

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P359152

Luminaire Tested: NVN-SA6B-740-U-T2R

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2019
Report Number: P359152
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-8)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: STREETWORKS
Catalog Number: NVN-SA6B-740-U-T2R
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 36241 lumens
Efficiency: N/A
Efficacy: 145.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G4

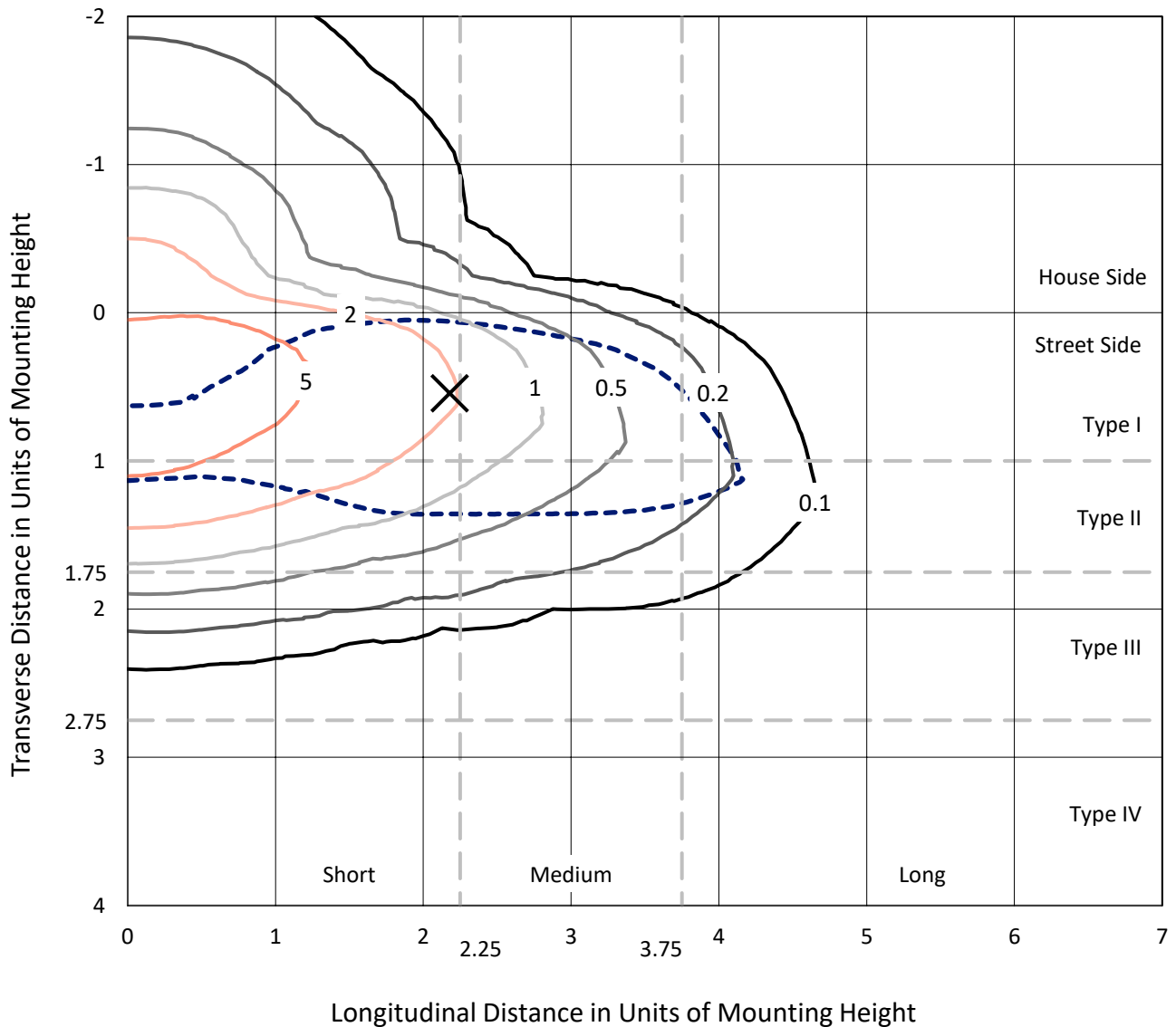
Input Watts (W): 249
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

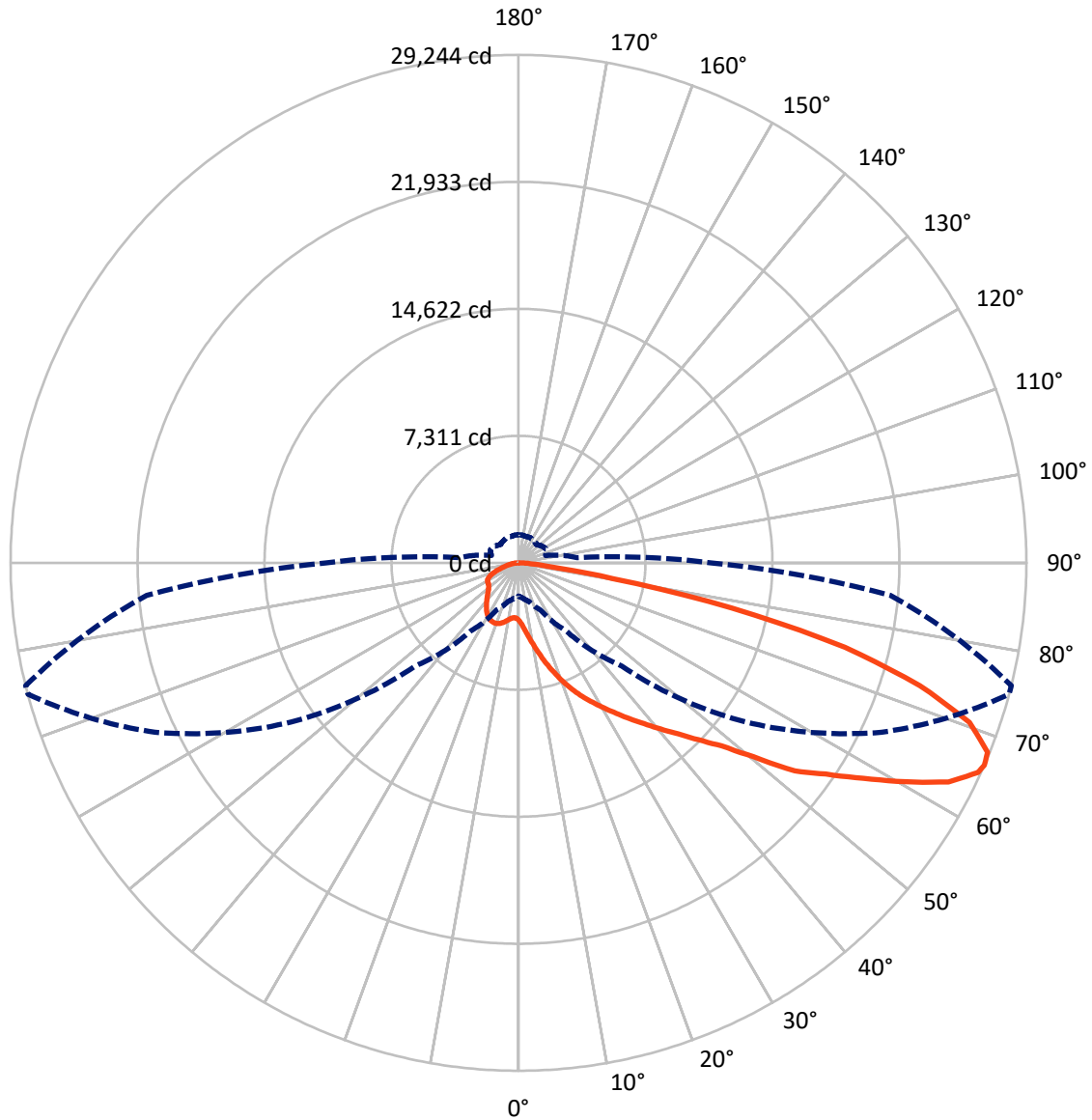
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 9.8 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 66-Deg Vertical

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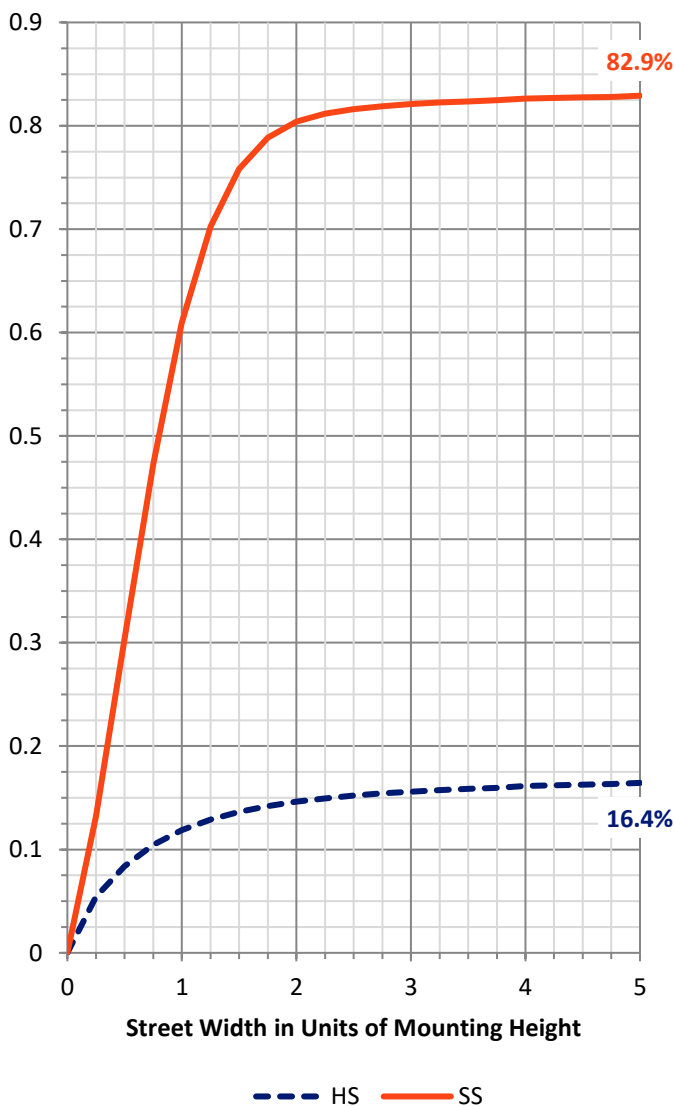
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6098.1 | 0.0 | 6098.1 |
| | % Fixture | 16.8 | 0.0 | 16.8 |
| Street Side | Lumens | 30142.9 | 0.0 | 30142.9 |
| | % Fixture | 83.2 | 0.0 | 83.2 |
| Total | Lumens | 36241.0 | 0.0 | 36241.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 400.2 | 1.1 |
| 10°-20° | 1580.5 | 4.4 |
| 20°-30° | 3071.2 | 8.5 |
| 30°-40° | 5012.9 | 13.8 |
| 40°-50° | 6848.8 | 18.9 |
| 50°-60° | 7977.5 | 22.0 |
| 60°-70° | 7152.0 | 19.7 |
| 70°-80° | 3614.3 | 10.0 |
| 80°-90° | 583.7 | 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° | 36241.0 | 100.0 |
| 0°-180° | 36241.0 | 100.0 |

Coefficient of Utilization

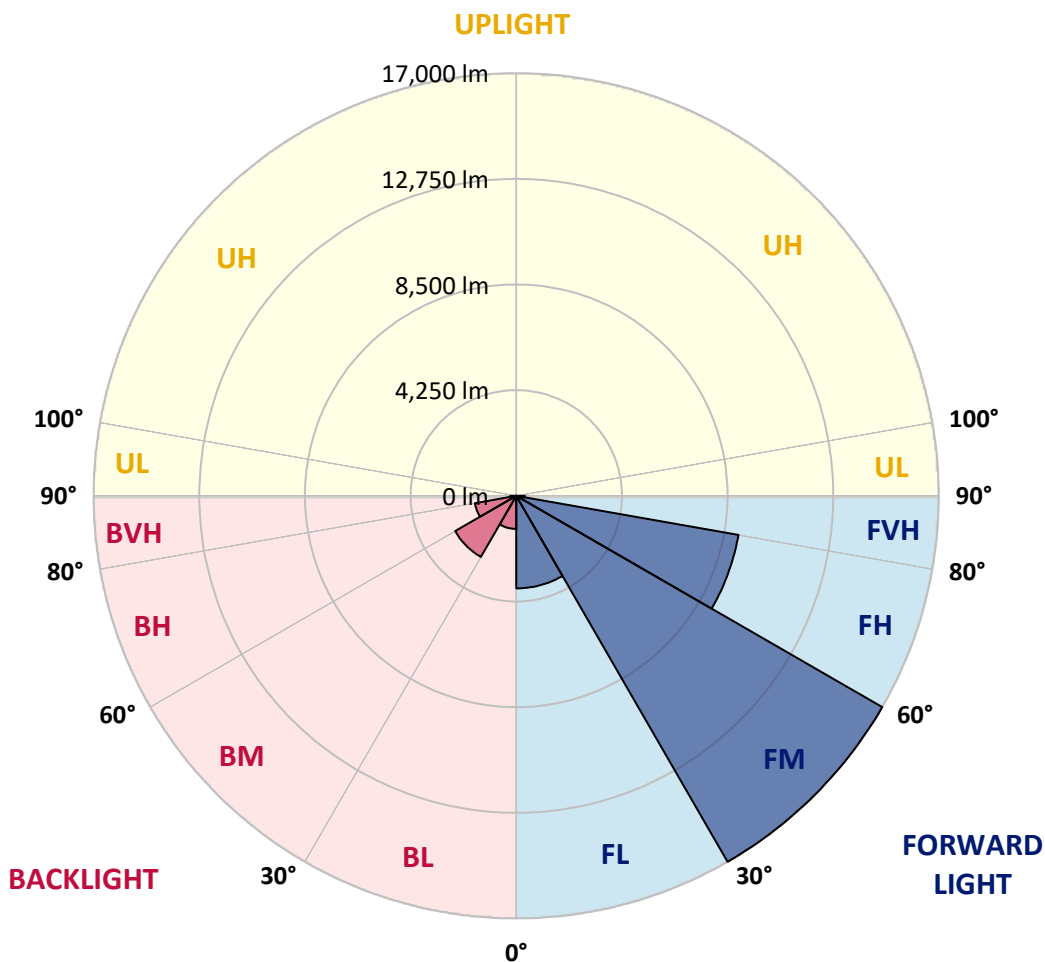


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 3721.9 | 10.3 | | | |
| FM (30°-60°) | 16999.5 | 46.9 | | | |
| FH (60°-80°) | 9076.8 | 25.0 | | | G4/12000 |
| FVH (80°-90°) | 344.7 | 1.0 | | | G3/500 |
| BL (0°-30°) | 1330.0 | 3.7 | B3/2500 | | |
| BM (30°-60°) | 2839.7 | 7.8 | B3/5000 | | |
| BH (60°-80°) | 1689.5 | 4.7 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 239.0 | 0.7 | | | G3/500 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G4
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 |
| 2.5° | 4393.6 | 4327.1 | 4321.0 | 4223.8 | 4201.6 | 4015.8 | 3879.3 | 3736.5 | 3574.1 | 3542.2 | 3414.2 |
