

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: P867587

Luminaire Tested: **MEM2-HTN-SA-110-730-U-T2U-HSS**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867587
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-110-730-U-T2U-HSS
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 110W 70CRI 3000K
FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD
Light Source: (30) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

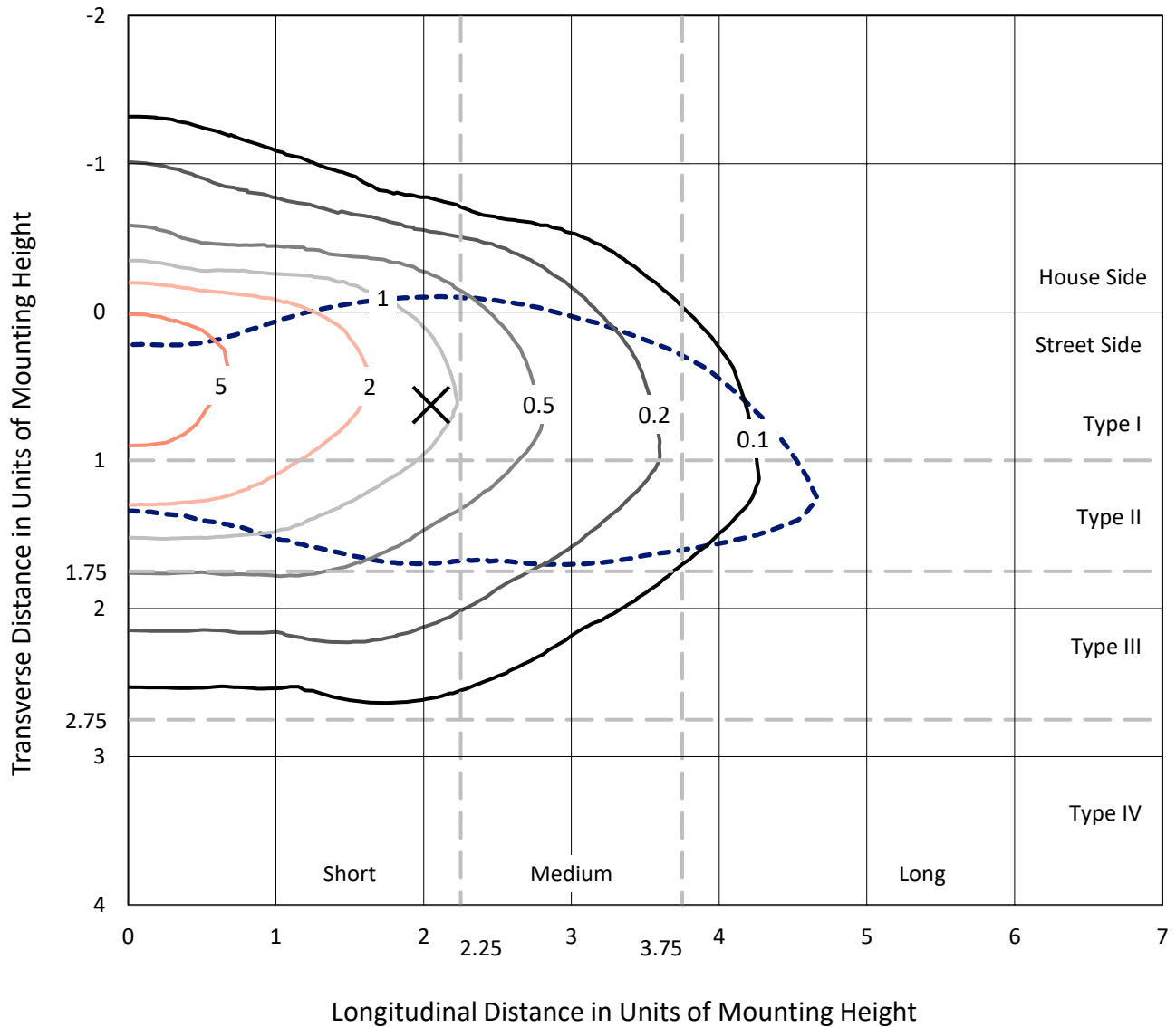
Lumens per Lamp: N/A
Luminaire Lumens: 10788.4 lumens
Efficiency: N/A
Efficacy: 95.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

Input Watts (W): 113
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 7.77%
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

