

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: P634683

Luminaire Tested: GWS-SA3C-730-U-SL4-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P634683
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-35)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3C-730-U-SL4-W
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS
Light Source: (48) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12199.5 lumens
Efficiency: N/A
Efficacy: 131.2 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

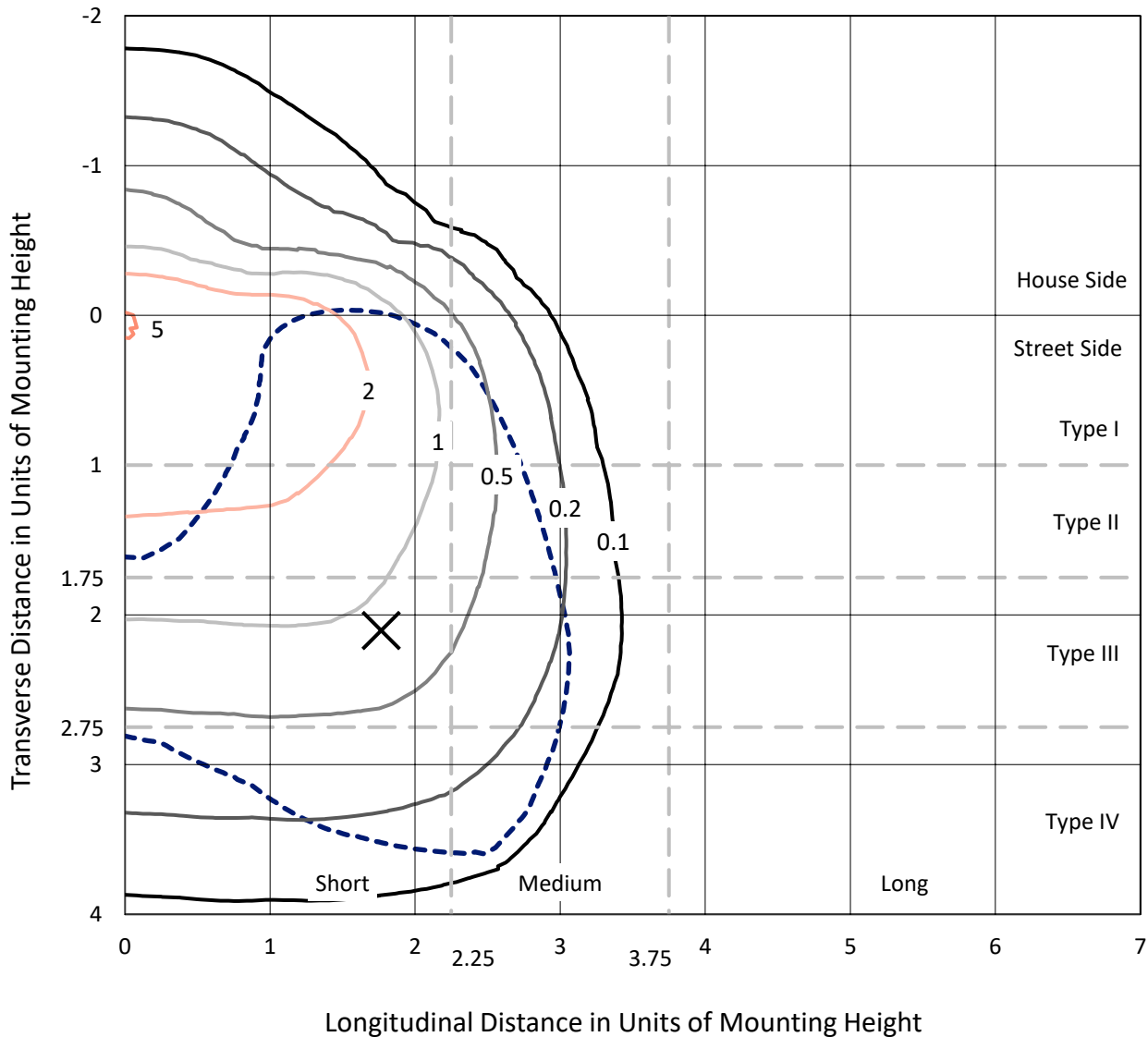
Input Watts (W): 93
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