| 5° | 5643.6 | 5637.4 | 5552.5 | 5393.8 | 5269.6 | 4952.1 | 4638.4 | 4306.2 | 3942.0 | 3883.0 | 3595.1 |
| 7.5° | 6768.1 | 6758.3 | 6693.1 | 6522.0 | 6342.4 | 5952.4 | 5504.6 | 4995.2 | 4404.6 | 4317.3 | 3839.9 |
| 10° | 7622.0 | 7618.3 | 7596.1 | 7470.6 | 7318.1 | 6944.1 | 6449.5 | 5754.3 | 4942.3 | 4822.9 | 4146.3 |
| 12.5° | 8281.4 | 8288.8 | 8303.6 | 8259.3 | 8186.7 | 7868.0 | 7361.1 | 6559.0 | 5515.6 | 5397.5 | 4487.1 |
| 15° | 8728.0 | 8750.2 | 8826.5 | 8889.2 | 8927.4 | 8731.7 | 8240.8 | 7382.1 | 6157.9 | 6016.4 | 4864.8 |
| 17.5° | 8953.2 | 8977.8 | 9109.5 | 9298.9 | 9473.6 | 9453.9 | 9063.9 | 8167.0 | 6774.3 | 6637.7 | 5270.8 |
| 20° | 9147.6 | 9166.0 | 9313.7 | 9541.3 | 9850.1 | 9986.7 | 9767.7 | 8922.4 | 7449.7 | 7287.3 | 5701.4 |
| 22.5° | 9711.1 | 9734.5 | 9778.8 | 9907.9 | 10181.1 | 10432.1 | 10326.3 | 9637.3 | 8068.6 | 7917.3 | 6109.9 |
| 25° | 10798.7 | 10827.0 | 10731.0 | 10621.5 | 10673.2 | 10847.9 | 10867.6 | 10289.4 | 8696.1 | 8525.0 | 6549.1 |
| 27.5° | 12109.0 | 12149.6 | 11986.0 | 11704.2 | 11458.2 | 11390.5 | 11367.1 | 10823.3 | 9295.2 | 9097.2 | 6983.4 |
| 30° | 13392.3 | 13462.4 | 13249.6 | 12884.1 | 12432.6 | 12115.2 | 11880.2 | 11346.2 | 9885.8 | 9696.3 | 7393.1 |
| 32.5° | 14646.0 | 14617.7 | 14308.9 | 13952.1 | 13423.0 | 13025.6 | 12457.2 | 11907.3 | 10550.2 | 10332.4 | 7800.4 |
| 35° | 15504.8 | 15514.6 | 15227.9 | 14804.7 | 14300.3 | 13995.1 | 13229.9 | 12512.6 | 11228.1 | 11027.6 | 8263.0 |
| 37.5° | 16235.6 | 16190.1 | 15865.3 | 15470.3 | 15036.0 | 14905.6 | 14134.2 | 13179.4 | 11962.6 | 11743.6 | 8755.1 |
| 40° | 16479.2 | 16426.3 | 16213.5 | 15929.2 | 15581.1 | 15570.0 | 15132.0 | 13934.9 | 12793.1 | 12576.6 | 9310.0 |
| 42.5° | 16331.6 | 16263.9 | 16176.5 | 16099.0 | 15992.0 | 16041.2 | 16069.5 | 14820.7 | 13706.0 | 13463.6 | 9952.2 |
| 45° | 15786.5 | 15684.4 | 15745.9 | 15914.5 | 16147.0 | 16425.1 | 16916.0 | 15801.3 | 14728.4 | 14525.4 | 10706.4 |
| 47.5° | 14948.7 | 14856.4 | 15048.3 | 15408.8 | 16041.2 | 16745.0 | 17716.9 | 16884.0 | 15948.9 | 15747.2 | 11780.5 |
| 50° | 13770.0 | 13797.1 | 14071.4 | 14727.2 | 15683.2 | 16892.6 | 18703.7 | 18317.3 | 17723.1 | 17534.8 | 13245.9 |
