

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: INVUE

Report Number: P868546

Luminaire Tested: **EMM2-HTN-SA2B-750-U-T3**

Issue Date: 08/22/2024



Test Information

Test Method: LM-79-08
Report Number: P868546
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/22/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HTN-SA2B-750-U-T3
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 100W 70CRI 5000K
FIXTURE w/ TYPE III DISTRIBUTION OPTIC
Light Source: (20) 5000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

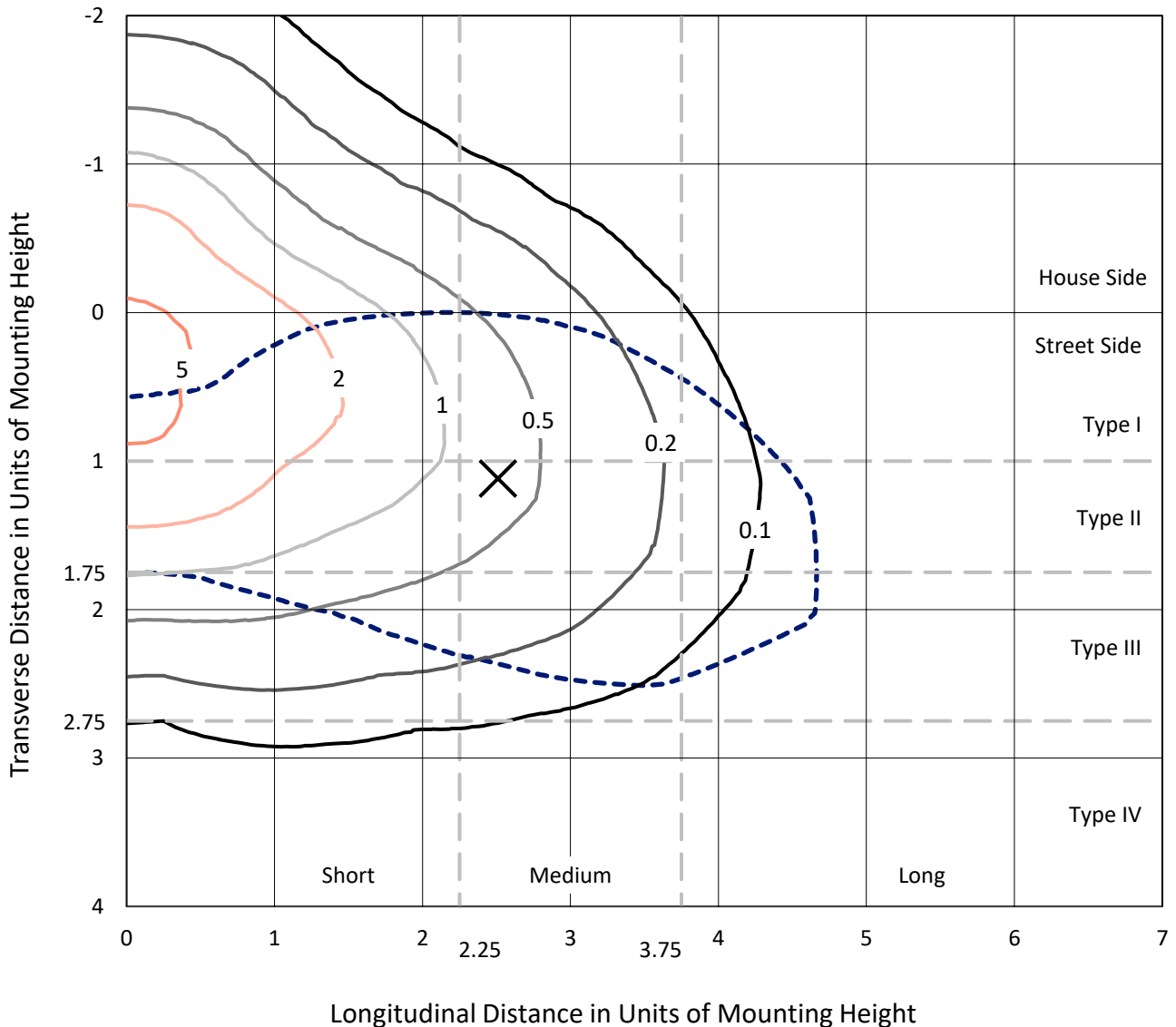
Lumens per Lamp: N/A
Luminaire Lumens: 12715.6 lumens
Efficiency: N/A
Efficacy: 141.3 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G2