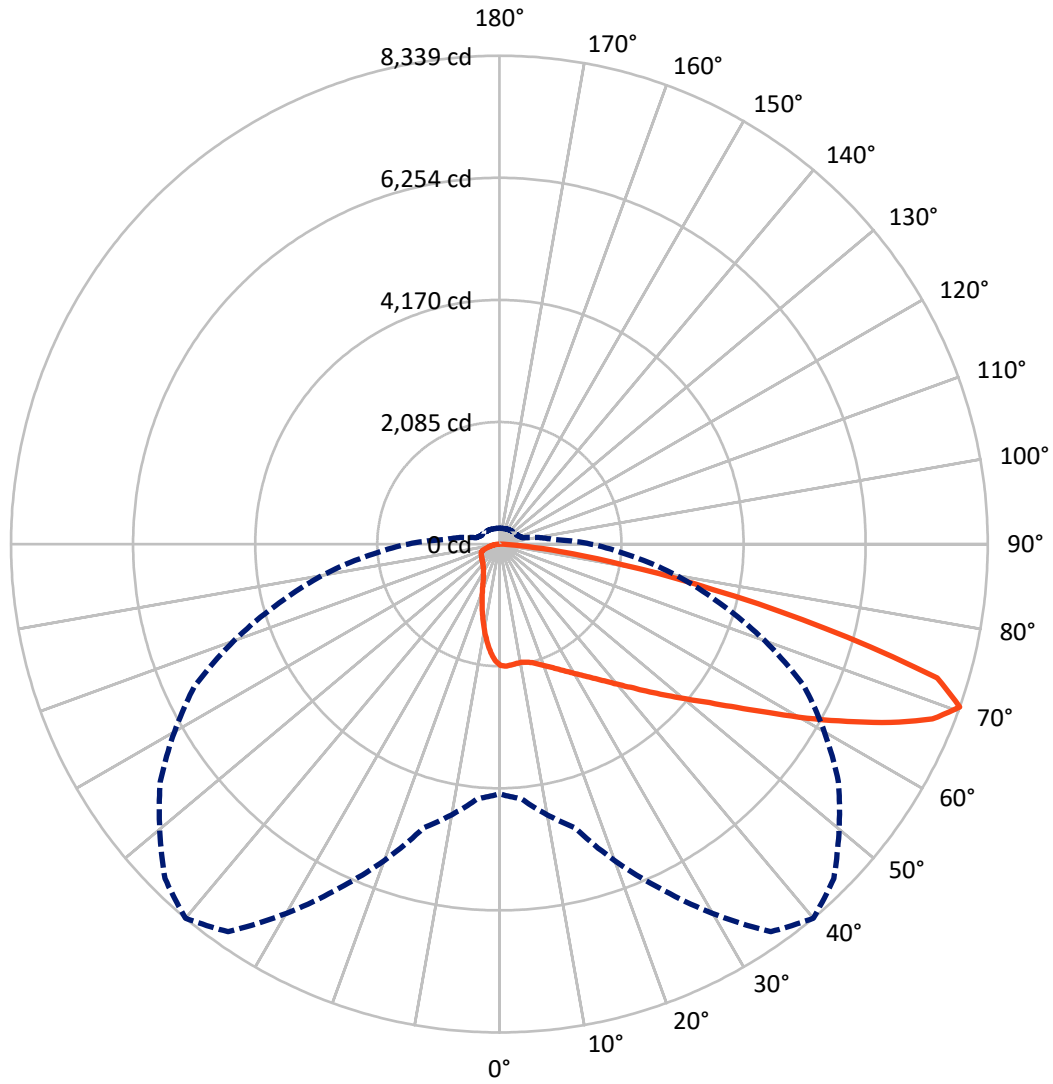
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.2 fc
 Type IV - Short - N/A

