

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: P635032

Luminaire Tested: GWS-SA3C-830-U-T3-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P635032
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-25)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3C-830-U-T3-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (48) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9458 lumens
Efficiency: N/A
Efficacy: 101.7 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B2 - U0 - G2

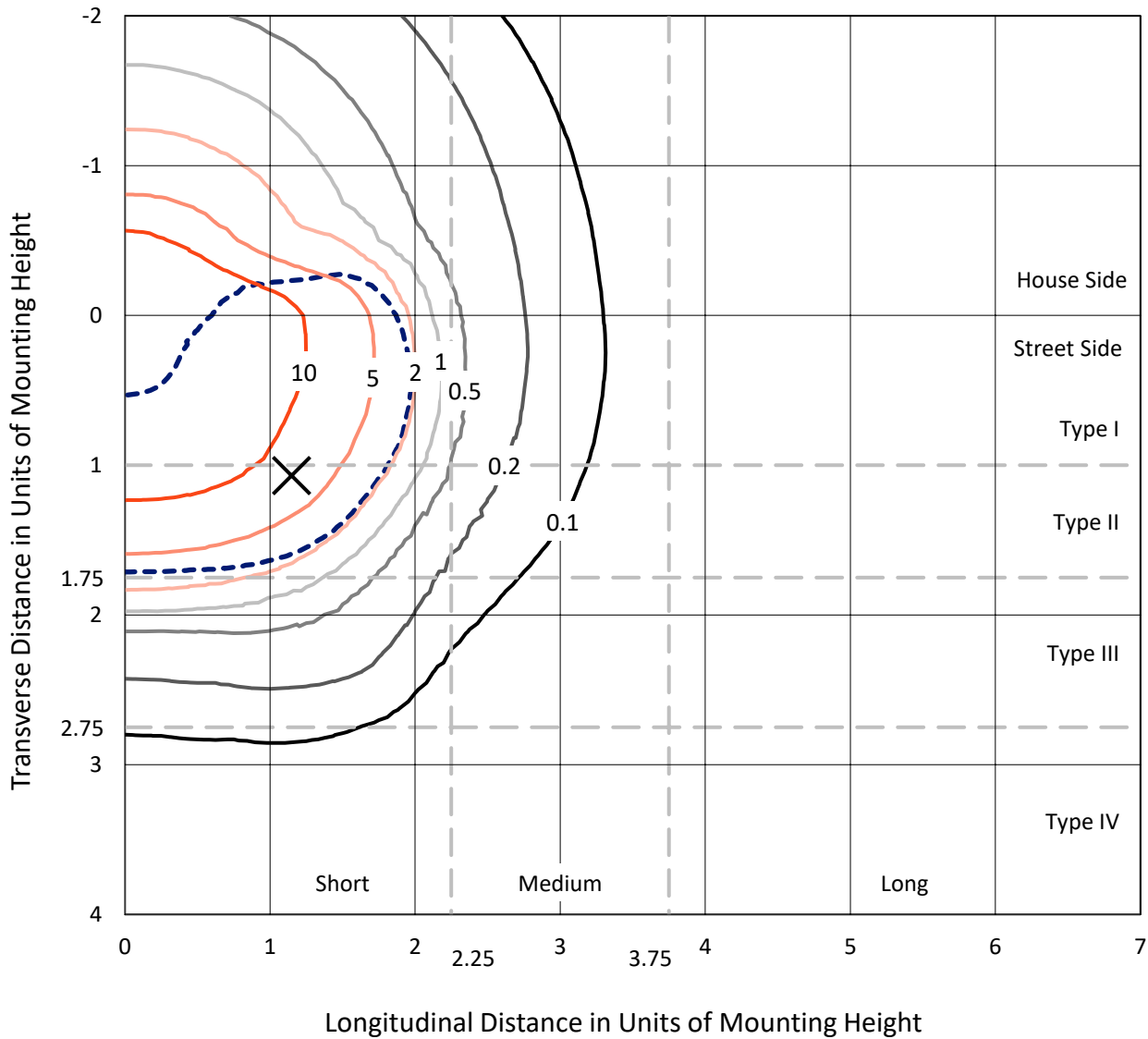
Input Watts (W): 93
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P635032
 CATALOG NUMBER: GWS-SA3C-830-U-T3-W-GRSWH