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

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Iso-Footcandle Lines of Horizontal Illumination

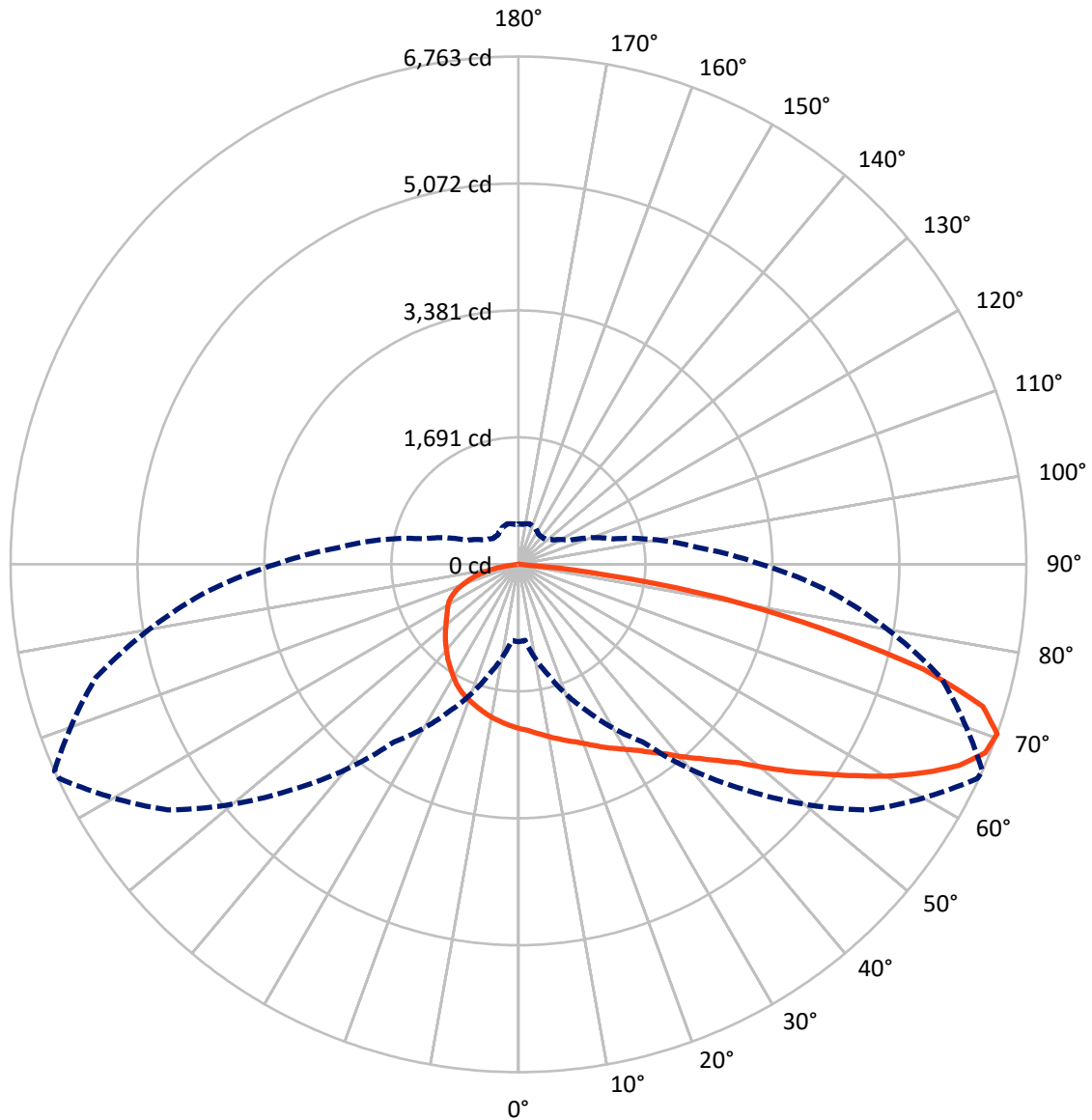
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.9 fc
 Type III - Medium - N/A

