

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: McGRAW-EDISON

Report Number: P639277

Luminaire Tested: GWS-SA5B-740-U-T4W-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P639277
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-52)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5B-740-U-T4W-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: (80) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17603.7 lumens
Efficiency: N/A
Efficacy: 152.1 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G3

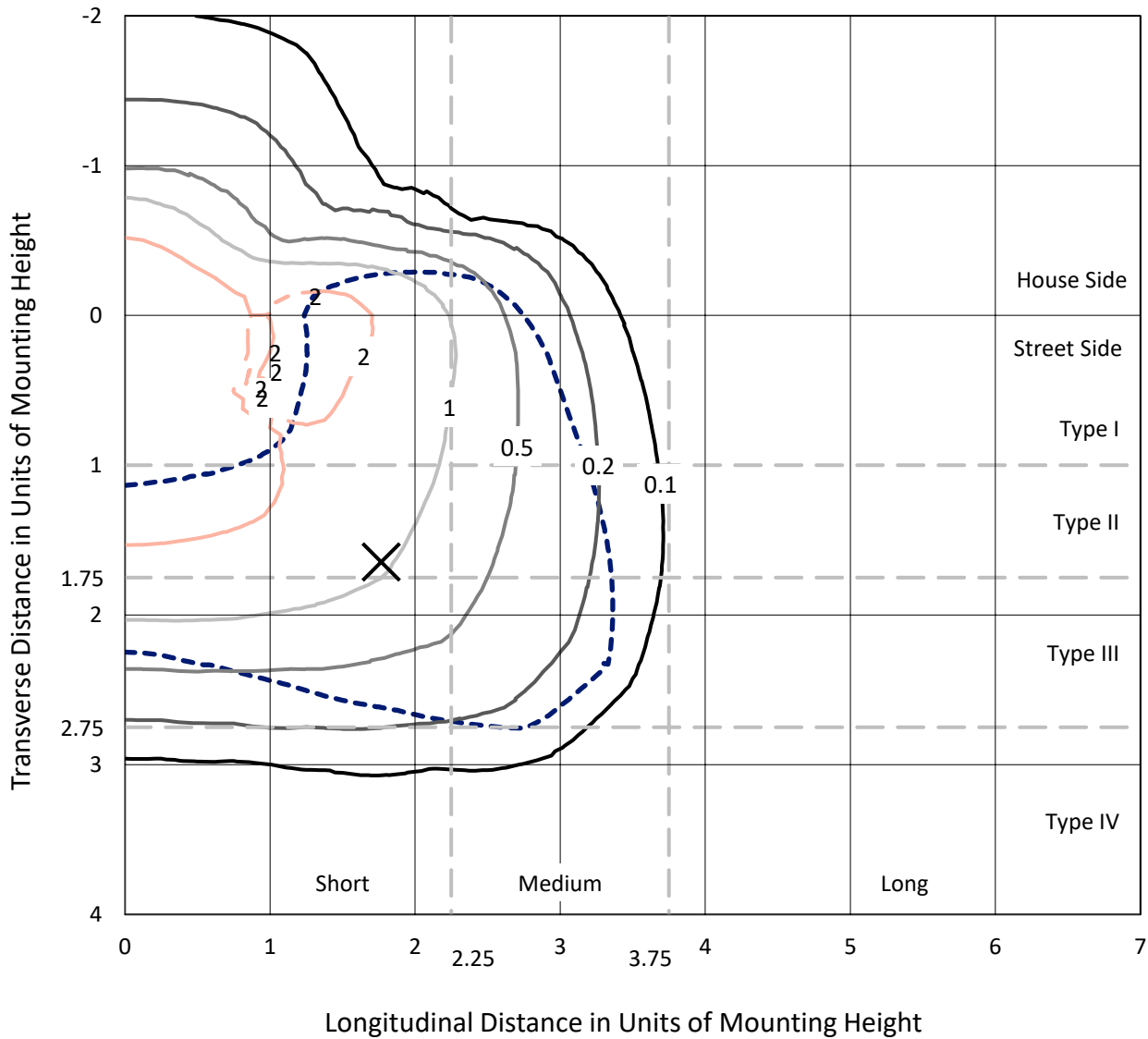
Input Watts (W): 115.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P639277
 CATALOG NUMBER: GWS-SA5B-740-U-T4W-W

Iso-Footcandle Lines of Horizontal Illumination

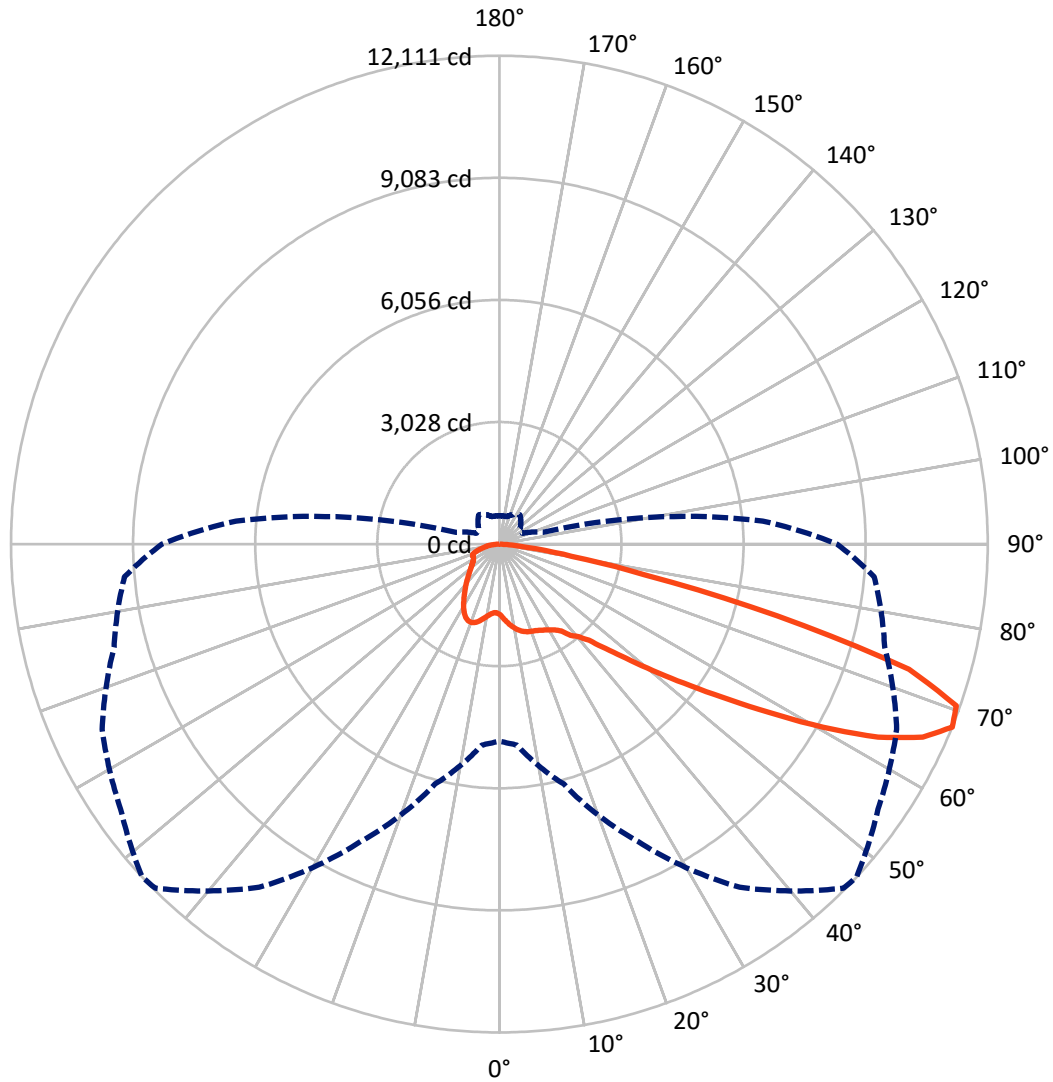
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.5 fc
 Type III - Short - N/A

REPORT NUMBER: P639277
CATALOG NUMBER: GWS-SA5B-740-U-T4W-W

Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P639277

CATALOG NUMBER: GWS-SA5B-740-U-T4W-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4012.0 | 0.0 | 4012.0 |
| | % Fixture | 22.8 | 0.0 | 22.8 |
| Street Side | Lumens | 13591.7 | 0.0 | 13591.7 |
| | % Fixture | 77.2 | 0.0 | 77.2 |
| Total | Lumens | 17603.7 | 0.0 | 17603.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 178.4 | 1.0 |
| 10°-20° | 594.2 | 3.4 |
| 20°-30° | 1010.0 | 5.7 |
| 30°-40° | 1479.5 | 8.4 |
| 40°-50° | 2254.2 | 12.8 |