| 52.5° | 11835.9 | 11840.8 | 12613.5 | 13690.0 | 15048.3 | 16816.3 | 19251.2 | 20149.3 | 20145.6 | 19918.0 | 14641.1 |
| 55° | 10039.6 | 10149.1 | 10760.6 | 12191.5 | 14019.8 | 16511.2 | 19633.8 | 21040.1 | 21736.5 | 21469.5 | 15941.5 |
| 57.5° | 8285.1 | 8349.1 | 8928.6 | 10365.6 | 12552.0 | 15697.9 | 20026.3 | 22109.3 | 23569.7 | 23401.1 | 17558.2 |
| 60° | 6289.5 | 6387.9 | 6987.1 | 8314.7 | 10674.4 | 14254.7 | 20063.2 | 23225.2 | 25760.9 | 25591.1 | 19363.1 |
| 62.5° | 4082.3 | 4252.1 | 4813.1 | 6057.0 | 8403.2 | 12179.2 | 19206.9 | 23954.8 | 27837.7 | 27777.4 | 20965.0 |
| 65° | 2346.3 | 2474.2 | 2864.2 | 3823.9 | 5797.4 | 9573.3 | 17170.7 | 23674.2 | 29116.0 | 29081.6 | 21564.2 |
| 66° | 1916.9 | 1996.8 | 2295.8 | 2988.5 | 4783.6 | 8406.9 | 15987.1 | 23082.5 | 29242.8 | 29244.0 | 21495.3 |
| 67.5° | 1533.0 | 1568.7 | 1702.8 | 2139.6 | 3529.9 | 6663.5 | 13872.1 | 21777.1 | 29085.3 | 29128.4 | 21051.2 |
| 70° | 1268.5 | 1286.9 | 1328.8 | 1434.6 | 1926.7 | 4018.3 | 9846.4 | 18385.0 | 27504.3 | 27537.5 | 19317.6 |
| 72.5° | 1138.1 | 1149.1 | 1165.1 | 1179.9 | 1359.5 | 2245.4 | 6013.9 | 14707.5 | 24114.7 | 24157.8 | 16676.1 |
| 75° | 1031.0 | 1037.2 | 1034.7 | 1035.9 | 1140.5 | 1430.9 | 3107.8 | 10980.8 | 19498.5 | 19412.3 | 12774.6 |
| 77.5° | 905.5 | 911.7 | 899.4 | 901.8 | 1008.9 | 1099.9 | 1546.5 | 7687.2 | 13158.5 | 12550.7 | 7197.5 |
| 80° | 765.3 | 770.2 | 765.3 | 773.9 | 878.5 | 830.5 | 899.4 | 4324.7 | 5818.3 | 5503.3 | 2559.1 |
| 82.5° | 578.3 | 599.2 | 613.9 | 648.4 | 723.4 | 590.6 | 601.6 | 1684.3 | 1771.7 | 1686.8 | 785.0 |
| 85° | 253.5 | 308.8 | 462.6 | 495.8 | 543.8 | 354.3 | 394.9 | 686.5 | 721.0 | 698.8 | 285.4 |
| 87.5° | 66.4 | 72.6 | 228.8 | 287.9 | 301.4 | 159.9 | 205.5 | 312.5 | 329.7 | 312.5 | 94.7 |
| 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: P359152
 CATALOG NUMBER: NVN-SA6B-740-U-T2R

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 | 3309.6 |
| 2.5° | 3346.5 | 3286.2 | 3178.0 | 3082.0 | 3009.4 | 2960.2 | 2911.0 | 2886.4 | 2871.6 | 2856.9 | 2859.3 |
| 5° | 3453.6 | 3331.8 | 3146.0 | 3014.3 | 2940.5 | 2893.8 | 2869.2 | 2859.3 | 2853.2 | 2838.4 | 2838.4 |