REPORT NUMBER: P634683
CATALOG NUMBER: GWS-SA3C-730-U-SL4-W

Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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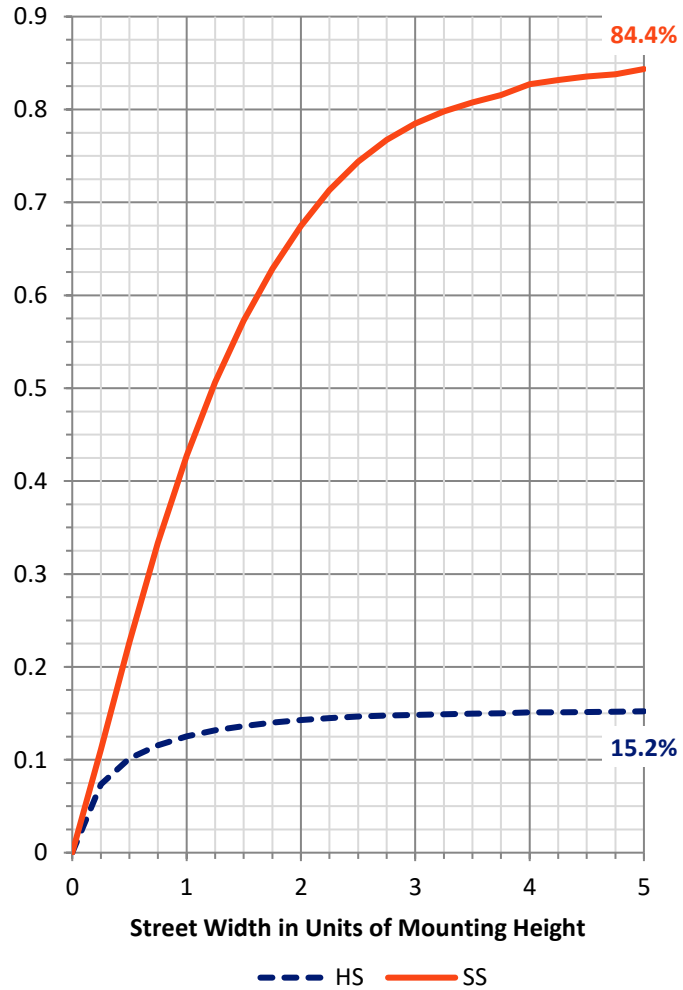
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1879.0 | 0.0 | 1879.0 |
| | % Fixture | 15.4 | 0.0 | 15.4 |
| Street Side | Lumens | 10320.5 | 0.0 | 10320.5 |
| | % Fixture | 84.6 | 0.0 | 84.6 |
| Total | Lumens | 12199.5 | 0.0 | 12199.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 183.0 | 1.5 |
| 10°-20° | 477.0 | 3.9 |
| 20°-30° | 749.0 | 6.1 |
| 30°-40° | 1126.2 | 9.2 |
| 40°-50° | 1738.3 | 14.2 |
| 50°-60° | 2581.5 | 21.2 |
| 60°-70° | 3253.9 | 26.7 |
| 70°-80° | 1881.7 | 15.4 |
| 80°-90° | 208.8 | 1.7 |
| 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° | 12199.5 | 100.0 |
| 0°-180° | 12199.5 | 100.0 |