REPORT NUMBER: P868546
CATALOG NUMBER: EMM2-HTN-SA2B-750-U-T3

Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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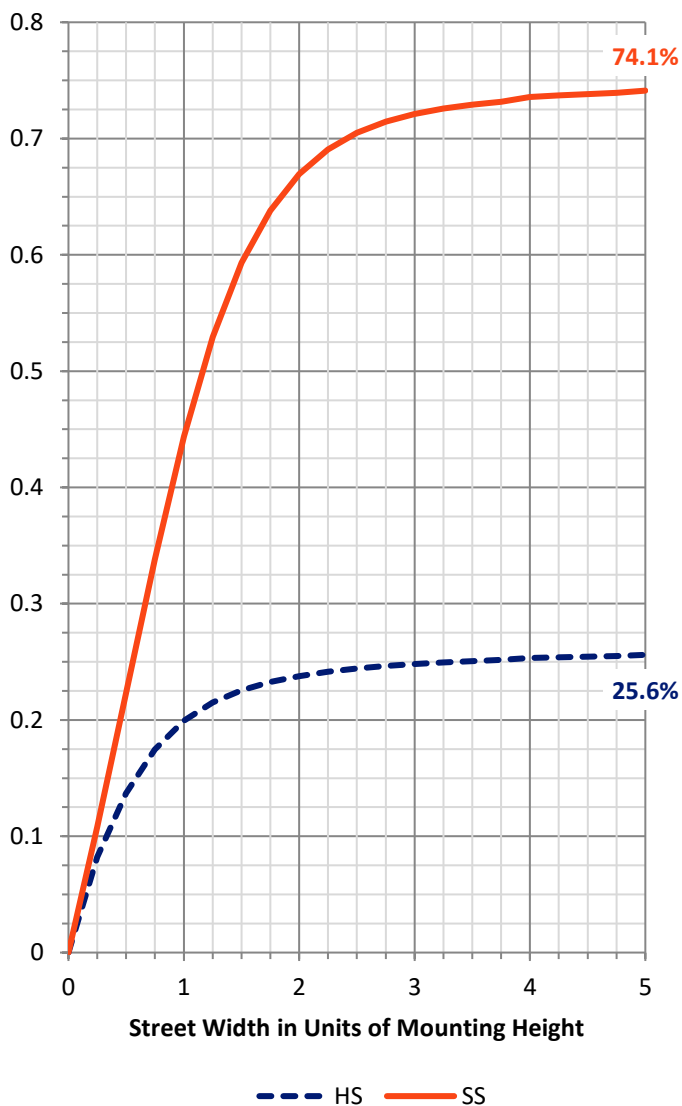
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3276.9 | 0.0 | 3276.9 |
| | % Fixture | 25.8 | 0.0 | 25.8 |
| Street Side | Lumens | 9438.7 | 0.0 | 9438.7 |
| | % Fixture | 74.2 | 0.0 | 74.2 |
| Total | Lumens | 12715.6 | 0.0 | 12715.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 209.4 | 1.6 |
| 10°-20° | 623.6 | 4.9 |
| 20°-30° | 1047.5 | 8.2 |
| 30°-40° | 1578.1 | 12.4 |
| 40°-50° | 2142.5 | 16.8 |
| 50°-60° | 2545.9 | 20.0 |
| 60°-70° | 2598.2 | 20.4 |
| 70°-80° | 1737.9 | 13.7 |
| 80°-90° | 232.5 | 1.8 |
| 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° | 12715.6 | 100.0 |
| 0°-180° | 12715.6 | 100.0 |