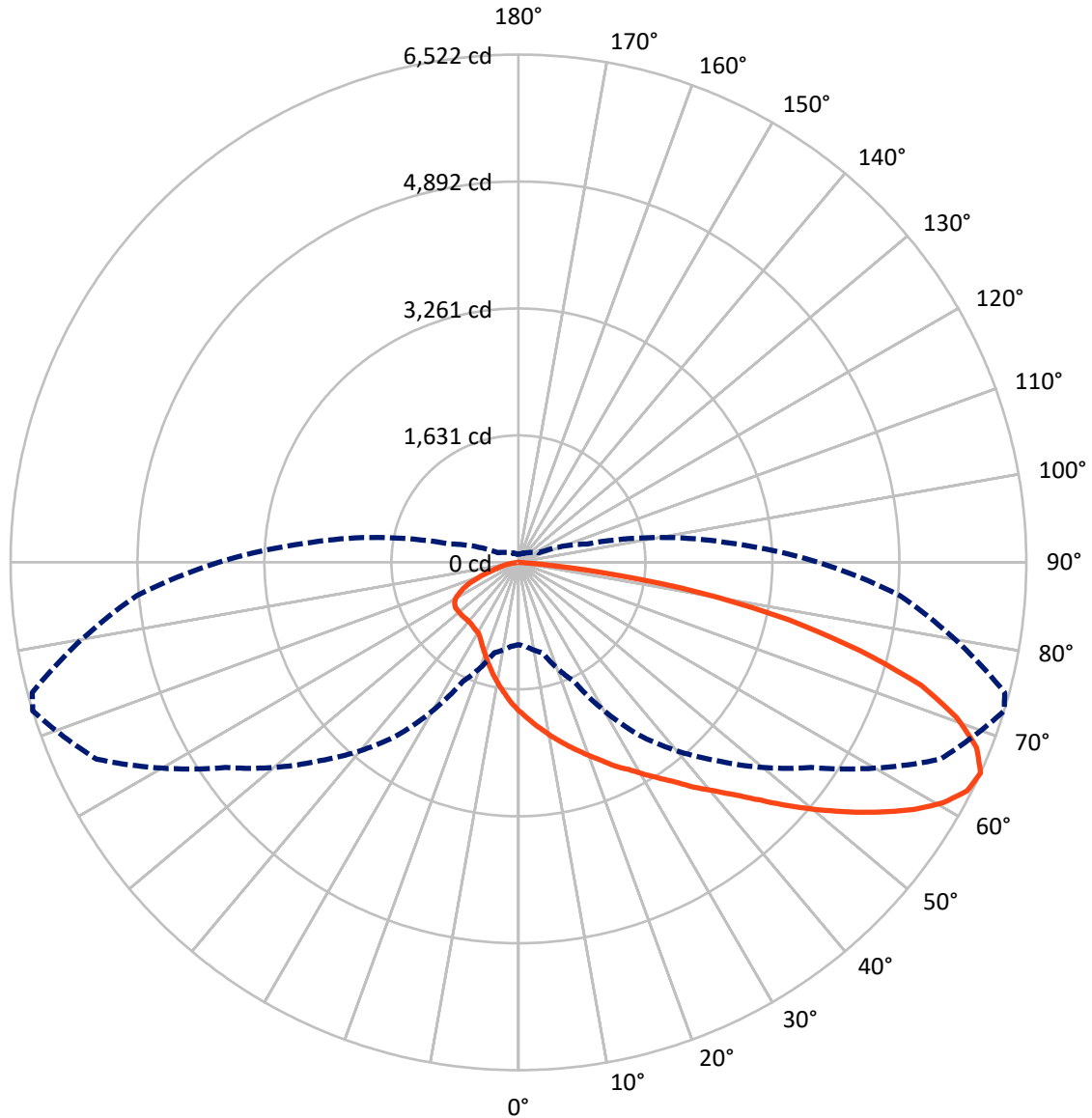
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.7 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 73-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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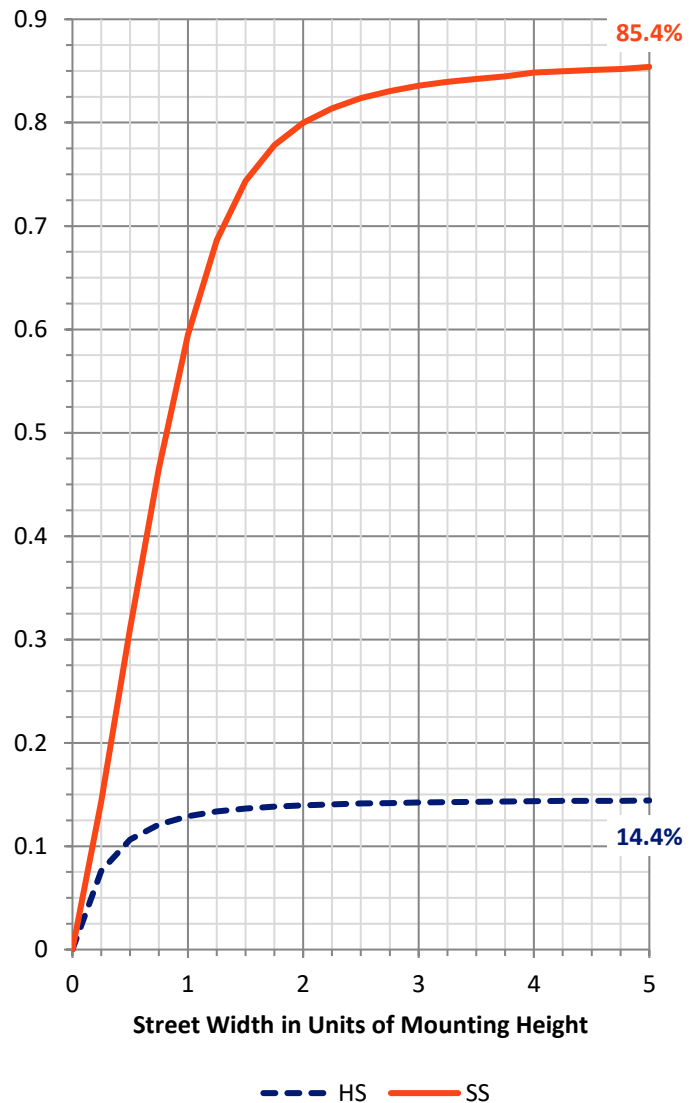
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1568.8 | 0.0 | 1568.8 |
| | % Fixture | 14.5 | 0.0 | 14.5 |
| Street Side | Lumens | 9219.6 | 0.0 | 9219.6 |
| | % Fixture | 85.5 | 0.0 | 85.5 |
| Total | Lumens | 10788.4 | 0.0 | 10788.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 184.7 | 1.7 |
| 10°-20° | 561.5 | 5.2 |
| 20°-30° | 940.3 | 8.7 |
| 30°-40° | 1418.4 | 13.1 |
| 40°-50° | 2004.2 | 18.6 |
| 50°-60° | 2255.1 | 20.9 |
| 60°-70° | 2022.2 | 18.7 |
| 70°-80° | 1229.9 | 11.4 |
| 80°-90° | 172.1 | 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° | 10788.4 | 100.0 |
| 0°-180° | 10788.4 | 100.0 |