Coefficient of Utilization



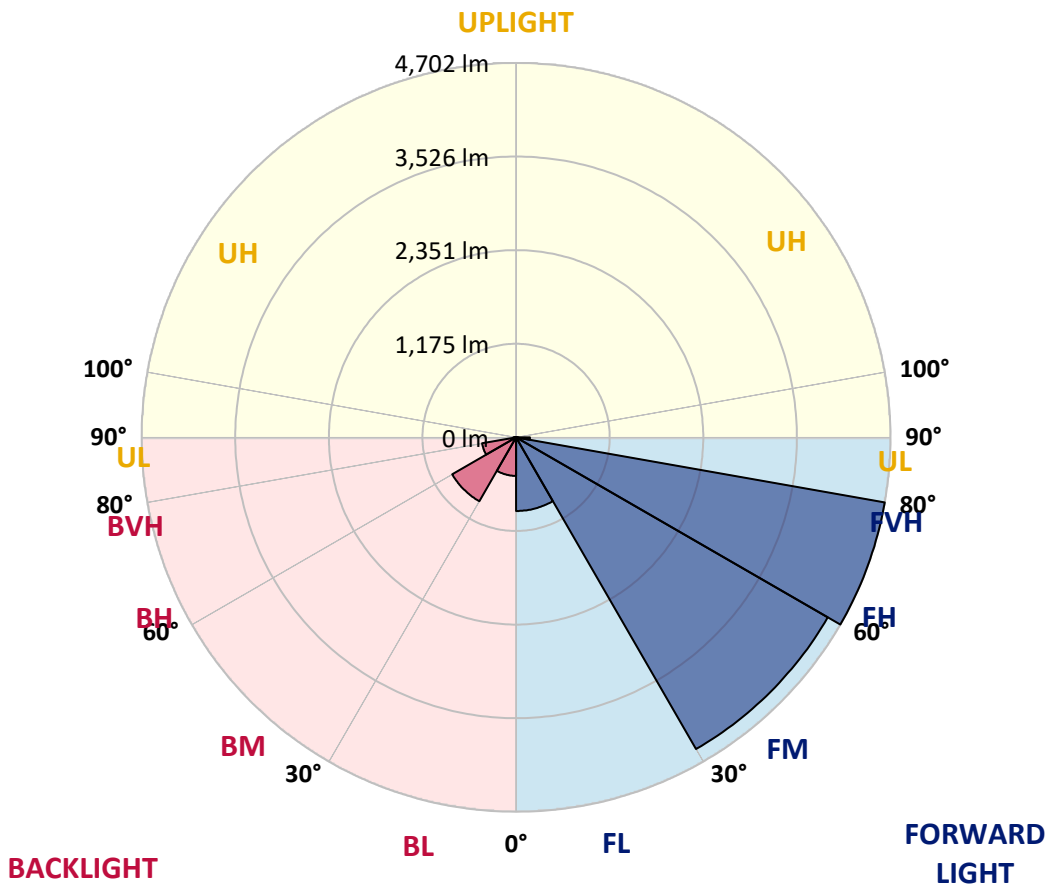
REPORT NUMBER: P634683

CATALOG NUMBER: GWS-SA3C-730-U-SL4-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 924.8 | 7.6 | | | |
| FM (30°-60°) | 4519.8 | 37.0 | | | |
| FH (60°-80°) | 4702.0 | 38.5 | | | G2/5000 |
| FVH (80°-90°) | 173.9 | 1.4 | | | G2/225 |
| BL (0°-30°) | 484.2 | 4.0 | B1/500 | | |
| BM (30°-60°) | 926.2 | 7.6 | B1/1000 | | |
| BH (60°-80°) | 433.7 | 3.6 | B1/500 | | G1/500 |
| BVH (80°-90°) | 34.9 | 0.3 | | | 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 IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 40° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 |
| 2.5° | 2084.4 | 2088.0 | 2090.7 | 2094.4 | 2092.6 | 2087.1 | 2091.6 | 2091.6 | 2081.6 | 2070.7 | 2060.7 |
| 5° | 2087.1 | 2091.6 | 2090.7 | 2089.8 | 2082.5 | 2073.4 | 2073.4 | 2068.0 | 2050.7 | 2033.4 | 2017.0 |
| 7.5° | 2081.6 | 2080.7 | 2079.8 | 2077.1 | 2068.9 | 2058.9 | 2057.0 | 2046.1 | 2023.4 | 1999.7 | 1976.0 |
| 10° | 2057.0 | 2056.1 | 2058.9 | 2065.2 | 2063.4 | 2054.3 | 2054.3 | 2044.3 | 2017.9 | 1988.8 | 1957.8 |
| 12.5° | 2037.0 | 2037.0 | 2047.9 | 2065.2 | 2071.6 | 2068.0 | 2068.9 | 2061.6 | 2031.5 | 1996.9 | 1960.5 |
| 15° | 2039.7 | 2040.7 | 2064.3 | 2092.6 | 2104.4 | 2101.7 | 2102.6 | 2094.4 | 2060.7 | 2026.1 | 1976.9 |
| 17.5° | 2058.0 | 2062.5 | 2103.5 | 2142.6 | 2158.1 | 2154.5 | 2148.1 | 2134.4 | 2096.2 | 2057.0 | 1996.9 |
| 20° | 2096.2 | 2103.5 | 2156.3 | 2205.5 | 2223.7 | 2215.5 | 2204.6 | 2177.2 | 2135.4 | 2092.6 | 2018.8 |
| 22.5° | 2171.8 | 2176.3 | 2234.6 | 2282.9 | 2297.4 | 2287.4 | 2265.6 | 2226.4 | 2178.2 | 2133.5 | 2045.2 |
| 25° | 2278.3 | 2283.8 | 2339.3 | 2384.0 | 2380.3 | 2368.5 | 2338.4 | 2290.2 | 2232.8 | 2185.4 | 2083.5 |
| 27.5° | 2404.9 | 2414.0 | 2468.6 | 2504.1 | 2480.5 | 2463.2 | 2429.5 | 2371.2 | 2306.5 | 2263.8 | 2141.7 |
| 30° | 2543.3 | 2546.9 | 2593.4 | 2628.9 | 2592.5 | 2568.8 | 2527.8 | 2465.0 | 2406.7 | 2374.8 | 2229.1 |
| 32.5° | 2677.2 | 2680.8 | 2720.9 | 2740.9 | 2702.7 | 2685.4 | 2649.8 | 2583.4 | 2542.4 | 2525.1 | 2359.4 |
| 35° | 2818.3 | 2817.4 | 2850.2 | 2867.5 | 2828.3 | 2821.0 | 2784.6 | 2733.6 | 2726.3 | 2749.1 | 2549.7 |
| 37.5° | 2959.4 | 2951.3 | 2968.6 | 2991.3 | 2969.5 | 2976.8 | 2953.1 | 2935.8 | 2964.0 | 3023.2 | 2802.8 |
| 40° | 3072.4 | 3072.4 | 3090.6 | 3118.8 | 3126.1 | 3158.0 | 3144.3 | 3167.1 | 3258.1 | 3399.3 | 3116.1 |
| 42.5° | 3172.5 | 3173.4 | 3211.7 | 3255.4 | 3308.2 | 3357.4 | 3368.3 | 3427.5 | 3616.0 | 3837.3 | 3509.5 |
| 45° | 3277.2 | 3278.2 | 3330.1 | 3393.8 | 3505.8 | 3599.6 | 3621.5 | 3754.4 | 4023.9 | 4293.5 | 3936.5 |
| 47.5° | 3398.4 | 3388.3 | 3460.3 | 3566.8 | 3726.2 | 3860.9 | 3917.4 | 4105.9 | 4446.5 | 4777.9 | 4339.0 |