| 50°-60° | 4033.3 | 22.9 |
| 60°-70° | 5381.9 | 30.6 |
| 70°-80° | 2433.8 | 13.8 |
| 80°-90° | 238.4 | 1.4 |
| 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° | 17603.7 | 100.0 |
| 0°-180° | 17603.7 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P639277

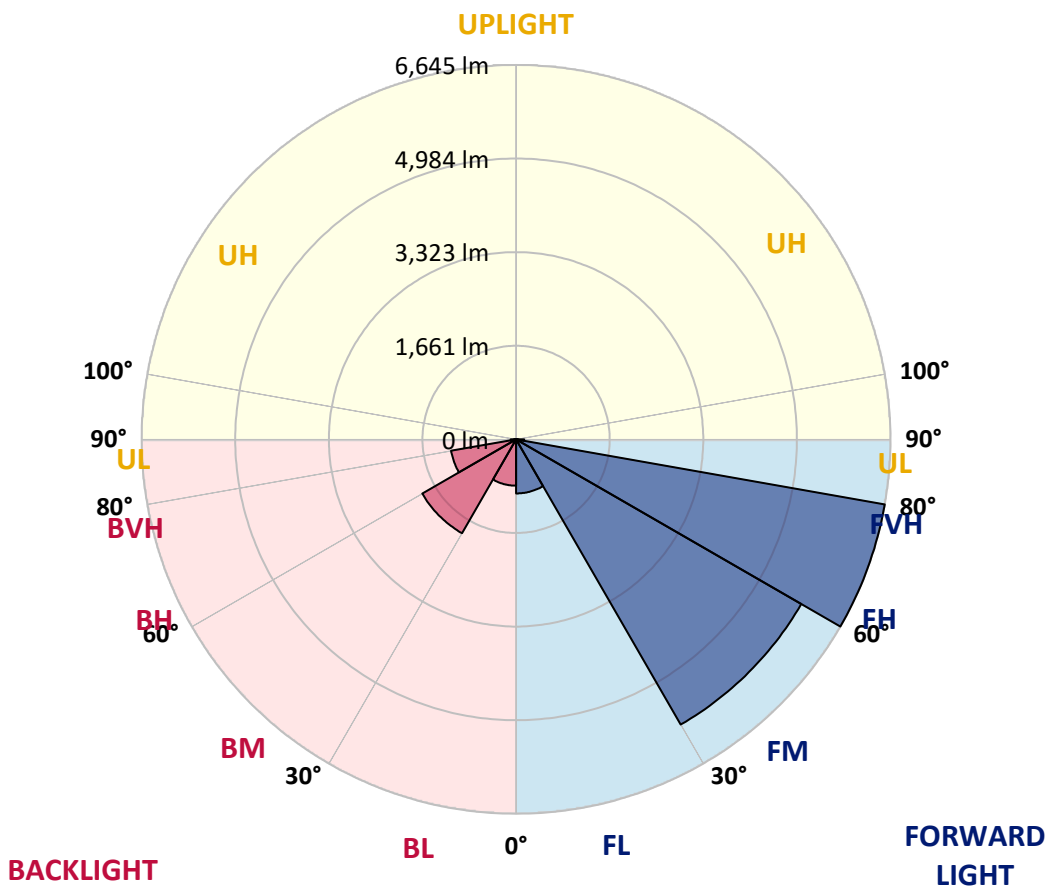
CATALOG NUMBER: GWS-SA5B-740-U-T4W-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 960.0 | 5.5 | | | |
| FM (30°-60°) | 5844.6 | 33.2 | | | |
| FH (60°-80°) | 6645.2 | 37.7 | | | G3/7500 |
| FVH (80°-90°) | 141.8 | 0.8 | | | G2/225 |
| BL (0°-30°) | 822.5 | 4.7 | B2/1000 | | |
| BM (30°-60°) | 1922.3 | 10.9 | B2/2500 | | |
| BH (60°-80°) | 1170.6 | 6.6 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 96.6 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type III Short





REPORT NUMBER: P639277
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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 |
| 2.5° | 1860.9 | 1867.3 | 1866.0 | 1855.8 | 1849.5 | 1838.0 | 1839.3 | 1821.5 | 1794.7 | 1776.9 | 1756.5 |
| 5° | 2025.1 | 2035.3 | 2022.6 | 2006.0 | 1980.6 | 1943.6 | 1939.8 | 1899.1 | 1848.2 | 1812.5 | 1775.6 |
| 7.5° | 2167.7 | 2174.0 | 2158.8 | 2130.8 | 2093.8 | 2044.2 | 2035.3 | 1986.9 | 1923.3 | 1867.3 | 1813.8 |
| 10° | 2278.4 | 2286.0 | 2265.7 | 2228.8 | 2180.4 | 2130.8 | 2124.4 | 2074.8 | 2007.3 | 1941.1 | 1873.6 |
