | 250.1 | 250.1 |
| 20° | 1291.1 | 1094.0 | 737.7 | 442.1 | 315.8 | 277.9 | 255.2 | 242.5 | 232.4 | 229.9 | 227.4 |
| 22.5° | 1346.6 | 1114.2 | 694.8 | 386.6 | 285.5 | 252.7 | 232.4 | 222.3 | 214.8 | 209.7 | 209.7 |
| 25° | 1412.3 | 1139.5 | 661.9 | 346.1 | 262.8 | 235.0 | 217.3 | 204.6 | 197.1 | 194.5 | 194.5 |
| 27.5° | 1503.3 | 1182.4 | 629.1 | 315.8 | 245.1 | 217.3 | 199.6 | 189.5 | 181.9 | 179.4 | 176.9 |
| 30° | 1589.2 | 1235.5 | 613.9 | 308.2 | 232.4 | 202.1 | 189.5 | 176.9 | 169.3 | 166.8 | 164.2 |
| 32.5° | 1700.3 | 1296.1 | 603.8 | 308.2 | 227.4 | 192.0 | 176.9 | 166.8 | 159.2 | 156.6 | 154.1 |
| 35° | 1819.1 | 1366.8 | 603.8 | 318.3 | 229.9 | 184.4 | 166.8 | 156.6 | 149.1 | 144.0 | 144.0 |
| 37.5° | 1947.9 | 1437.6 | 608.9 | 333.5 | 237.5 | 179.4 | 156.6 | 146.5 | 139.0 | 136.4 | 136.4 |
| 40° | 2084.4 | 1533.6 | 619.0 | 346.1 | 245.1 | 176.9 | 146.5 | 139.0 | 131.4 | 126.3 | 126.3 |
| 42.5° | 2210.7 | 1609.4 | 636.7 | 361.3 | 250.1 | 174.3 | 139.0 | 131.4 | 123.8 | 121.3 | 121.3 |
| 45° | 2357.2 | 1692.8 | 651.8 | 371.4 | 250.1 | 166.8 | 131.4 | 123.8 | 118.7 | 116.2 | 113.7 |
| 47.5° | 2473.5 | 1761.0 | 659.4 | 376.5 | 245.1 | 159.2 | 123.8 | 118.7 | 113.7 | 108.6 | 111.2 |
| 50° | 2615.0 | 1834.3 | 672.1 | 379.0 | 235.0 | 149.1 | 118.7 | 111.2 | 106.1 | 103.6 | 103.6 |
| 52.5° | 2751.4 | 1907.5 | 682.2 | 373.9 | 222.3 | 136.4 | 111.2 | 106.1 | 101.1 | 96.0 | 96.0 |
| 55° | 2913.1 | 1988.4 | 697.3 | 366.3 | 202.1 | 123.8 | 103.6 | 98.5 | 91.0 | 88.4 | 85.9 |
| 57.5° | 3097.5 | 2094.5 | 710.0 | 351.2 | 176.9 | 111.2 | 98.5 | 91.0 | 80.8 | 75.8 | 75.8 |
| 60° | 3266.8 | 2215.8 | 720.1 | 313.3 | 154.1 | 103.6 | 91.0 | 83.4 | 73.3 | 70.7 | 70.7 |
| 62.5° | 3448.7 | 2342.1 | 720.1 | 247.6 | 131.4 | 93.5 | 85.9 | 78.3 | 68.2 | 65.7 | 65.7 |
| 65° | 3575.0 | 2455.8 | 697.3 | 184.4 | 111.2 | 88.4 | 83.4 | 73.3 | 63.2 | 60.6 | 60.6 |
| 67.5° | 3610.4 | 2526.5 | 634.2 | 131.4 | 96.0 | 83.4 | 78.3 | 68.2 | 60.6 | 55.6 | 55.6 |
| 70° | 3496.7 | 2470.9 | 517.9 | 101.1 | 83.4 | 75.8 | 70.7 | 63.2 | 55.6 | 53.1 | 53.1 |
| 72.5° | 3170.8 | 2258.7 | 386.6 | 85.9 | 73.3 | 70.7 | 65.7 | 58.1 | 53.1 | 50.5 | 50.5 |
| 75° | 2655.4 | 1877.2 | 272.9 | 75.8 | 68.2 | 63.2 | 58.1 | 53.1 | 48.0 | 48.0 | 48.0 |
| 77.5° | 2011.1 | 1356.7 | 169.3 | 68.2 | 58.1 | 58.1 | 53.1 | 48.0 | 45.5 | 43.0 | 43.0 |
| 80° | 1298.6 | 856.5 | 96.0 | 48.0 | 40.4 | 43.0 | 37.9 | 32.8 | 32.8 | 30.3 | 30.3 |
| 82.5° | 550.8 | 338.6 | 50.5 | 27.8 | 20.2 | 17.7 | 12.6 | 12.6 | 10.1 | 10.1 | 10.1 |
| 85° | 55.6 | 20.2 | 10.1 | 7.6 | 7.6 | 5.1 | 5.1 | 5.1 | 5.1 | 2.5 | 2.5 |
| 87.5° | 7.6 | 7.6 | 7.6 | 5.1 | 5.1 | 5.1 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 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: SP1-2407-157-6