| 50° | 3534.9 | 3514.0 | 3594.1 | 3778.1 | 3974.8 | 4159.6 | 4254.3 | 4470.1 | 4899.9 | 5225.0 | 4717.8 |
| 52.5° | 3688.8 | 3677.0 | 3760.8 | 3984.8 | 4285.3 | 4498.4 | 4626.8 | 4910.0 | 5340.7 | 5670.3 | 5018.3 |
| 55° | 3880.1 | 3851.8 | 3972.9 | 4258.0 | 4649.5 | 4920.9 | 5073.0 | 5345.2 | 5822.4 | 6074.6 | 5247.8 |
| 57.5° | 4089.5 | 4058.5 | 4220.6 | 4599.4 | 5123.0 | 5420.8 | 5611.1 | 5835.1 | 6275.9 | 6384.2 | 5382.6 |
| 60° | 4315.3 | 4305.3 | 4497.5 | 5000.1 | 5687.6 | 6033.6 | 6171.1 | 6374.2 | 6670.1 | 6563.6 | 5348.9 |
| 62.5° | 4522.0 | 4518.4 | 4798.0 | 5434.5 | 6285.9 | 6666.5 | 6775.8 | 6829.5 | 6954.3 | 6551.8 | 5081.1 |
| 65° | 4739.7 | 4770.6 | 5148.5 | 5938.0 | 6971.6 | 7344.9 | 7390.4 | 7253.8 | 7049.9 | 6241.3 | 4533.0 |
| 67.5° | 4767.0 | 4827.1 | 5368.9 | 6409.7 | 7621.7 | 7974.1 | 7937.7 | 7415.0 | 6767.6 | 5377.1 | 3553.2 |
| 70° | 4263.4 | 4368.1 | 5017.4 | 6481.7 | 8079.8 | 8339.3 | 8076.1 | 7068.1 | 5743.2 | 3895.5 | 2234.6 |
| 72.5° | 3562.3 | 3652.4 | 4226.1 | 5527.3 | 7488.8 | 7819.3 | 7463.3 | 5982.6 | 4058.5 | 2234.6 | 1138.2 |
| 75° | 2772.8 | 2877.5 | 3406.6 | 4393.6 | 5606.6 | 5738.6 | 5560.1 | 4172.4 | 2231.0 | 921.5 | 517.2 |
| 77.5° | 1691.9 | 1767.5 | 2179.1 | 2976.8 | 3922.9 | 3725.3 | 3157.1 | 2339.3 | 978.9 | 441.6 | 319.6 |
| 80° | 748.5 | 795.0 | 1073.6 | 1599.0 | 2266.5 | 2142.6 | 1689.2 | 998.9 | 535.4 | 280.5 | 223.1 |
| 82.5° | 401.6 | 431.6 | 529.1 | 632.9 | 995.3 | 1040.8 | 844.1 | 575.5 | 287.7 | 160.3 | 127.5 |
| 85° | 176.7 | 194.0 | 240.4 | 229.5 | 326.9 | 321.4 | 324.2 | 395.2 | 137.5 | 73.8 | 82.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 10.0 | 52.8 | 13.7 | 21.9 | 19.1 |
| 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: P634683
 CATALOG NUMBER: GWS-SA3C-730-U-SL4-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 | 2071.6 |
| 2.5° | 2049.8 | 2033.4 | 2028.8 | 2023.4 | 2013.3 | 1996.0 | 1983.3 | 1968.7 | 1962.3 | 1955.1 | 1956.0 |
| 5° | 1998.8 | 1978.7 | 1959.6 | 1935.0 | 1904.1 | 1869.5 | 1845.8 | 1818.5 | 1803.9 | 1790.2 | 1793.9 |
| 7.5° | 1955.1 | 1924.1 | 1884.9 | 1833.0 | 1777.5 | 1715.6 | 1665.5 | 1626.3 | 1599.9 | 1581.7 | 1590.8 |
| 10° | 1927.7 | 1891.3 | 1823.0 | 1738.3 | 1644.5 | 1549.8 | 1477.9 | 1410.5 | 1368.6 | 1335.9 | 1334.0 |
| 12.5° | 1922.3 | 1874.9 | 1775.7 | 1652.7 | 1517.1 | 1390.5 | 1284.9 | 1193.8 | 1138.2 | 1097.3 | 1112.8 |
| 15° | 1927.7 | 1867.6 | 1734.7 | 1573.5 | 1402.3 | 1231.1 | 1100.0 | 995.3 | 928.8 | 891.5 | 888.7 |
| 17.5° | 1934.1 | 1860.4 | 1688.3 | 1487.9 | 1282.1 | 1086.3 | 934.3 | 823.2 | 754.9 | 717.6 | 718.5 |
| 20° | 1939.6 | 1849.4 | 1633.6 | 1394.1 | 1160.1 | 951.6 | 794.0 | 688.4 | 627.4 | 600.1 | 604.6 |