| 12.5° | 2372.6 | 2375.1 | 2353.5 | 2303.9 | 2251.7 | 2200.8 | 2194.4 | 2148.6 | 2086.2 | 2018.7 | 1944.9 |
| 15° | 2427.3 | 2428.6 | 2401.9 | 2347.1 | 2297.5 | 2253.0 | 2249.1 | 2209.7 | 2152.4 | 2088.8 | 2009.8 |
| 17.5° | 2423.5 | 2426.1 | 2407.0 | 2358.6 | 2315.3 | 2288.6 | 2284.8 | 2259.3 | 2214.8 | 2157.5 | 2078.6 |
| 20° | 2376.4 | 2379.0 | 2366.2 | 2334.4 | 2311.5 | 2303.9 | 2305.1 | 2297.5 | 2270.8 | 2223.7 | 2143.5 |
| 22.5° | 2339.5 | 2343.3 | 2331.9 | 2309.0 | 2306.4 | 2324.2 | 2328.1 | 2331.9 | 2319.1 | 2277.1 | 2199.5 |
| 25° | 2357.3 | 2363.7 | 2345.9 | 2314.0 | 2319.1 | 2358.6 | 2366.2 | 2379.0 | 2368.8 | 2333.1 | 2265.7 |
| 27.5° | 2480.8 | 2484.6 | 2438.8 | 2373.9 | 2358.6 | 2400.6 | 2412.1 | 2432.4 | 2424.8 | 2391.7 | 2339.5 |
| 30° | 2767.2 | 2764.6 | 2666.6 | 2507.5 | 2443.9 | 2460.4 | 2469.3 | 2498.6 | 2501.2 | 2479.5 | 2429.9 |
| 32.5° | 3170.7 | 3158.0 | 3006.5 | 2753.2 | 2568.6 | 2527.9 | 2538.1 | 2577.5 | 2606.8 | 2583.9 | 2516.4 |
| 35° | 3597.1 | 3585.6 | 3418.9 | 3122.3 | 2799.0 | 2657.7 | 2646.3 | 2676.8 | 2721.4 | 2657.7 | 2561.0 |
| 37.5° | 4003.1 | 3985.3 | 3814.7 | 3448.2 | 3082.9 | 2885.6 | 2869.0 | 2838.5 | 2811.7 | 2689.5 | 2615.7 |
| 40° | 4453.7 | 4433.4 | 4284.4 | 3869.5 | 3396.0 | 3059.9 | 3017.9 | 2897.0 | 2872.8 | 2795.2 | 2758.3 |
| 42.5° | 4934.9 | 4934.9 | 4811.4 | 4402.8 | 3774.0 | 3309.4 | 3254.7 | 3072.7 | 3098.1 | 3047.2 | 3003.9 |
| 45° | 5416.0 | 5430.0 | 5332.0 | 4939.9 | 4279.3 | 3780.4 | 3692.6 | 3434.2 | 3495.3 | 3472.3 | 3450.7 |