Iso-Footcandle Lines of Horizontal Illumination

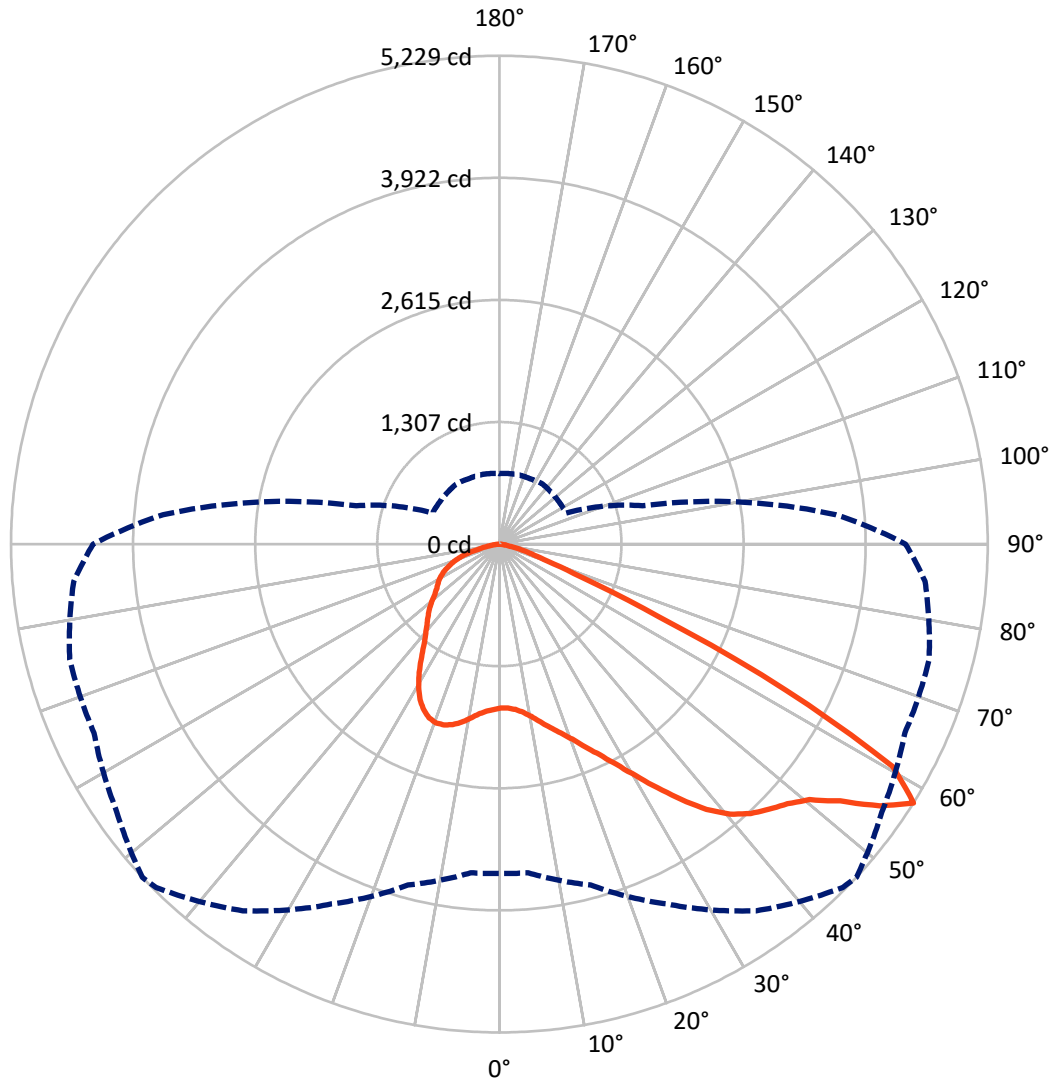
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 19.6 fc
 Type II - Short - N/A