Coefficient of Utilization



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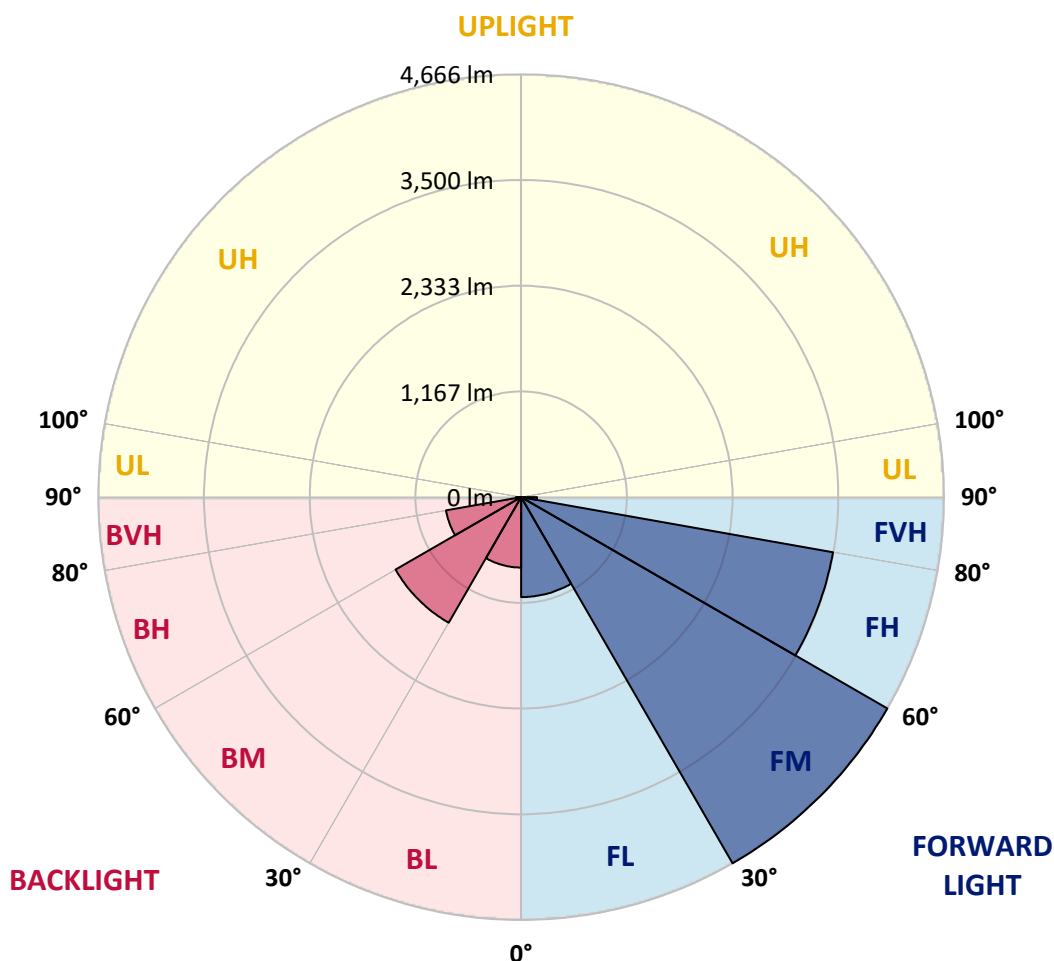
CATALOG NUMBER: EMM2-HTN-SA2B-750-U-T3

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1103.5 | 8.7 | | | |
| FM | (30°-60°) | 4666.4 | 36.7 | | | |
| FH | (60°-80°) | 3494.7 | 27.5 | | | G2/5000 |
| FVH | (80°-90°) | 174.1 | 1.4 | | | G2/225 |
| BL | (0°-30°) | 777.0 | 6.1 | B2/1000 | | |
| BM | (30°-60°) | 1600.1 | 12.6 | B2/2500 | | |
| BH | (60°-80°) | 841.4 | 6.6 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 58.4 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type III Medium





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 CATALOG NUMBER: EMM2-HTN-SA2B-750-U-T3