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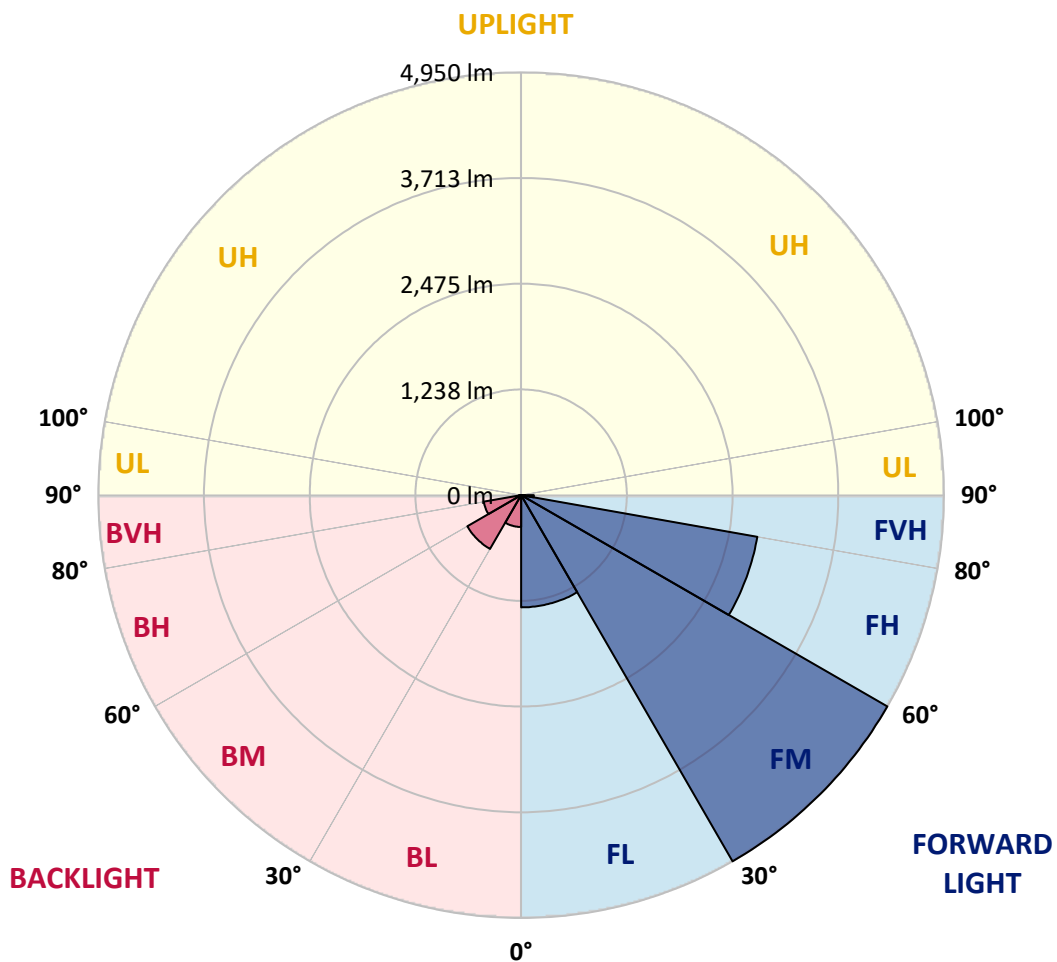
CATALOG NUMBER: MEM2-HTN-SA-110-730-U-T2U-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1313.8 | 12.2 | | | |
| FM (30°-60°) | 4950.2 | 45.9 | | | |
| FH (60°-80°) | 2807.8 | 26.0 | | | G2/5000 |
| FVH (80°-90°) | 147.8 | 1.4 | | | G2/225 |
| BL (0°-30°) | 372.7 | 3.5 | B1/500 | | |
| BM (30°-60°) | 727.5 | 6.7 | B1/1000 | | |
| BH (60°-80°) | 444.4 | 4.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 24.3 | 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