| 47.5° | 5825.9 | 5852.6 | 5833.5 | 5488.5 | 4897.9 | 4353.2 | 4219.5 | 3950.9 | 4082.0 | 4136.8 | 4197.9 |
| 50° | 6267.5 | 6296.8 | 6277.7 | 6141.5 | 5622.2 | 5046.9 | 4927.2 | 4649.7 | 4875.0 | 5039.2 | 5239.1 |
| 52.5° | 6923.1 | 6965.1 | 6806.0 | 6753.8 | 6501.7 | 5834.8 | 5727.8 | 5412.2 | 5820.8 | 6093.2 | 6538.7 |
| 55° | 7476.7 | 7475.5 | 7419.5 | 7539.1 | 7446.2 | 6798.3 | 6679.9 | 6393.5 | 6915.4 | 7204.4 | 7856.1 |
| 57.5° | 7733.9 | 7764.4 | 7956.6 | 8295.2 | 8481.0 | 7975.7 | 7862.4 | 7569.7 | 8090.3 | 8240.5 | 8944.3 |
| 60° | 7866.2 | 7904.4 | 8276.1 | 8945.6 | 9445.9 | 9261.3 | 9216.7 | 8843.8 | 9136.6 | 9118.7 | 9862.1 |
| 62.5° | 7680.4 | 7756.8 | 8353.7 | 9243.5 | 10134.5 | 10553.2 | 10539.2 | 9975.4 | 10026.3 | 9851.9 | 10431.0 |
| 65° | 6827.6 | 6910.3 | 7847.1 | 9094.5 | 10527.8 | 11535.9 | 11539.7 | 11000.0 | 10709.8 | 10208.3 | 10335.6 |
| 67.5° | 4882.7 | 5001.0 | 6159.3 | 8137.4 | 10389.0 | 12066.7 | 12111.2 | 11464.6 | 10870.2 | 9892.6 | 9332.6 |
| 70° | 2661.5 | 2748.1 | 3655.6 | 5915.0 | 9139.1 | 11939.4 | 12022.1 | 11240.6 | 10162.5 | 8557.4 | 7184.0 |
| 72.5° | 1209.2 | 1237.2 | 1700.5 | 3245.8 | 6243.4 | 10277.0 | 10623.2 | 10031.4 | 8346.1 | 6321.0 | 4568.3 |
| 75° | 553.7 | 566.4 | 740.8 | 1552.9 | 3262.3 | 6877.2 | 7120.3 | 7471.7 | 5808.0 | 3991.7 | 2381.5 |
| 77.5° | 347.5 | 351.3 | 421.3 | 710.3 | 1626.7 | 3432.9 | 3688.7 | 4448.6 | 3401.1 | 1975.5 | 995.4 |