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 |
| 2.5° | 2266.1 | 2256.0 | 2248.4 | 2253.5 | 2238.3 | 2243.4 | 2225.7 | 2213.0 | 2210.5 | 2205.5 | 2200.4 |
| 5° | 2336.8 | 2336.8 | 2324.2 | 2324.2 | 2306.5 | 2304.0 | 2278.7 | 2250.9 | 2250.9 | 2233.3 | 2213.0 |
| 7.5° | 2412.6 | 2407.6 | 2392.4 | 2389.9 | 2369.7 | 2364.6 | 2336.8 | 2293.9 | 2291.4 | 2258.5 | 2228.2 |
| 10° | 2465.7 | 2468.2 | 2458.1 | 2458.1 | 2442.9 | 2430.3 | 2389.9 | 2344.4 | 2339.4 | 2296.4 | 2248.4 |
| 12.5° | 2506.1 | 2511.1 | 2508.6 | 2508.6 | 2496.0 | 2496.0 | 2450.5 | 2389.9 | 2384.8 | 2329.3 | 2261.0 |
| 15° | 2549.0 | 2546.5 | 2554.1 | 2556.6 | 2551.6 | 2544.0 | 2511.1 | 2440.4 | 2437.9 | 2364.6 | 2278.7 |
| 17.5° | 2586.9 | 2584.4 | 2586.9 | 2599.6 | 2602.1 | 2602.1 | 2569.3 | 2496.0 | 2485.9 | 2407.6 | 2293.9 |
| 20° | 2609.7 | 2614.7 | 2624.8 | 2640.0 | 2647.6 | 2667.8 | 2640.0 | 2561.7 | 2551.6 | 2453.0 | 2326.7 |
| 22.5° | 2695.6 | 2680.4 | 2688.0 | 2698.1 | 2708.2 | 2736.0 | 2710.7 | 2629.9 | 2622.3 | 2521.3 | 2364.6 |
| 25° | 2842.1 | 2842.1 | 2824.4 | 2806.7 | 2794.1 | 2806.7 | 2786.5 | 2708.2 | 2703.1 | 2581.9 | 2407.6 |
| 27.5° | 3097.3 | 3097.3 | 3059.4 | 2993.7 | 2910.3 | 2887.6 | 2872.4 | 2791.6 | 2776.4 | 2647.6 | 2435.4 |
| 30° | 3420.6 | 3430.7 | 3362.5 | 3251.4 | 3097.3 | 2996.2 | 2958.3 | 2869.9 | 2862.3 | 2713.3 | 2478.3 |
| 32.5° | 3766.7 | 3786.9 | 3736.4 | 3574.7 | 3322.1 | 3125.0 | 3064.4 | 2973.5 | 2955.8 | 2791.6 | 2533.9 |
| 35° | 4077.5 | 4097.7 | 4029.5 | 3877.9 | 3554.5 | 3312.0 | 3190.7 | 3087.1 | 3077.0 | 2892.6 | 2617.3 |
| 37.5° | 4330.1 | 4335.1 | 4292.2 | 4107.8 | 3749.0 | 3468.6 | 3347.4 | 3223.6 | 3203.4 | 3013.9 | 2705.7 |
| 40° | 4597.9 | 4618.1 | 4575.1 | 4347.8 | 3925.9 | 3637.9 | 3504.0 | 3387.8 | 3370.1 | 3140.2 | 2789.0 |
| 42.5° | 4878.3 | 4875.8 | 4875.8 | 4554.9 | 4102.7 | 3779.4 | 3673.3 | 3544.4 | 3534.3 | 3269.0 | 2880.0 |