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-30-750-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-30-750-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-6
 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-30-750-U-5WQ-2**
 Description: Epic Modern Light Square 30W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 5094
 CIE u': 0.2082
 CIE v': 0.4867
 Duv: 0.0032
 CIE x: 0.3430
 CIE y: 0.3564
 CIE z: 0.3006
 Peak Wavelength (nm): 451
 Dominant Wavelength (nm): 568
 Purity: 9.86439
 Rf: 73.7
 Rg: 93

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.6 | R9: | -39.6 |
| R2: | 78.1 | R10: | 47.6 |
| R3: | 84.6 | R11: | 68.2 |
| R4: | 71.6 | R12: | 41.4 |
| R5: | 69.6 | R13: | 70.4 |
| R6: | 69.4 | R14: | 91.4 |
| R7: | 80.9 | R15: | 61.4 |
| R8: | 53.1 | | |



Test Conditions

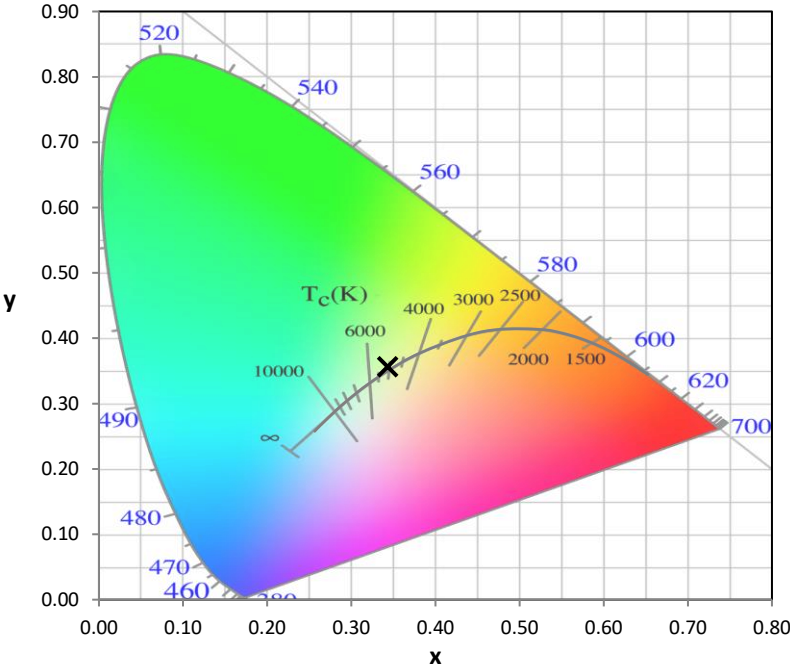
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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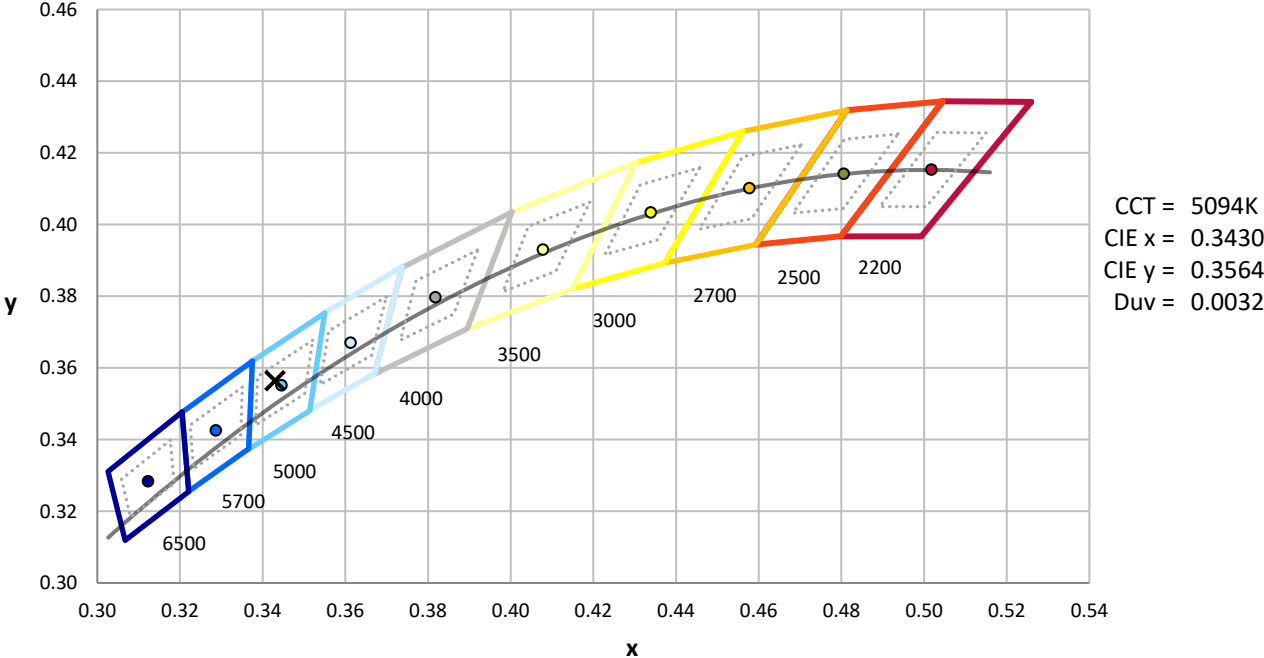
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 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: SP1-2407-157-6