| 22.5° | 1948.7 | 1838.5 | 1575.3 | 1294.0 | 1035.4 | 821.4 | 682.9 | 597.4 | 560.9 | 542.7 | 543.6 |
| 25° | 1966.0 | 1832.1 | 1515.2 | 1184.7 | 912.4 | 717.6 | 606.5 | 549.1 | 526.3 | 515.4 | 514.5 |
| 27.5° | 2001.5 | 1837.6 | 1452.4 | 1079.1 | 801.3 | 638.3 | 557.3 | 520.0 | 504.5 | 497.2 | 496.3 |
| 30° | 2060.7 | 1859.4 | 1397.8 | 971.6 | 705.7 | 576.4 | 523.6 | 500.8 | 491.7 | 485.3 | 484.4 |
| 32.5° | 2150.8 | 1900.4 | 1338.6 | 871.4 | 628.3 | 530.9 | 497.2 | 485.3 | 479.0 | 475.3 | 475.3 |
| 35° | 2287.4 | 1975.1 | 1280.3 | 784.0 | 568.2 | 495.4 | 476.2 | 471.7 | 466.2 | 464.4 | 466.2 |
| 37.5° | 2484.1 | 2094.4 | 1227.5 | 707.5 | 525.4 | 468.0 | 453.5 | 455.3 | 450.7 | 453.5 | 456.2 |
| 40° | 2733.6 | 2253.7 | 1182.9 | 644.7 | 493.5 | 448.0 | 433.4 | 439.8 | 437.1 | 439.8 | 444.4 |
| 42.5° | 3049.6 | 2451.3 | 1149.2 | 595.5 | 470.8 | 431.6 | 418.0 | 424.3 | 422.5 | 426.2 | 430.7 |
| 45° | 3402.0 | 2711.8 | 1133.7 | 560.9 | 454.4 | 419.8 | 405.2 | 409.8 | 407.9 | 410.7 | 415.2 |
| 47.5° | 3739.8 | 2948.5 | 1147.4 | 540.9 | 440.7 | 409.8 | 394.3 | 396.1 | 395.2 | 394.3 | 397.0 |
| 50° | 4031.2 | 3137.0 | 1186.5 | 534.5 | 431.6 | 399.8 | 385.2 | 386.1 | 383.4 | 377.9 | 379.7 |
| 52.5° | 4268.9 | 3288.2 | 1210.2 | 534.5 | 427.1 | 388.8 | 375.2 | 376.1 | 370.6 | 363.3 | 364.2 |
| 55° | 4425.5 | 3349.2 | 1191.1 | 533.6 | 425.3 | 379.7 | 365.2 | 366.1 | 360.6 | 351.5 | 352.4 |
| 57.5° | 4470.1 | 3290.0 | 1110.9 | 523.6 | 423.4 | 372.4 | 355.1 | 357.0 | 353.3 | 343.3 | 343.3 |
| 60° | 4345.4 | 3073.3 | 964.3 | 500.8 | 418.9 | 367.9 | 347.8 | 350.6 | 348.8 | 338.7 | 338.7 |
| 62.5° | 4018.5 | 2688.1 | 789.5 | 466.2 | 406.1 | 362.4 | 341.5 | 346.9 | 351.5 | 346.0 | 345.1 |
| 65° | 3406.6 | 2153.6 | 642.0 | 428.0 | 389.7 | 353.3 | 332.4 | 346.0 | 356.0 | 363.3 | 363.3 |
| 67.5° | 2556.1 | 1541.6 | 523.6 | 387.9 | 365.2 | 335.1 | 320.5 | 333.3 | 340.6 | 345.1 | 347.8 |
| 70° | 1558.0 | 907.0 | 412.5 | 341.5 | 329.6 | 307.8 | 296.9 | 284.1 | 274.1 | 272.3 | 273.2 |
| 72.5° | 762.2 | 519.0 | 335.1 | 290.5 | 281.4 | 261.3 | 236.8 | 231.3 | 226.7 | 224.0 | 223.1 |
| 75° | 419.8 | 361.5 | 276.8 | 241.3 | 224.9 | 200.3 | 194.9 | 185.8 | 183.9 | 180.3 | 181.2 |
| 77.5° | 296.9 | 285.0 | 228.6 | 195.8 | 171.2 | 158.4 | 161.2 | 154.8 | 154.8 | 152.1 | 151.2 |
| 80° | 223.1 | 224.0 | 175.7 | 143.0 | 126.6 | 122.0 | 124.8 | 124.8 | 122.9 | 122.0 | 121.1 |
| 82.5° | 141.1 | 159.4 | 118.4 | 92.0 | 90.1 | 91.1 | 90.1 | 89.2 | 91.1 | 88.3 | 87.4 |
| 85° | 97.4 | 114.7 | 71.9 | 54.6 | 54.6 | 53.7 | 55.5 | 54.6 | 56.5 | 53.7 | 53.7 |
| 87.5° | 21.9 | 51.0 | 26.4 | 16.4 | 17.3 | 16.4 | 17.3 | 18.2 | 20.0 | 20.9 | 20.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