| 45° | 5050.1 | 5060.2 | 5032.4 | 4678.7 | 4362.9 | 3925.9 | 3837.5 | 3744.0 | 3726.3 | 3448.4 | 2998.7 |
| 47.5° | 5093.0 | 5070.3 | 4944.0 | 4774.7 | 4656.0 | 4077.5 | 4044.6 | 3989.0 | 3948.6 | 3645.5 | 3145.3 |
| 50° | 5034.9 | 4999.6 | 4926.3 | 4817.7 | 4764.6 | 4259.4 | 4254.3 | 4282.1 | 4254.3 | 3885.5 | 3314.5 |
| 52.5° | 4817.7 | 4812.6 | 4800.0 | 4825.2 | 4739.4 | 4403.4 | 4491.8 | 4587.8 | 4582.7 | 4130.5 | 3491.4 |
| 55° | 4360.4 | 4393.2 | 4544.8 | 4704.0 | 4643.4 | 4501.9 | 4757.0 | 4941.5 | 4921.2 | 4418.5 | 3673.3 |
| 57.5° | 3893.0 | 3925.9 | 4120.4 | 4499.4 | 4549.9 | 4608.0 | 5055.1 | 5343.1 | 5310.3 | 4731.8 | 3840.0 |
| 60° | 3486.3 | 3450.9 | 3645.5 | 4191.1 | 4418.5 | 4704.0 | 5350.7 | 5749.9 | 5722.1 | 5045.0 | 4011.8 |
| 62.5° | 2842.1 | 2877.5 | 3188.2 | 3741.5 | 4234.1 | 4764.6 | 5593.2 | 6118.7 | 6101.0 | 5333.0 | 4150.7 |
| 65° | 2248.4 | 2200.4 | 2667.8 | 3269.0 | 3915.8 | 4744.4 | 5802.9 | 6464.8 | 6452.2 | 5616.0 | 4256.8 |
| 67.5° | 1528.4 | 1495.6 | 2112.0 | 2799.1 | 3483.8 | 4582.7 | 5850.9 | 6697.2 | 6702.3 | 5782.7 | 4284.6 |
| 70° | 1030.7 | 1015.6 | 1518.3 | 2152.4 | 2885.0 | 4234.1 | 5701.9 | 6745.2 | 6762.9 | 5825.7 | 4160.8 |
| 72.5° | 760.4 | 757.9 | 1111.6 | 1536.0 | 2147.4 | 3574.7 | 5295.1 | 6432.0 | 6464.8 | 5522.5 | 3797.0 |
| 75° | 598.7 | 606.3 | 793.3 | 1091.4 | 1432.4 | 2645.0 | 4453.9 | 5514.9 | 5565.5 | 4769.7 | 3152.8 |
| 77.5° | 490.1 | 490.1 | 555.8 | 783.2 | 957.5 | 1642.1 | 3203.4 | 4037.0 | 4138.1 | 3680.8 | 2427.8 |
| 80° | 396.6 | 404.2 | 411.8 | 545.7 | 634.1 | 937.3 | 1864.4 | 2693.0 | 2766.3 | 2564.2 | 1753.3 |
| 82.5° | 217.3 | 232.4 | 224.8 | 282.9 | 318.3 | 434.5 | 740.2 | 1088.8 | 1200.0 | 1068.6 | 795.8 |
| 85° | 15.2 | 10.1 | 17.7 | 22.7 | 27.8 | 42.9 | 58.1 | 80.8 | 75.8 | 108.6 | 55.6 |
| 87.5° | 2.5 | 2.5 | 2.5 | 5.1 | 5.1 | 7.6 | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 |
| 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: P868546