REPORT NUMBER: P867587

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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 73° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 |
| 2.5° | 2209.1 | 2196.4 | 2177.3 | 2161.5 | 2132.9 | 2094.8 | 2063.1 | 2021.8 | 1993.2 | 1983.7 | 1942.5 |
| 5° | 2529.6 | 2513.8 | 2491.5 | 2453.5 | 2377.3 | 2332.8 | 2250.3 | 2155.1 | 2078.9 | 2063.1 | 1967.8 |
| 7.5° | 2859.7 | 2853.4 | 2802.6 | 2745.5 | 2653.4 | 2555.0 | 2428.1 | 2278.9 | 2167.8 | 2142.4 | 1996.4 |
| 10° | 3139.0 | 3110.5 | 3081.9 | 3027.9 | 2929.5 | 2789.9 | 2624.8 | 2418.5 | 2263.0 | 2221.8 | 2025.0 |
| 12.5° | 3307.2 | 3297.7 | 3272.3 | 3208.9 | 3113.6 | 2993.0 | 2796.2 | 2555.0 | 2355.1 | 2297.9 | 2053.5 |
| 15° | 3431.0 | 3440.5 | 3415.2 | 3373.9 | 3275.5 | 3161.2 | 2970.8 | 2697.8 | 2453.5 | 2386.8 | 2085.3 |
| 17.5° | 3548.5 | 3542.1 | 3538.9 | 3491.3 | 3402.5 | 3288.2 | 3094.6 | 2815.3 | 2551.8 | 2478.8 | 2117.0 |
| 20° | 3615.1 | 3618.3 | 3611.9 | 3592.9 | 3507.2 | 3396.1 | 3215.2 | 2954.9 | 2659.8 | 2577.2 | 2158.3 |
| 22.5° | 3650.0 | 3662.7 | 3675.4 | 3672.2 | 3602.4 | 3516.7 | 3329.5 | 3066.0 | 2770.8 | 2685.2 | 2209.1 |
| 25° | 3672.2 | 3681.8 | 3710.3 | 3748.4 | 3684.9 | 3615.1 | 3456.4 | 3199.3 | 2901.0 | 2802.6 | 2269.4 |
| 27.5° | 3691.3 | 3704.0 | 3738.9 | 3796.0 | 3745.2 | 3704.0 | 3567.5 | 3313.6 | 3012.1 | 2923.2 | 2339.2 |
| 30° | 3815.1 | 3830.9 | 3830.9 | 3859.5 | 3802.4 | 3792.9 | 3691.3 | 3450.1 | 3151.7 | 3056.5 | 2428.1 |
| 32.5° | 4142.0 | 4110.3 | 4053.1 | 4024.6 | 3888.1 | 3891.2 | 3811.9 | 3586.6 | 3300.9 | 3205.7 | 2539.2 |
| 35° | 4424.5 | 4424.5 | 4354.6 | 4262.6 | 4043.6 | 3999.2 | 3951.6 | 3767.5 | 3462.8 | 3370.7 | 2685.2 |
| 37.5° | 4697.4 | 4700.6 | 4627.6 | 4548.3 | 4297.5 | 4138.8 | 4113.4 | 3942.0 | 3662.7 | 3554.8 | 2837.5 |
| 40° | 4868.8 | 4887.9 | 4868.8 | 4808.5 | 4567.3 | 4383.2 | 4272.1 | 4138.8 | 3853.2 | 3770.6 | 3012.1 |