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-6

Photopic Flux vs. Wavelength

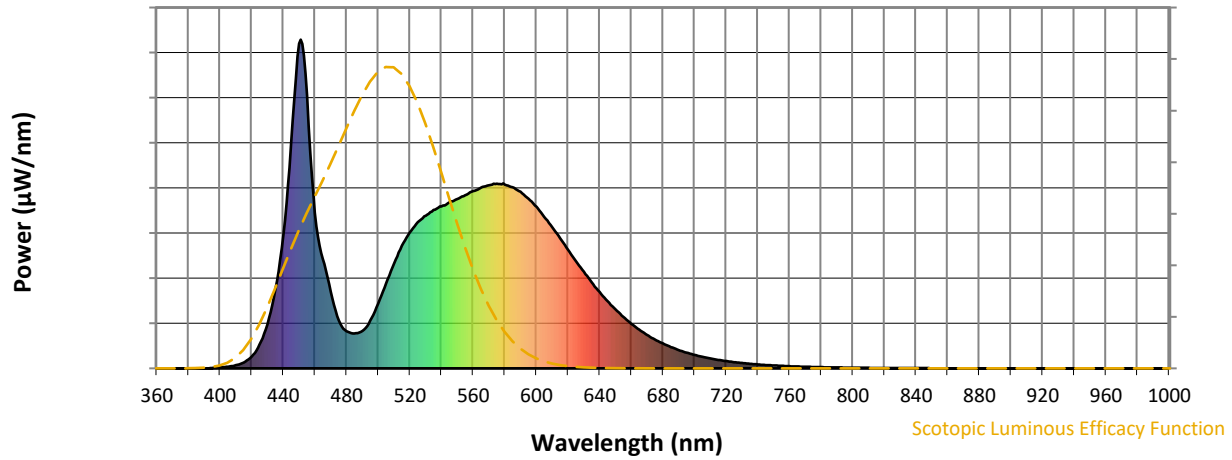


Photopic Lumens: NR

| 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 | 114 | NR | 620 | 361 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 326 | NR | 755 | 8 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 197 | NR | 630 | 294 | NR | 760 | 7 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 259 | NR | 635 | 261 | NR | 765 | 6 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 319 | NR | 640 | 232 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 373 | NR | 645 | 204 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 414 | NR | 650 | 179 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 445 | NR | 655 | 157 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 465 | NR | 660 | 136 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 482 | NR | 665 | 118 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 493 | NR | 670 | 102 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 505 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 515 | NR | 680 | 75 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 72 | NR | 555 | 527 | NR | 685 | 65 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 134 | NR | 560 | 540 | NR | 690 | 56 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 550 | NR | 695 | 48 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 407 | NR | 570 | 557 | NR | 700 | 41 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 561 | NR | 705 | 35 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 988 | NR | 580 | 559 | NR | 710 | 30 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 828 | NR | 585 | 551 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 473 | NR | 590 | 537 | NR | 720 | 22 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 333 | NR | 595 | 516 | NR | 725 | 19 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 491 | NR | 730 | 16 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 146 | NR | 605 | 461 | NR | 735 | 14 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 113 | NR | 610 | 429 | NR | 740 | 12 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 106 | NR | 615 | 395 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-6