| 7.5° | 3614.7 | 3442.5 | 3186.6 | 3051.2 | 2993.4 | 2957.7 | 2943.0 | 2938.1 | 2930.7 | 2913.5 | 2915.9 |
| 10° | 3817.8 | 3576.6 | 3271.5 | 3139.8 | 3086.9 | 3047.6 | 3026.6 | 3019.3 | 3005.7 | 2986.0 | 2988.5 |
| 12.5° | 4056.4 | 3742.7 | 3383.4 | 3245.6 | 3181.7 | 3128.8 | 3094.3 | 3073.4 | 3050.0 | 3024.2 | 3025.4 |
| 15° | 4317.3 | 3923.6 | 3504.0 | 3340.4 | 3253.0 | 3179.2 | 3123.8 | 3088.2 | 3051.2 | 3019.3 | 3018.0 |
| 17.5° | 4581.8 | 4098.3 | 3596.3 | 3392.1 | 3273.9 | 3176.7 | 3101.7 | 3046.3 | 3000.8 | 2961.4 | 2957.7 |
| 20° | 4867.2 | 4255.8 | 3648.0 | 3387.1 | 3234.6 | 3118.9 | 3019.3 | 2950.4 | 2899.9 | 2860.5 | 2854.4 |
| 22.5° | 5157.6 | 4403.4 | 3656.6 | 3336.7 | 3147.2 | 3005.7 | 2901.1 | 2824.9 | 2773.2 | 2732.6 | 2717.8 |
| 25° | 5423.3 | 4517.8 | 3620.9 | 3239.5 | 3025.4 | 2872.8 | 2770.7 | 2693.2 | 2651.4 | 2603.4 | 2588.6 |
| 27.5° | 5665.7 | 4597.8 | 3549.5 | 3115.2 | 2888.8 | 2738.7 | 2642.8 | 2576.3 | 2530.8 | 2493.9 | 2481.6 |
| 30° | 5883.5 | 4640.9 | 3432.7 | 2967.6 | 2748.6 | 2612.0 | 2530.8 | 2485.3 | 2445.9 | 2399.2 | 2390.6 |
| 32.5° | 6090.2 | 4640.9 | 3282.6 | 2806.4 | 2609.6 | 2500.1 | 2452.1 | 2423.8 | 2379.5 | 2334.0 | 2321.7 |
| 35° | 6296.9 | 4612.6 | 3105.4 | 2637.9 | 2481.6 | 2420.1 | 2417.6 | 2384.4 | 2316.7 | 2255.2 | 2239.2 |
| 37.5° | 6514.7 | 4554.7 | 2906.1 | 2480.4 | 2377.0 | 2384.4 | 2405.3 | 2331.5 | 2235.5 | 2148.2 | 2124.8 |
| 40° | 6760.7 | 4474.8 | 2699.4 | 2343.8 | 2289.7 | 2368.4 | 2372.1 | 2255.2 | 2068.2 | 1988.2 | 1967.3 |
| 42.5° | 7049.9 | 4394.8 | 2507.4 | 2223.2 | 2220.8 | 2320.4 | 2309.4 | 2090.4 | 1978.4 | 1937.8 | 1926.7 |
| 45° | 7430.0 | 4349.3 | 2325.3 | 2108.8 | 2166.6 | 2242.9 | 2202.3 | 1999.3 | 1952.6 | 1929.2 | 1919.3 |
| 47.5° | 8029.2 | 4372.6 | 2158.0 | 2017.8 | 2112.5 | 2165.4 | 2003.0 | 1962.4 | 1929.2 | 1900.9 | 1891.0 |
| 50° | 8779.7 | 4359.1 | 2022.7 | 1955.0 | 2051.0 | 2084.2 | 1913.2 | 1914.4 | 1897.2 | 1865.2 | 1850.4 |
| 52.5° | 9344.4 | 4253.3 | 1935.3 | 1919.3 | 1996.8 | 1940.2 | 1856.6 | 1867.7 | 1859.0 | 1812.3 | 1796.3 |
| 55° | 9889.5 | 4162.2 | 1891.0 | 1905.8 | 1957.5 | 1760.6 | 1790.1 | 1817.2 | 1808.6 | 1763.1 | 1755.7 |
| 57.5° | 10567.4 | 4145.0 | 1864.0 | 1909.5 | 1924.3 | 1670.8 | 1726.2 | 1761.9 | 1755.7 | 1736.0 | 1732.3 |