| 80° | 204.9 | 208.7 | 262.2 | 384.4 | 763.7 | 1570.7 | 1813.8 | 1759.1 | 1598.7 | 852.8 | 453.1 |
| 82.5° | 103.1 | 106.9 | 151.5 | 218.9 | 416.2 | 625.0 | 735.7 | 739.5 | 595.7 | 462.0 | 255.8 |
| 85° | 36.9 | 38.2 | 49.6 | 86.6 | 176.9 | 206.2 | 230.4 | 281.3 | 291.5 | 268.6 | 123.5 |
| 87.5° | 0.0 | 0.0 | 1.3 | 2.5 | 5.1 | 20.4 | 21.6 | 40.7 | 85.3 | 95.5 | 49.6 |
| 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: P639277
 CATALOG NUMBER: GWS-SA5B-740-U-T4W-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 | 1745.1 |
| 2.5° | 1750.2 | 1731.1 | 1724.7 | 1718.4 | 1708.2 | 1704.4 | 1696.7 | 1689.1 | 1689.1 | 1681.4 | 1677.6 |
| 5° | 1759.1 | 1733.6 | 1717.1 | 1709.4 | 1703.1 | 1706.9 | 1706.9 | 1709.4 | 1718.4 | 1713.3 | 1715.8 |
| 7.5° | 1790.9 | 1761.6 | 1738.7 | 1732.4 | 1732.4 | 1747.6 | 1757.8 | 1770.5 | 1787.1 | 1789.6 | 1789.6 |
| 10° | 1846.9 | 1812.5 | 1788.4 | 1784.5 | 1790.9 | 1812.5 | 1827.8 | 1843.1 | 1863.5 | 1864.7 | 1867.3 |
| 12.5° | 1908.0 | 1873.6 | 1849.5 | 1854.5 | 1860.9 | 1888.9 | 1905.5 | 1918.2 | 1938.6 | 1938.6 | 1937.3 |
| 15° | 1971.7 | 1933.5 | 1913.1 | 1923.3 | 1942.4 | 1974.2 | 1976.7 | 1978.0 | 1988.2 | 1985.7 | 1984.4 |
| 17.5° | 2037.8 | 1997.1 | 1981.8 | 1997.1 | 2017.5 | 2032.7 | 2020.0 | 2002.2 | 1998.4 | 1993.3 | 1990.7 |
| 20° | 2102.8 | 2060.8 | 2054.4 | 2065.8 | 2072.2 | 2059.5 | 2020.0 | 1986.9 | 1971.7 | 1964.0 | 1961.5 |