Scotopic Flux vs. Wavelength



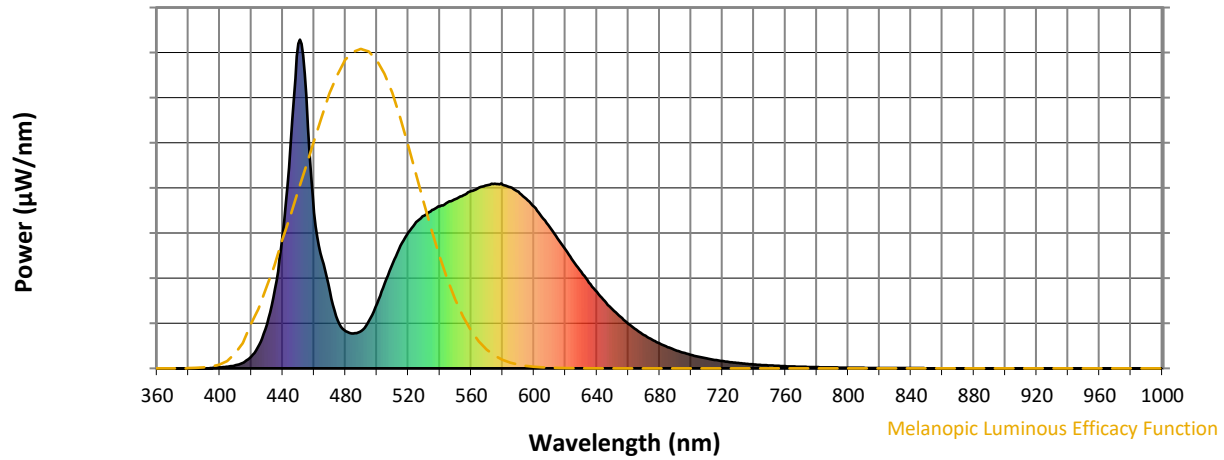
Scotopic Lumens: NR

S/P: 1.81

| 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 | 114 | NR | 620 | 361 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 326 | NR | 755 | 8 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 197 | NR | 630 | 294 | NR | 760 | 7 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 259 | NR | 635 | 261 | NR | 765 | 6 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 319 | NR | 640 | 232 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 373 | NR | 645 | 204 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 414 | NR | 650 | 179 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 445 | NR | 655 | 157 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 465 | NR | 660 | 136 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 482 | NR | 665 | 118 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 493 | NR | 670 | 102 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 505 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 515 | NR | 680 | 75 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 72 | NR | 555 | 527 | NR | 685 | 65 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 134 | NR | 560 | 540 | NR | 690 | 56 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 550 | NR | 695 | 48 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 407 | NR | 570 | 557 | NR | 700 | 41 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 561 | NR | 705 | 35 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 988 | NR | 580 | 559 | NR | 710 | 30 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 828 | NR | 585 | 551 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 473 | NR | 590 | 537 | NR | 720 | 22 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 333 | NR | 595 | 516 | NR | 725 | 19 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 491 | NR | 730 | 16 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 146 | NR | 605 | 461 | NR | 735 | 14 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 113 | NR | 610 | 429 | NR | 740 | 12 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 106 | NR | 615 | 395 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-6

Melanopic Flux vs. Wavelength



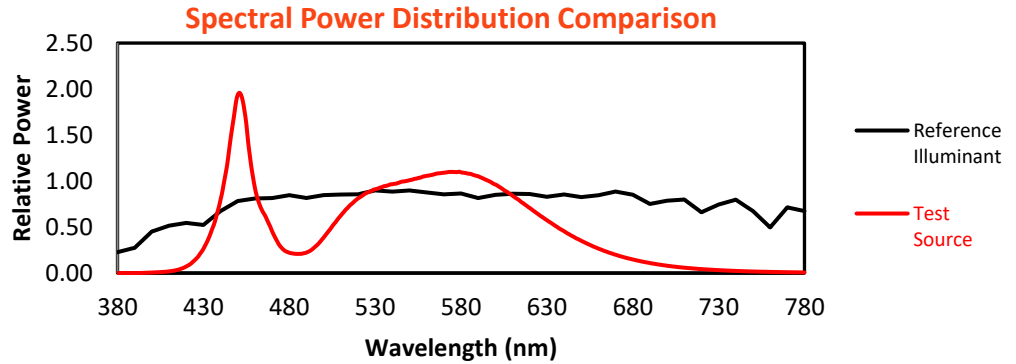
Melanopic Lumens: NR