CATALOG NUMBER: EMM2-HTN-SA2B-750-U-T3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 | 2187.8 |
| 2.5° | 2197.9 | 2185.3 | 2165.0 | 2160.0 | 2152.4 | 2142.3 | 2132.2 | 2117.0 | 2112.0 | 2117.0 | 2122.1 |
| 5° | 2200.4 | 2182.7 | 2149.9 | 2129.7 | 2109.5 | 2091.8 | 2071.6 | 2051.4 | 2038.7 | 2041.3 | 2051.4 |
| 7.5° | 2208.0 | 2182.7 | 2132.2 | 2099.4 | 2066.5 | 2038.7 | 2005.9 | 1983.2 | 1968.0 | 1970.5 | 1978.1 |
| 10° | 2218.1 | 2182.7 | 2122.1 | 2066.5 | 2021.0 | 1980.6 | 1947.8 | 1920.0 | 1904.8 | 1902.3 | 1904.8 |
| 12.5° | 2220.6 | 2180.2 | 2099.4 | 2031.2 | 1975.6 | 1922.5 | 1887.2 | 1861.9 | 1846.7 | 1839.2 | 1844.2 |
| 15° | 2228.2 | 2172.6 | 2076.6 | 1993.3 | 1925.0 | 1869.5 | 1826.5 | 1796.2 | 1786.1 | 1781.0 | 1778.5 |
| 17.5° | 2238.3 | 2170.1 | 2056.4 | 1955.4 | 1874.5 | 1811.4 | 1773.5 | 1743.2 | 1730.5 | 1725.5 | 1730.5 |
| 20° | 2253.5 | 2172.6 | 2033.7 | 1917.5 | 1829.0 | 1765.9 | 1722.9 | 1692.6 | 1682.5 | 1680.0 | 1677.5 |
| 22.5° | 2273.7 | 2177.7 | 2016.0 | 1882.1 | 1778.5 | 1715.4 | 1672.4 | 1652.2 | 1644.6 | 1647.2 | 1647.2 |
| 25° | 2293.9 | 2182.7 | 1990.7 | 1834.1 | 1725.5 | 1659.8 | 1629.5 | 1614.3 | 1619.4 | 1629.5 | 1629.5 |
| 27.5° | 2311.6 | 2180.2 | 1955.4 | 1783.6 | 1662.3 | 1601.7 | 1578.9 | 1581.5 | 1594.1 | 1611.8 | 1614.3 |
| 30° | 2334.3 | 2180.2 | 1917.5 | 1720.4 | 1591.6 | 1533.5 | 1528.4 | 1548.6 | 1568.8 | 1586.5 | 1586.5 |
| 32.5° | 2369.7 | 2195.4 | 1887.2 | 1657.3 | 1518.3 | 1472.8 | 1495.6 | 1523.4 | 1546.1 | 1563.8 | 1568.8 |
| 35° | 2430.3 | 2228.2 | 1866.9 | 1594.1 | 1447.6 | 1414.7 | 1457.7 | 1503.2 | 1518.3 | 1530.9 | 1533.5 |
| 37.5° | 2488.4 | 2258.5 | 1841.7 | 1533.5 | 1374.3 | 1361.7 | 1419.8 | 1467.8 | 1470.3 | 1477.9 | 1477.9 |
| 40° | 2544.0 | 2281.3 | 1808.8 | 1467.8 | 1303.6 | 1303.6 | 1371.8 | 1412.2 | 1407.2 | 1399.6 | 1402.1 |
| 42.5° | 2604.6 | 2293.9 | 1770.9 | 1407.2 | 1245.5 | 1245.5 | 1301.0 | 1336.4 | 1333.9 | 1344.0 | 1351.6 |
| 45° | 2677.9 | 2319.1 | 1720.4 | 1351.6 | 1184.8 | 1174.7 | 1220.2 | 1250.5 | 1288.4 | 1333.9 | 1346.5 |
| 47.5° | 2778.9 | 2354.5 | 1680.0 | 1290.9 | 1134.3 | 1098.9 | 1116.6 | 1179.8 | 1222.7 | 1260.6 | 1265.7 |
| 50° | 2885.0 | 2405.0 | 1644.6 | 1227.8 | 1073.7 | 1010.5 | 1025.7 | 1096.4 | 1121.7 | 1136.8 | 1144.4 |
| 52.5° | 2998.7 | 2445.5 | 1614.3 | 1174.7 | 1010.5 | 919.6 | 939.8 | 1008.0 | 1025.7 | 1038.3 | 1040.8 |
| 55° | 3097.3 | 2478.3 | 1576.4 | 1124.2 | 942.3 | 833.7 | 858.9 | 924.6 | 942.3 | 957.5 | 957.5 |
| 57.5° | 3200.8 | 2508.6 | 1551.2 | 1081.3 | 869.0 | 762.9 | 780.6 | 846.3 | 871.6 | 876.6 | 884.2 |
| 60° | 3286.7 | 2536.4 | 1528.4 | 1040.8 | 800.8 | 699.8 | 712.4 | 770.5 | 800.8 | 803.4 | 808.4 |
| 62.5° | 3347.4 | 2554.1 | 1515.8 | 990.3 | 732.6 | 636.6 | 646.7 | 704.8 | 740.2 | 747.8 | 750.3 |
| 65° | 3385.3 | 2564.2 | 1493.0 | 924.6 | 674.5 | 583.6 | 583.6 | 641.7 | 677.1 | 694.7 | 699.8 |
| 67.5° | 3367.6 | 2546.5 | 1432.4 | 848.8 | 621.5 | 530.5 | 528.0 | 586.1 | 616.4 | 626.5 | 629.1 |
| 70° | 3231.1 | 2442.9 | 1308.6 | 755.4 | 565.9 | 482.5 | 477.5 | 530.5 | 558.3 | 535.6 | 538.1 |
| 72.5° | 2953.3 | 2208.0 | 1139.4 | 661.9 | 507.8 | 437.1 | 432.0 | 477.5 | 480.0 | 480.0 | 477.5 |
| 75° | 2488.4 | 1803.8 | 909.5 | 563.4 | 447.2 | 389.1 | 391.6 | 426.9 | 429.5 | 442.1 | 434.5 |
| 77.5° | 1907.4 | 1336.4 | 709.9 | 449.7 | 378.9 | 346.1 | 358.7 | 371.4 | 389.1 | 406.7 | 389.1 |
| 80° | 1386.9 | 922.1 | 492.6 | 336.0 | 293.1 | 293.1 | 298.1 | 310.7 | 336.0 | 353.7 | 336.0 |
| 82.5° | 593.7 | 406.7 | 227.4 | 166.7 | 144.0 | 141.5 | 144.0 | 144.0 | 176.8 | 181.9 | 159.2 |
| 85° | 45.5 | 37.9 | 27.8 | 27.8 | 22.7 | 12.6 | 12.6 | 10.1 | 7.6 | 7.6 | 7.6 |
| 87.5° | 10.1 | 7.6 | 7.6 | 7.6 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 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-40-750-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-750-U-5WQ-2