| 42.5° | 4897.4 | 4935.5 | 5005.3 | 5024.3 | 4764.1 | 4602.2 | 4475.3 | 4341.9 | 4081.7 | 3989.6 | 3212.0 |
| 45° | 4824.4 | 4837.1 | 4992.6 | 5014.8 | 4910.1 | 4776.8 | 4691.1 | 4580.0 | 4354.6 | 4275.3 | 3434.2 |
| 47.5° | 4624.4 | 4599.0 | 4653.0 | 4846.6 | 4887.9 | 4881.5 | 4903.7 | 4849.8 | 4672.0 | 4570.5 | 3678.6 |
| 50° | 4195.9 | 4205.5 | 4380.0 | 4614.9 | 4757.7 | 4919.6 | 5062.4 | 5122.7 | 4992.6 | 4891.0 | 3942.0 |
| 52.5° | 3415.2 | 3459.6 | 3792.9 | 4348.3 | 4595.9 | 4894.2 | 5176.7 | 5379.8 | 5325.9 | 5227.5 | 4202.3 |
| 55° | 2805.8 | 2872.4 | 3205.7 | 3919.8 | 4373.7 | 4770.4 | 5243.3 | 5649.6 | 5659.1 | 5583.0 | 4440.3 |
| 57.5° | 2196.4 | 2250.3 | 2602.6 | 3256.5 | 4056.3 | 4576.8 | 5252.9 | 5881.3 | 5989.2 | 5900.4 | 4649.8 |
| 60° | 1720.3 | 1758.4 | 1964.7 | 2713.7 | 3665.9 | 4300.7 | 5183.0 | 6065.4 | 6268.5 | 6201.9 | 4830.7 |
| 62.5° | 1304.5 | 1333.1 | 1517.1 | 2145.6 | 3186.6 | 3976.9 | 4948.2 | 6132.1 | 6465.3 | 6401.8 | 4932.3 |
| 65° | 1056.9 | 1082.3 | 1202.9 | 1685.4 | 2713.7 | 3602.4 | 4592.7 | 5979.7 | 6522.4 | 6465.3 | 4919.6 |
| 67.5° | 863.3 | 872.8 | 971.2 | 1314.0 | 2294.8 | 3180.3 | 4072.2 | 5583.0 | 6347.9 | 6344.7 | 4773.6 |
| 70° | 698.3 | 723.7 | 806.2 | 1047.4 | 1907.5 | 2694.7 | 3465.9 | 4960.9 | 5970.2 | 6001.9 | 4481.6 |
| 72.5° | 593.5 | 599.9 | 672.9 | 866.5 | 1555.2 | 2186.8 | 2869.2 | 4243.6 | 5414.7 | 5440.1 | 4024.6 |
| 75° | 501.5 | 511.0 | 565.0 | 701.4 | 1263.2 | 1736.1 | 2307.5 | 3427.9 | 4532.4 | 4640.3 | 3389.8 |
| 77.5° | 431.7 | 434.8 | 472.9 | 577.7 | 898.2 | 1304.5 | 1691.7 | 2570.9 | 3548.5 | 3624.6 | 2662.9 |
| 80° | 339.6 | 346.0 | 387.2 | 457.0 | 625.3 | 847.4 | 1168.0 | 1758.4 | 2370.9 | 2456.6 | 1844.1 |
| 82.5° | 158.7 | 177.7 | 187.3 | 250.7 | 326.9 | 419.0 | 552.3 | 733.2 | 1072.8 | 1069.6 | 860.1 |
| 85° | 15.9 | 12.7 | 12.7 | 19.0 | 28.6 | 28.6 | 34.9 | 41.3 | 82.5 | 98.4 | 76.2 |
| 87.5° | 0.0 | 0.0 | 0.0 | 3.2 | 6.3 | 6.3 | 6.3 | 9.5 | 9.5 | 9.5 | 9.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P867587