M/P: 3.73

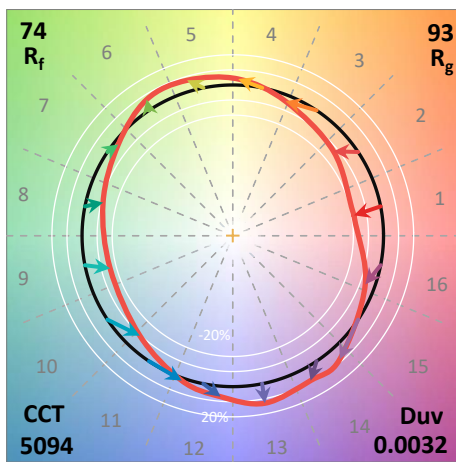
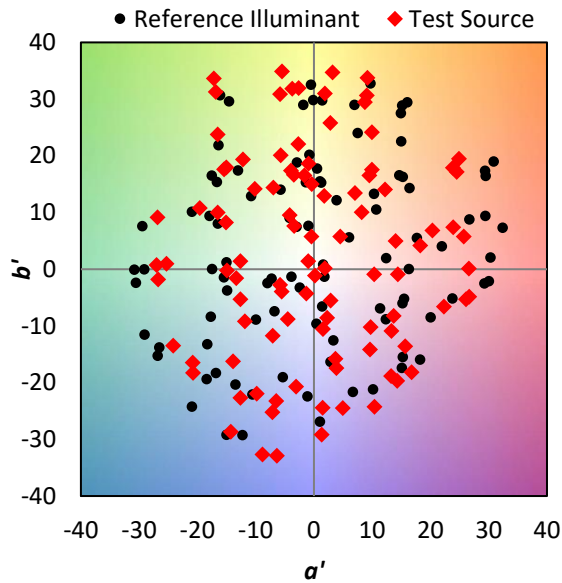
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 114 | NR | 620 | 361 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 326 | NR | 755 | 8 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 197 | NR | 630 | 294 | NR | 760 | 7 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 259 | NR | 635 | 261 | NR | 765 | 6 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 319 | NR | 640 | 232 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 373 | NR | 645 | 204 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 414 | NR | 650 | 179 | NR | 780 | 4 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 445 | NR | 655 | 157 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 465 | NR | 660 | 136 | NR | 790 | 3 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 482 | NR | 665 | 118 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 493 | NR | 670 | 102 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 505 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 515 | NR | 680 | 75 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 72 | NR | 555 | 527 | NR | 685 | 65 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 134 | NR | 560 | 540 | NR | 690 | 56 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 242 | NR | 565 | 550 | NR | 695 | 48 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 407 | NR | 570 | 557 | NR | 700 | 41 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 561 | NR | 705 | 35 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 988 | NR | 580 | 559 | NR | 710 | 30 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 828 | NR | 585 | 551 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 473 | NR | 590 | 537 | NR | 720 | 22 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 333 | NR | 595 | 516 | NR | 725 | 19 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 232 | NR | 600 | 491 | NR | 730 | 16 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 146 | NR | 605 | 461 | NR | 735 | 14 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 113 | NR | 610 | 429 | NR | 740 | 12 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 106 | NR | 615 | 395 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 73.7$
 $R_g = 93$
 $CIE R_a = 72.0$
 $R_9 = -39.6$