| 60° | 11397.9 | 4149.9 | 1839.4 | 1915.6 | 1887.3 | 1604.4 | 1665.9 | 1711.4 | 1715.1 | 1711.4 | 1708.9 |
| 62.5° | 11854.3 | 4015.8 | 1777.8 | 1898.4 | 1822.1 | 1546.5 | 1603.1 | 1669.6 | 1670.8 | 1678.2 | 1677.0 |
| 65° | 11466.8 | 3614.7 | 1663.4 | 1838.1 | 1712.6 | 1498.6 | 1549.0 | 1621.6 | 1603.1 | 1636.4 | 1636.4 |
| 66° | 11090.3 | 3383.4 | 1606.8 | 1798.8 | 1665.9 | 1480.1 | 1531.8 | 1597.0 | 1573.6 | 1619.1 | 1619.1 |
| 67.5° | 10321.3 | 2993.4 | 1504.7 | 1715.1 | 1599.4 | 1454.3 | 1512.1 | 1556.4 | 1524.4 | 1592.1 | 1587.1 |
| 70° | 8916.3 | 2315.5 | 1299.2 | 1525.6 | 1489.9 | 1416.1 | 1485.0 | 1475.2 | 1428.4 | 1531.8 | 1512.1 |
| 72.5° | 7517.4 | 1759.4 | 1043.3 | 1277.1 | 1323.8 | 1368.1 | 1446.9 | 1371.8 | 1312.8 | 1385.4 | 1342.3 |
| 75° | 5833.1 | 1322.6 | 824.3 | 992.9 | 1118.4 | 1293.1 | 1401.4 | 1252.5 | 1167.6 | 1160.2 | 1136.8 |
| 77.5° | 3153.4 | 908.0 | 653.3 | 757.9 | 888.3 | 1199.6 | 1370.6 | 1124.5 | 996.6 | 967.0 | 948.6 |
| 80° | 1248.8 | 590.6 | 474.9 | 574.6 | 621.3 | 1064.2 | 1296.8 | 975.7 | 821.9 | 792.3 | 764.0 |
| 82.5° | 515.5 | 349.4 | 306.4 | 385.1 | 404.8 | 910.5 | 1163.9 | 799.7 | 634.9 | 878.5 | 932.6 |
| 85° | 221.5 | 191.9 | 182.1 | 199.3 | 228.8 | 638.5 | 926.4 | 610.2 | 685.3 | 611.5 | 486.0 |
| 87.5° | 66.4 | 81.2 | 77.5 | 76.3 | 83.7 | 152.6 | 493.4 | 339.6 | 503.2 | 190.7 | 142.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINIAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

| | | | | | |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K): | 3905 | CRI (Ra): | 71.2 | R9: | -29.7 |
| CIE u': | 0.2273 | R1: | 68.9 | R10: | 46.2 |
| CIE v': | 0.5024 | R2: | 77.0 | R11: | 68.8 |
| Duv: | -0.0008 | R3: | 84.0 | R12: | 45.6 |
| CIE x: | 0.3841 | R4: | 71.6 | R13: | 69.5 |
| CIE y: | 0.3774 | R5: | 68.9 | R14: | 90.7 |
| CIE z: | 0.2385 | R6: | 68.3 | | |
| Peak Wavelength (nm): | 443 | R7: | 78.7 | | |
| Dominant Wavelength (nm): | 579 | R8: | 52.2 | | |
| Purity: | 28.7 | | | | |
| Rf: | 71.7 | | | | |
| Rg: | 96.9 | | | | |



Test Conditions

Stabilization Time: 211M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.8/312%