CATALOG NUMBER: MEM2-HTN-SA-110-730-U-T2U-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 | 1913.9 |
| 2.5° | 1923.4 | 1894.8 | 1844.1 | 1796.4 | 1764.7 | 1739.3 | 1698.1 | 1672.7 | 1653.6 | 1628.2 | 1625.1 |
| 5° | 1917.1 | 1866.3 | 1764.7 | 1679.0 | 1596.5 | 1526.7 | 1453.7 | 1409.2 | 1361.6 | 1339.4 | 1358.4 |
| 7.5° | 1923.4 | 1840.9 | 1682.2 | 1552.1 | 1428.3 | 1317.2 | 1222.0 | 1161.7 | 1117.2 | 1095.0 | 1098.2 |
| 10° | 1926.6 | 1818.7 | 1612.4 | 1431.4 | 1272.7 | 1142.6 | 1034.7 | 952.2 | 898.2 | 885.5 | 869.7 |
| 12.5° | 1920.2 | 1790.1 | 1542.5 | 1314.0 | 1123.6 | 980.7 | 853.8 | 790.3 | 736.4 | 711.0 | 711.0 |
| 15° | 1926.6 | 1767.9 | 1469.5 | 1206.1 | 990.3 | 825.2 | 717.3 | 647.5 | 615.7 | 593.5 | 596.7 |
| 17.5° | 1926.6 | 1748.8 | 1399.7 | 1101.4 | 860.1 | 707.8 | 609.4 | 552.3 | 520.5 | 507.8 | 504.7 |
| 20° | 1948.8 | 1733.0 | 1333.1 | 1003.0 | 745.9 | 603.0 | 523.7 | 479.3 | 453.9 | 441.2 | 434.8 |
| 22.5° | 1964.7 | 1720.3 | 1272.7 | 907.7 | 650.7 | 526.9 | 460.2 | 419.0 | 399.9 | 393.6 | 393.6 |
| 25° | 1993.2 | 1717.1 | 1218.8 | 815.7 | 574.5 | 469.7 | 409.4 | 377.7 | 361.8 | 355.5 | 355.5 |
| 27.5° | 2034.5 | 1723.4 | 1168.0 | 736.4 | 517.4 | 412.6 | 368.2 | 342.8 | 333.3 | 330.1 | 326.9 |
| 30° | 2094.8 | 1752.0 | 1136.3 | 676.0 | 463.4 | 377.7 | 336.4 | 320.6 | 314.2 | 311.0 | 311.0 |
| 32.5° | 2174.1 | 1802.8 | 1123.6 | 644.3 | 431.7 | 349.1 | 314.2 | 301.5 | 295.2 | 295.2 | 292.0 |
| 35° | 2272.5 | 1859.9 | 1114.1 | 615.7 | 409.4 | 330.1 | 298.4 | 285.7 | 282.5 | 282.5 | 282.5 |
| 37.5° | 2390.0 | 1920.2 | 1098.2 | 596.7 | 396.7 | 314.2 | 285.7 | 273.0 | 273.0 | 273.0 | 273.0 |
| 40° | 2520.1 | 2009.1 | 1095.0 | 584.0 | 387.2 | 304.7 | 273.0 | 260.3 | 260.3 | 260.3 | 260.3 |
| 42.5° | 2666.1 | 2104.3 | 1091.8 | 574.5 | 380.9 | 298.4 | 260.3 | 247.6 | 247.6 | 247.6 | 247.6 |
| 45° | 2843.8 | 2224.9 | 1098.2 | 568.1 | 380.9 | 292.0 | 250.7 | 234.9 | 231.7 | 231.7 | 231.7 |
| 47.5° | 3018.4 | 2339.2 | 1104.5 | 561.8 | 374.5 | 282.5 | 238.0 | 222.2 | 219.0 | 215.8 | 215.8 |
| 50° | 3205.7 | 2456.6 | 1104.5 | 555.4 | 368.2 | 273.0 | 228.5 | 206.3 | 203.1 | 200.0 | 200.0 |
| 52.5° | 3389.8 | 2555.0 | 1107.7 | 545.9 | 352.3 | 257.1 | 212.7 | 193.6 | 187.3 | 184.1 | 180.9 |
| 55° | 3567.5 | 2659.8 | 1110.9 | 530.0 | 333.3 | 241.2 | 203.1 | 180.9 | 171.4 | 165.0 | 165.0 |
| 57.5° | 3700.8 | 2745.5 | 1095.0 | 498.3 | 307.9 | 225.3 | 187.3 | 165.0 | 152.3 | 146.0 | 146.0 |
| 60° | 3827.8 | 2799.4 | 1066.4 | 450.7 | 282.5 | 209.5 | 174.6 | 149.2 | 136.5 | 130.1 | 130.1 |
| 62.5° | 3878.6 | 2808.9 | 999.8 | 368.2 | 250.7 | 193.6 | 158.7 | 136.5 | 127.0 | 123.8 | 123.8 |
| 65° | 3850.0 | 2767.7 | 910.9 | 292.0 | 222.2 | 174.6 | 146.0 | 127.0 | 114.3 | 104.7 | 104.7 |
| 67.5° | 3694.5 | 2624.8 | 790.3 | 231.7 | 193.6 | 158.7 | 133.3 | 114.3 | 101.6 | 92.0 | 92.0 |
| 70° | 3399.3 | 2396.3 | 615.7 | 184.1 | 168.2 | 139.7 | 120.6 | 104.7 | 92.0 | 82.5 | 82.5 |
| 72.5° | 2964.5 | 2078.9 | 447.5 | 155.5 | 146.0 | 123.8 | 107.9 | 95.2 | 82.5 | 76.2 | 76.2 |
| 75° | 2443.9 | 1602.8 | 317.4 | 133.3 | 130.1 | 111.1 | 98.4 | 85.7 | 76.2 | 69.8 | 69.8 |
| 77.5° | 1834.5 | 1117.2 | 247.6 | 117.4 | 114.3 | 101.6 | 88.9 | 79.3 | 69.8 | 66.7 | 63.5 |
| 80° | 1222.0 | 691.9 | 187.3 | 88.9 | 85.7 | 79.3 | 73.0 | 66.7 | 57.1 | 50.8 | 50.8 |
| 82.5° | 545.9 | 292.0 | 95.2 | 50.8 | 44.4 | 38.1 | 31.7 | 22.2 | 22.2 | 19.0 | 19.0 |
| 85° | 57.1 | 38.1 | 19.0 | 12.7 | 12.7 | 9.5 | 9.5 | 9.5 | 6.3 | 6.3 | 6.3 |
| 87.5° | 9.5 | 9.5 | 6.3 | 6.3 | 6.3 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| 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: SP1-2407-157-4