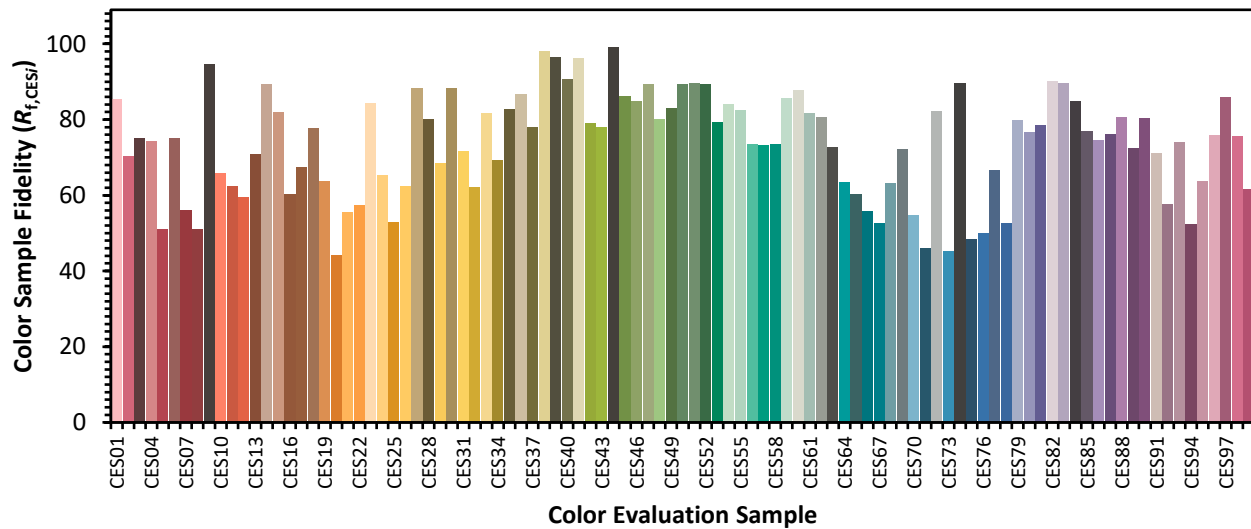


Color Vector Graphics

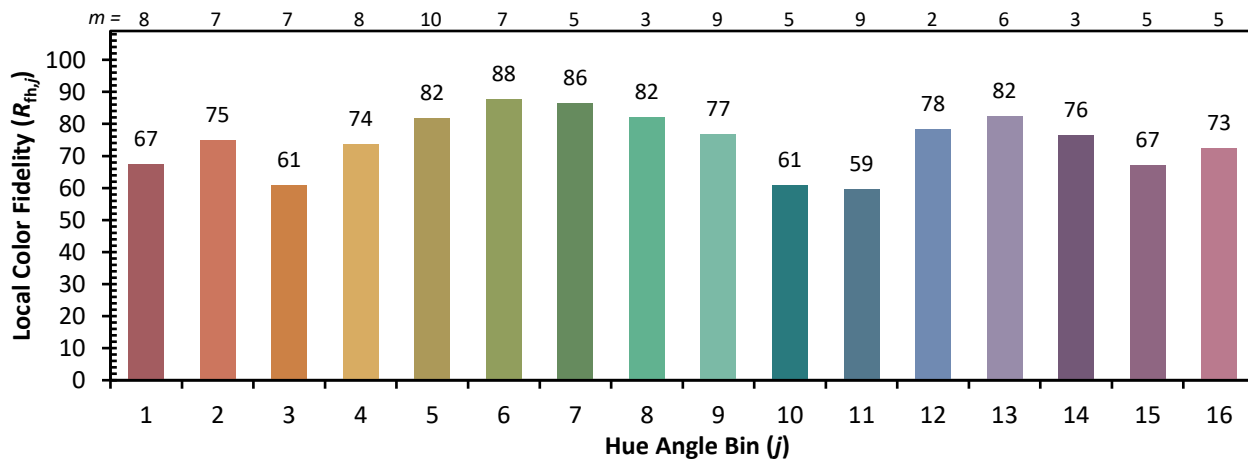