| 22.5° | 2158.8 | 2123.1 | 2119.3 | 2119.3 | 2087.5 | 2042.9 | 1984.4 | 1939.8 | 1919.5 | 1909.3 | 1906.7 |
| 25° | 2224.9 | 2191.9 | 2185.5 | 2151.1 | 2069.7 | 1988.2 | 1909.3 | 1868.6 | 1852.0 | 1846.9 | 1848.2 |
| 27.5° | 2302.6 | 2279.7 | 2259.3 | 2161.3 | 2018.7 | 1891.5 | 1802.4 | 1784.5 | 1778.2 | 1784.5 | 1788.4 |
| 30° | 2398.1 | 2375.1 | 2329.3 | 2148.6 | 1937.3 | 1765.4 | 1680.2 | 1678.9 | 1698.0 | 1714.5 | 1717.1 |
| 32.5° | 2475.7 | 2465.5 | 2390.4 | 2107.8 | 1822.7 | 1626.7 | 1554.2 | 1559.2 | 1593.6 | 1616.5 | 1620.3 |
| 35° | 2536.8 | 2553.3 | 2441.3 | 2040.4 | 1686.5 | 1495.6 | 1438.3 | 1440.9 | 1460.0 | 1491.8 | 1493.1 |
| 37.5° | 2623.4 | 2679.4 | 2487.2 | 1937.3 | 1530.0 | 1382.3 | 1330.1 | 1311.0 | 1308.5 | 1317.4 | 1320.0 |
| 40° | 2797.7 | 2881.7 | 2520.3 | 1787.1 | 1378.5 | 1280.5 | 1221.9 | 1185.0 | 1153.2 | 1129.0 | 1121.4 |
| 42.5° | 3061.2 | 3158.0 | 2539.3 | 1605.1 | 1243.6 | 1179.9 | 1113.7 | 1066.7 | 1010.6 | 959.7 | 941.9 |
| 45° | 3544.9 | 3576.7 | 2539.3 | 1411.6 | 1123.9 | 1085.7 | 1019.6 | 963.6 | 892.3 | 832.4 | 819.7 |
| 47.5° | 4318.8 | 4217.0 | 2541.9 | 1224.5 | 1018.3 | 1003.0 | 945.7 | 882.1 | 803.2 | 753.5 | 745.9 |
| 50° | 5484.7 | 5127.1 | 2594.1 | 1069.2 | 930.5 | 933.0 | 891.0 | 821.0 | 749.7 | 712.8 | 706.4 |
| 52.5° | 6806.0 | 6248.4 | 2734.1 | 954.6 | 856.6 | 875.7 | 852.8 | 785.4 | 721.7 | 689.9 | 683.5 |
| 55° | 8048.3 | 7279.5 | 2853.7 | 873.2 | 794.3 | 827.4 | 826.1 | 763.7 | 706.4 | 674.6 | 670.8 |