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | IN0071 | 12/1/2020 | 12/1/2021 |
| AC Power Source | IN0063 | 12/1/2020 | 12/1/2021 |
| DC Power Source | IN0208 | 12/1/2020 | 12/1/2021 |
| Sphere Thermometer | IN0085 | 12/1/2020 | 12/1/2021 |
| Room Thermometer | IN0046 | 12/1/2020 | 12/1/2021 |

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 2.7 | 620 | 97577 | 25.4 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 4.8 | 625 | 90158 | 19.9 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 8.0 | 630 | 82240 | 14.9 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 13.3 | 635 | 74361 | 11.2 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 20.2 | 640 | 66994 | 8.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 28.5 | 645 | 60405 | 5.8 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 37.4 | 650 | 53806 | 3.9 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 44.9 | 655 | 47610 | 2.7 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 52.6 | 660 | 42018 | 1.8 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 58.4 | 665 | 36742 | 1.2 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.0 | 540 | 96845 | 63.1 | 670 | 32105 | 0.7 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.0 | 545 | 100829 | 67.1 | 675 | 27946 | 0.5 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 0.1 | 550 | 105648 | 71.8 | 680 | 24146 | 0.3 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 0.2 | 555 | 110017 | 75.1 | 685 | 21191 | 0.2 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 0.5 | 560 | 114586 | 77.9 | 690 | 18544 | 0.1 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 1.2 | 565 | 118987 | 79.1 | 695 | 16058 | 0.1 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 2.1 | 570 | 122326 | 79.5 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 2.9 | 575 | 125968 | 78.4 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 2.7 | 580 | 127613 | 75.8 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 2.0 | 585 | 129466 | 71.