REPORT NUMBER: P635032
CATALOG NUMBER: GWS-SA3C-830-U-T3-W-GRSWH

Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

REPORT NUMBER: P635032

CATALOG NUMBER: GWS-SA3C-830-U-T3-W-GRSWH

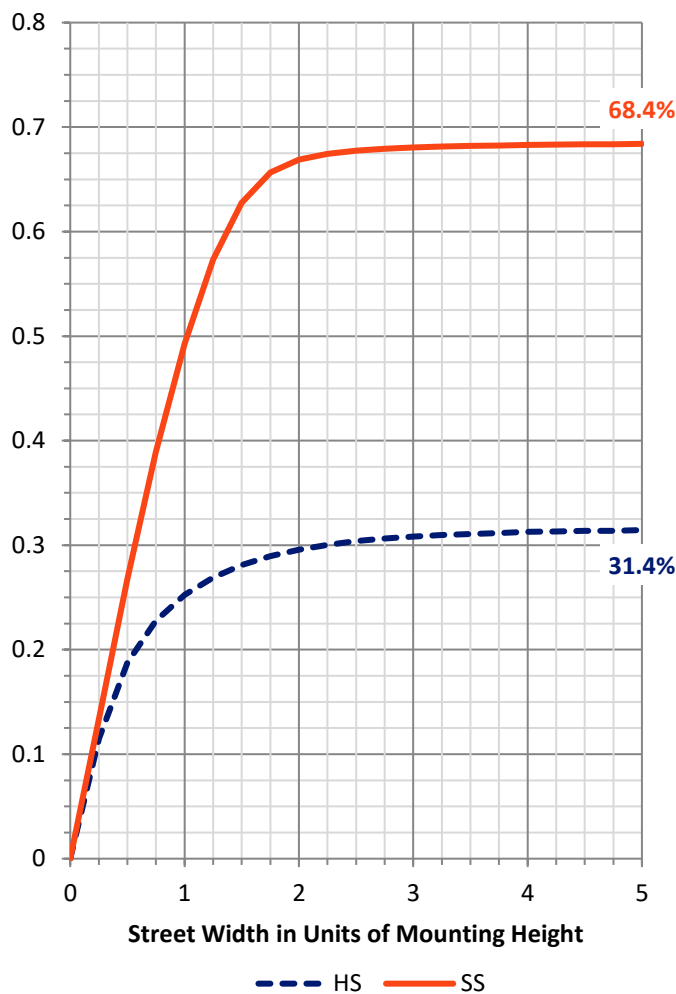
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2993.4 | 0.0 | 2993.4 |
| | % Fixture | 31.6 | 0.0 | 31.6 |
| Street Side | Lumens | 6464.6 | 0.0 | 6464.6 |
| | % Fixture | 68.4 | 0.0 | 68.4 |
| Total | Lumens | 9458.0 | 0.0 | 9458.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 173.0 | 1.8 |
| 10°-20° | 569.0 | 6.0 |
| 20°-30° | 1024.6 | 10.8 |
| 30°-40° | 1547.5 | 16.4 |
| 40°-50° | 2083.9 | 22.0 |
| 50°-60° | 2504.0 | 26.5 |
| 60°-70° | 1219.5 | 12.9 |
| 70°-80° | 300.4 | 3.2 |
| 80°-90° | 36.1 | 0.4 |
| 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° | 9458.0 | 100.0 |
| 0°-180° | 9458.0 | 100.0 |