| 57.5° | 9104.7 | 7985.9 | 2835.9 | 807.0 | 740.8 | 782.8 | 801.9 | 749.7 | 696.3 | 669.5 | 665.7 |
| 60° | 9761.5 | 8360.1 | 2582.6 | 745.9 | 700.1 | 751.0 | 787.9 | 745.9 | 701.3 | 695.0 | 696.3 |
| 62.5° | 10046.6 | 8291.4 | 2096.4 | 700.1 | 673.3 | 735.7 | 803.2 | 772.6 | 748.4 | 763.7 | 772.6 |
| 65° | 9603.7 | 7700.8 | 1542.7 | 665.7 | 647.9 | 739.5 | 838.8 | 814.6 | 748.4 | 758.6 | 762.4 |
| 67.5° | 8374.1 | 6555.2 | 1115.0 | 631.3 | 616.1 | 751.0 | 889.7 | 808.3 | 705.2 | 705.2 | 697.5 |
| 70° | 6034.6 | 4714.7 | 809.5 | 597.0 | 584.2 | 734.4 | 892.3 | 765.0 | 655.5 | 651.7 | 632.6 |
| 72.5° | 3631.5 | 2781.2 | 631.3 | 558.8 | 535.9 | 651.7 | 836.3 | 714.1 | 607.2 | 575.3 | 552.4 |
| 75° | 1886.4 | 1393.8 | 529.5 | 516.8 | 459.5 | 552.4 | 765.0 | 635.2 | 519.3 | 491.3 | 478.6 |
| 77.5° | 808.3 | 651.7 | 454.4 | 460.8 | 381.9 | 464.6 | 617.3 | 549.9 | 460.8 | 425.1 | 413.7 |
| 80° | 398.4 | 370.4 | 358.9 | 369.1 | 305.5 | 358.9 | 532.1 | 481.1 | 390.8 | 350.0 | 333.5 |
| 82.5° | 227.8 | 216.4 | 258.4 | 262.2 | 217.7 | 300.4 | 449.3 | 407.3 | 323.3 | 278.8 | 252.0 |
| 85° | 105.6 | 113.3 | 156.6 | 157.8 | 134.9 | 206.2 | 294.0 | 229.1 | 171.8 | 142.6 | 136.2 |
| 87.5° | 42.0 | 49.6 | 68.7 | 67.5 | 39.5 | 38.2 | 25.5 | 14.0 | 11.5 | 10.2 | 8.9 |
| 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 LUMINAIRES 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)