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 1.5 | 590 | 128813 | 66.6 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 1.3 | 595 | 126387 | 59.9 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 1.0 | 600 | 123477 | 53.2 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 1.1 | 605 | 118718 | 46.0 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 1.2 | 610 | 112091 | 38.5 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 1.7 | 615 | 105039 | 31.7 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 29.3 | 620 | 97577 | 1.2 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 43.0 | 625 | 90158 | 0.8 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 60.8 | 630 | 82240 | 0.5 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 81.1 | 635 | 74361 | 0.3 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 99.6 | 640 | 66994 | 0.2 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 113.9 | 645 | 60405 | 0.1 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 122.6 | 650 | 53806 | 0.1 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 125.0 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 123.1 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.1 | 535 | 94097 | 117.3 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 107.0 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.9 | 545 | 100829 | 96.7 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 3.0 | 550 | 105648 | 86.4 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 9.3 | 555 | 110017 | 75.2 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 23.0 | 560 | 114586 | 64.0 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 45.7 | 565 | 118987 | 53.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 75.5 | 570 | 122326 | 43.2 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 93.8 | 575 | 125968 | 34.3 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 79.3 | 580 | 127613 | 26.3 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 51.3 | 585 | 129466 | 19.8 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 35.6 | 590 | 128813 | 14.