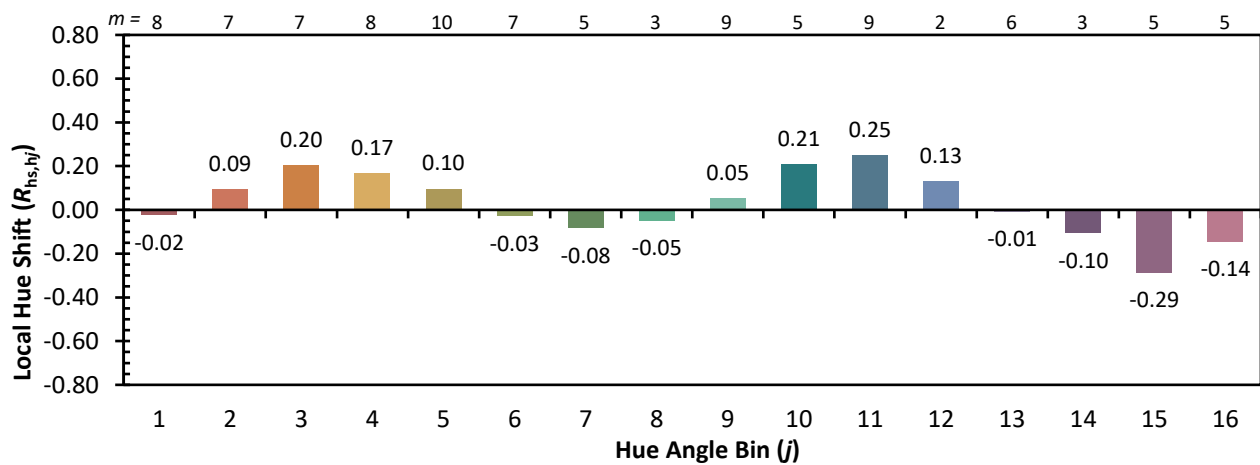


Individual Sample Fidelity Index ($R_{f,i}$)