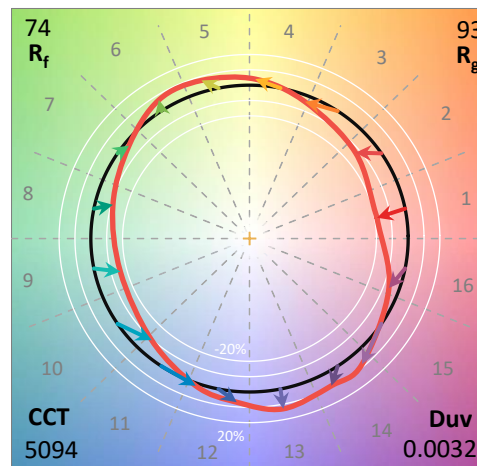
Test Information

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-40-750-U-5WQ-2**
 Description: Epic Modern Light Square 40W 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

REPORT NUMBER: SP1-2407-157-6

| 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

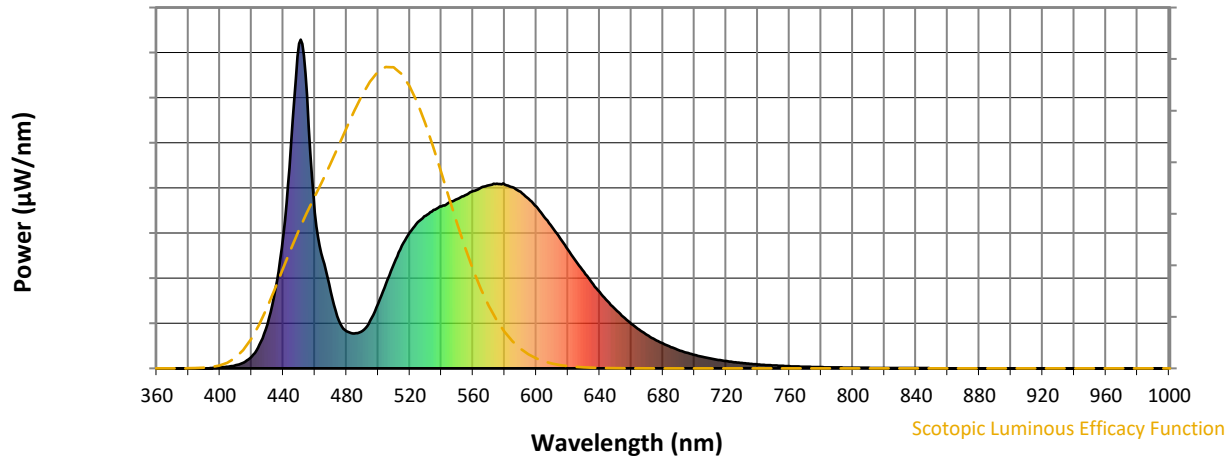


Photopic Lumens: NR

| 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 ($R_{f,i}$)

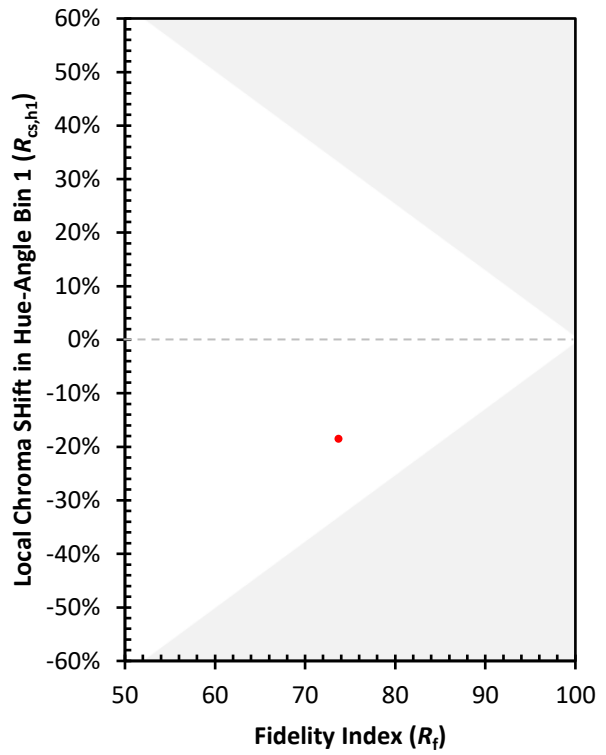
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 62 | CES51 = 90 | CES76 = 50 |
| CES02 = 59 | CES27 = 88 | CES52 = 89 | CES77 = 67 |
| CES03 = 30 | CES28 = 80 | CES53 = 79 | CES78 = 53 |
| CES04 = 69 | CES29 = 69 | CES54 = 84 | CES79 = 80 |
| CES05 = 46 | CES30 = 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)