Data in this report applies to families of products SA1C-730-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 2993 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| Rf: | 75.7 | | | | |
| Rg: | 93.9 | | | | |



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

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| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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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

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Photopic Flux vs. Wavelength

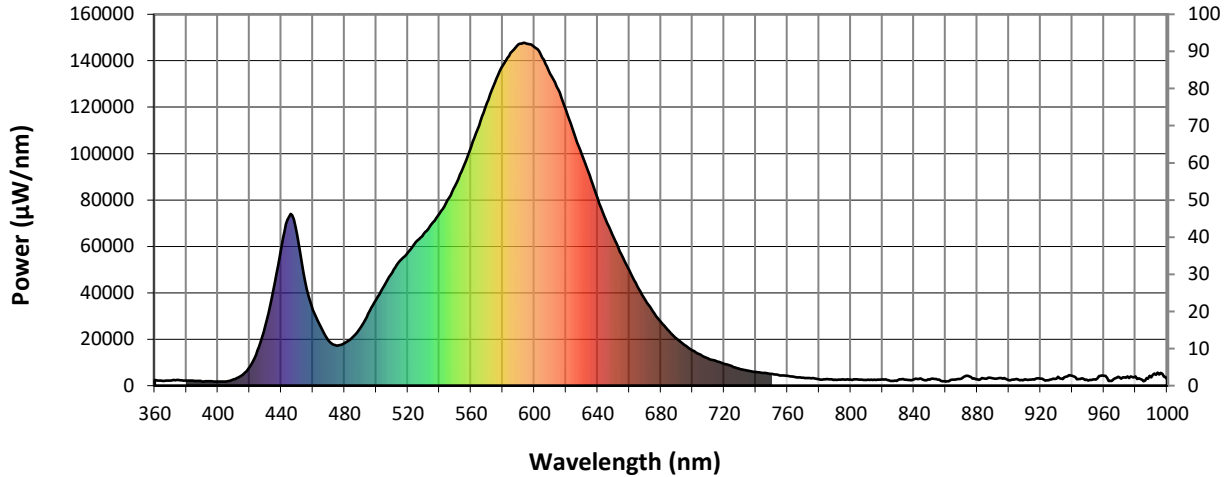


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| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