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-30-730-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-30-730-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-4
 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-30-730-U-5WQ-2**
 Description: Epic Modern Light Square 30W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 3057
 CIE u': 0.2487
 CIE v': 0.5199
 Duv: -0.0002
 CIE x: 0.4326
 CIE y: 0.4020
 CIE z: 0.1654
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 50.50735
 Rf: 74.6
 Rg: 94

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 68.1 | R9: | -34.8 |
| R2: | 82.0 | R10: | 58.5 |
| R3: | 93.5 | R11: | 62.5 |
| R4: | 67.5 | R12: | 47.5 |
| R5: | 67.2 | R13: | 70.7 |
| R6: | 74.9 | R14: | 96.4 |
| R7: | 77.4 | R15: | 60.0 |
| R8: | 43.1 | | |



Test Conditions

Stabilization Time: 21M
 Operation Time: 1H 21M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-4

| 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: SP1-2407-157-4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-4

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 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-4

Scotopic Flux vs. Wavelength



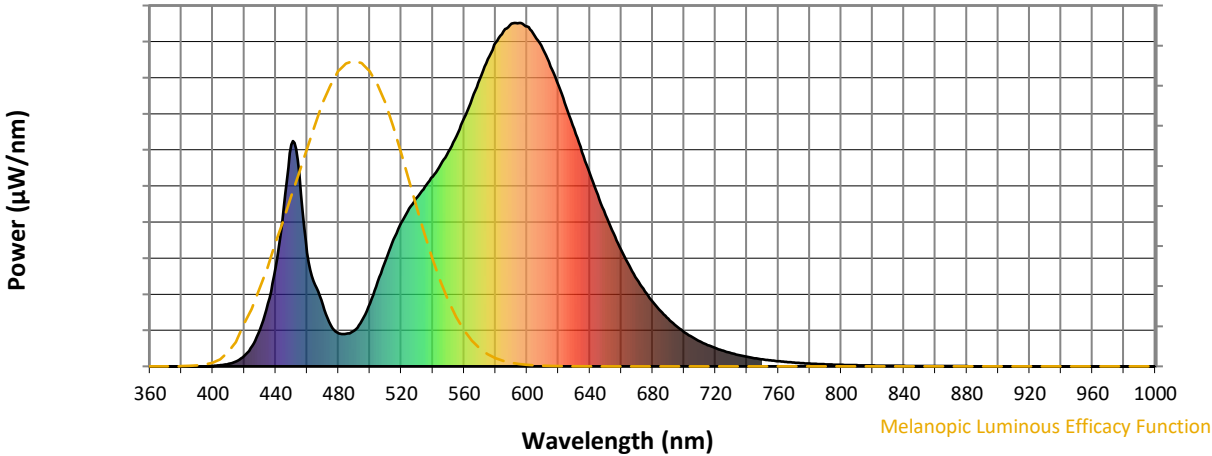
Scotopic Lumens: NR

S/P: 1.23

| 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 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.27

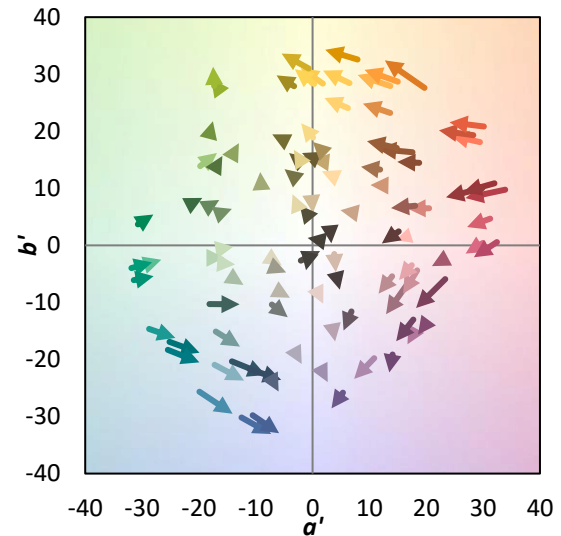
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 74.6$
 $R_g = 94$
 $CIE R_a = 71.7$
 $R_9 = -34.8$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 87 | CES76 = 58 |
| CES02 = 62 | CES27 = 89 | CES52 = 85 | CES77 = 76 |
| CES03 = 31 | CES28 = 84 | CES53 = 77 | CES78 = 61 |
| CES04 = 71 | CES29 = 68 | CES54 = 85 | CES79 = 86 |
| CES05 = 49 | CES30 = 83 | CES55 = 84 | CES80 = 83 |
| CES06 = 51 | CES31 = 71 | CES56 = 74 | CES81 = 73 |
| CES07 = 41 | CES32 = 64 | CES57 = 74 | CES82 = 93 |
| CES08 = 40 | CES33 = 78 | CES58 = 75 | CES83 = 91 |
| CES09 = 29 | CES34 = 75 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 87 | CES60 = 90 | CES85 = 75 |
| CES11 = 59 | CES36 = 92 | CES61 = 81 | CES86 = 64 |
| CES12 = 65 | CES37 = 84 | CES62 = 89 | CES87 = 77 |
| CES13 = 43 | CES38 = 92 | CES63 = 75 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 65 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 64 | CES90 = 80 |
| CES16 = 47 | CES41 = 93 | CES66 = 60 | CES91 = 78 |
| CES17 = 50 | CES42 = 86 | CES67 = 58 | CES92 = 56 |
| CES18 = 56 | CES43 = 77 | CES68 = 66 | CES93 = 73 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 60 | CES95 = 66 |
| CES21 = 87 | CES46 = 81 | CES71 = 56 | CES96 = 76 |
| CES22 = 79 | CES47 = 86 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 95 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 60 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)