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 26.0 | 595 | 126387 | 10.1 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 19.3 | 600 | 123477 | 7.0 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 16.8 | 605 | 118718 | 4.7 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 17.7 | 610 | 112091 | 3.0 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 21.4 | 615 | 105039 | 1.9 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 15.8 | 620 | 97577 | 0.1 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 22.0 | 625 | 90158 | 0.0 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 29.2 | 630 | 82240 | 0.0 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 36.6 | 635 | 74361 | 0.0 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 42.2 | 640 | 66994 | 0.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 44.9 | 645 | 60405 | 0.0 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 44.9 | 650 | 53806 | 0.0 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 42.4 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 38.6 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 33.9 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 28.3 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.6 | 545 | 100829 | 23.4 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 2.1 | 550 | 105648 | 19.0 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 5.9 | 555 | 110017 | 14.8 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 14.3 | 560 | 114586 | 11.3 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 27.3 | 565 | 118987 | 8.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 45.1 | 570 | 122326 | 6.0 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 55.3 | 575 | 125968 | 4.2 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 47.2 | 580 | 127613 | 2.9 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 30.8 | 585 | 129466 | 1.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 21.7 | 590 | 128813 | 1.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 16.1 | 595 | 126387 | 0.8 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 12.0 | 600 | 123477 | 0.5 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 10.3 | 605 | 118718 | 0.3 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 10.5 | 610 | 112091 | 0.2 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 12.1 | 615 | 105039 | 0.1 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)