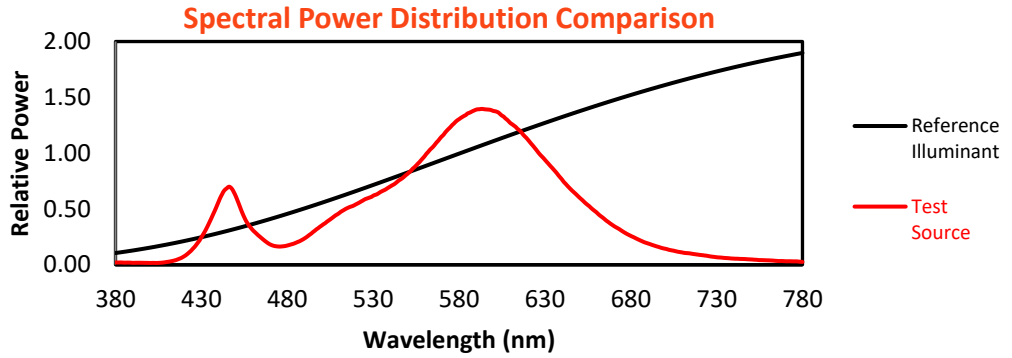
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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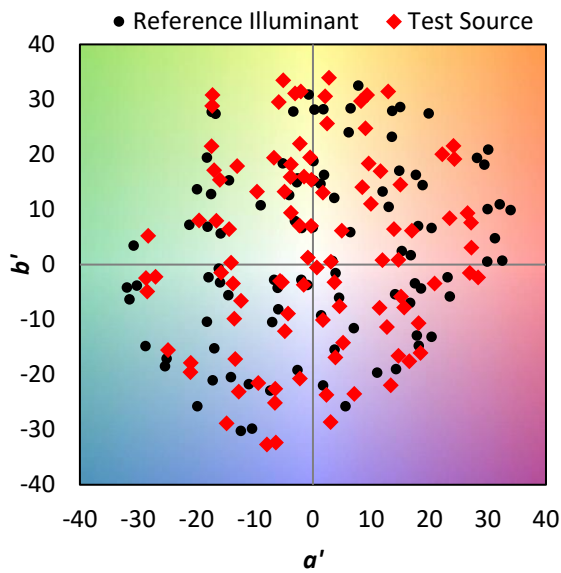
TM-30-18

Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_g = -38.3$



Color Vector Graphics



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

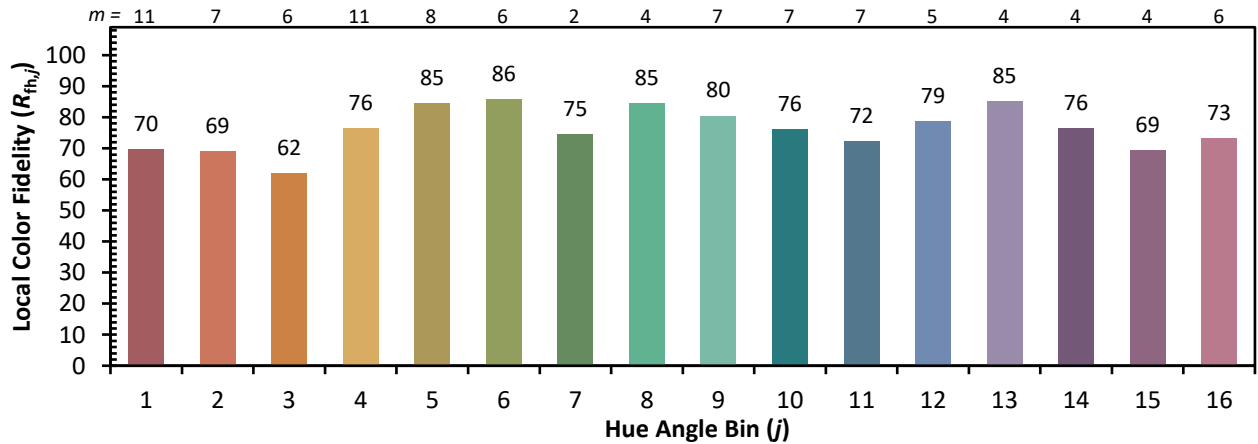
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)