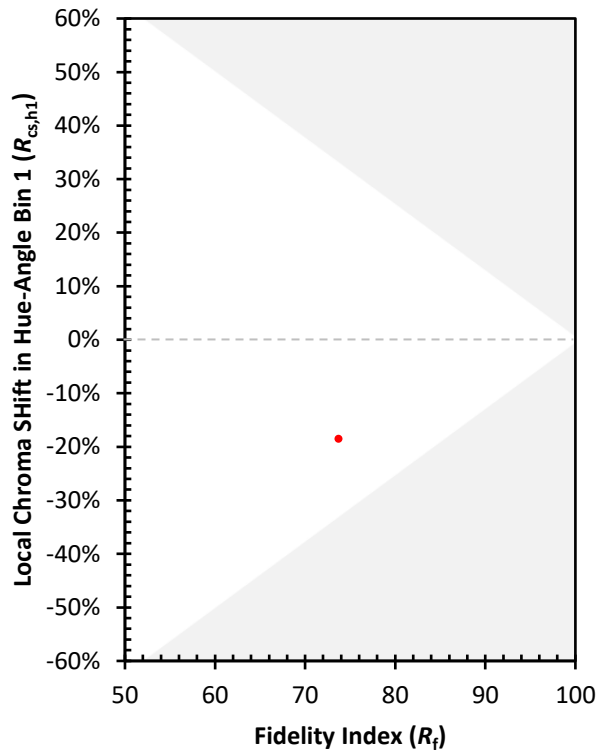
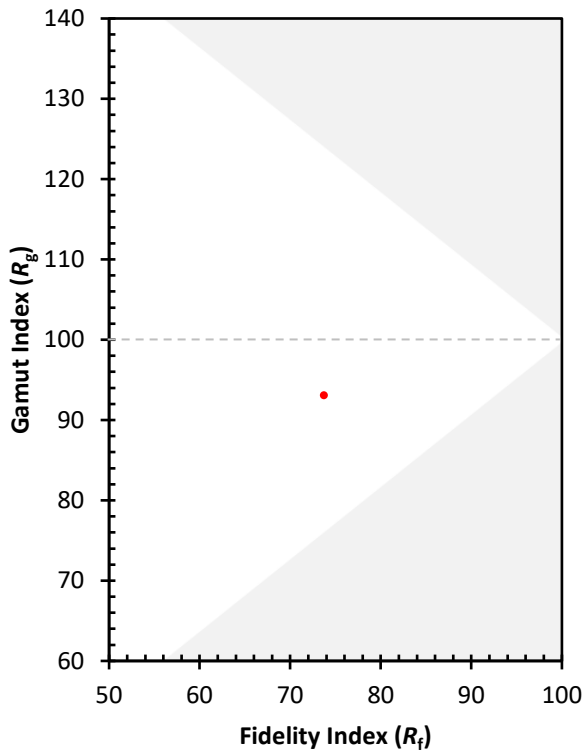
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 62 | CES51 = 90 | CES76 = 50 |
| CES02 = 59 | CES27 = 88 | CES52 = 89 | CES77 = 67 |
| CES03 = 30 | CES28 = 80 | CES53 = 79 | CES78 = 53 |
| CES04 = 69 | CES29 = 69 | CES54 = 84 | CES79 = 80 |
| CES05 = 46 | CES30 = 88 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 72 | CES56 = 74 | CES81 = 78 |
| CES07 = 38 | CES32 = 62 | CES57 = 73 | CES82 = 90 |
| CES08 = 38 | CES33 = 82 | CES58 = 73 | CES83 = 90 |
| CES09 = 29 | CES34 = 69 | CES59 = 86 | CES84 = 85 |
| CES10 = 72 | CES35 = 83 | CES60 = 88 | CES85 = 77 |
| CES11 = 56 | CES36 = 87 | CES61 = 82 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 81 | CES87 = 76 |
| CES13 = 41 | CES38 = 98 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 96 | CES64 = 63 | CES89 = 72 |
| CES15 = 70 | CES40 = 91 | CES65 = 60 | CES90 = 80 |
| CES16 = 46 | CES41 = 96 | CES66 = 56 | CES91 = 71 |
| CES17 = 49 | CES42 = 79 | CES67 = 53 | CES92 = 58 |
| CES18 = 55 | CES43 = 78 | CES68 = 63 | CES93 = 74 |
| CES19 = 71 | CES44 = 99 | CES69 = 72 | CES94 = 52 |
| CES20 = 63 | CES45 = 86 | CES70 = 55 | CES95 = 64 |
| CES21 = 85 | CES46 = 85 | CES71 = 46 | CES96 = 76 |
| CES22 = 77 | CES47 = 89 | CES72 = 82 | CES97 = 86 |
| CES23 = 91 | CES48 = 80 | CES73 = 45 | CES98 = 76 |
| CES24 = 90 | CES49 = 83 | CES74 = 90 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 48 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)