Coefficient of Utilization



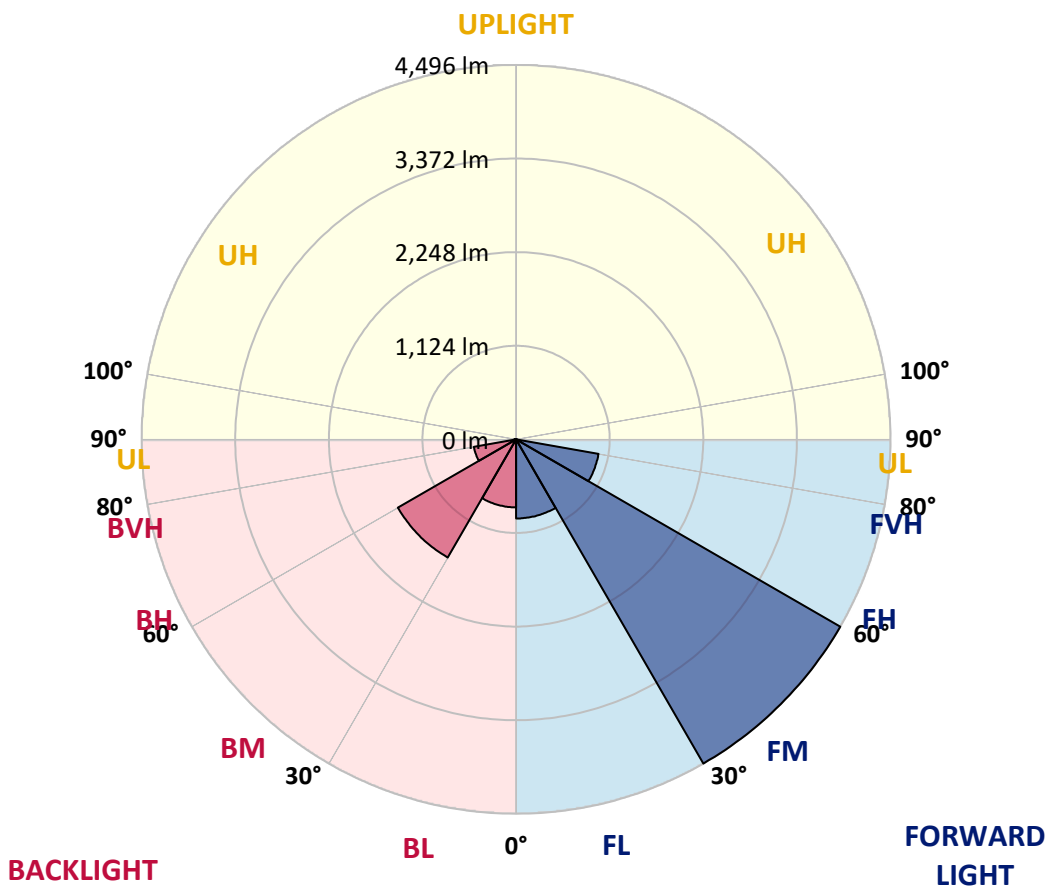
REPORT NUMBER: P635032

CATALOG NUMBER: GWS-SA3C-830-U-T3-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 950.0 | 10.0 | | | |
| FM (30°-60°) | 4495.9 | 47.5 | | | |
| FH (60°-80°) | 1005.1 | 10.6 | | | G1/1800 |
| FVH (80°-90°) | 13.6 | 0.1 | | | G1/100 |
| BL (0°-30°) | 816.6 | 8.6 | B2/1000 | | |
| BM (30°-60°) | 1639.5 | 17.3 | B2/2500 | | |
| BH (60°-80°) | 514.9 | 5.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 22.5 | 0.2 | | | 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 II Short





REPORT NUMBER: P635032

CATALOG NUMBER: GWS-SA3C-830-U-T3-W-GRSWH

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 |
| 2.5° | 1750.8 | 1750.0 | 1750.0 | 1754.8 | 1754.8 | 1756.4 | 1758.8 | 1761.1 | 1761.9 | 1758.0 | 1749.2 |
| 5° | 1769.9 | 1769.9 | 1769.9 | 1773.9 | 1773.9 | 1775.4 | 1778.6 | 1779.4 | 1778.6 | 1772.3 | 1763.5 |
| 7.5° | 1800.1 | 1800.1 | 1800.9 | 1805.6 | 1809.6 | 1812.0 | 1817.6 | 1816.8 | 1814.4 | 1804.0 | 1792.9 |
| 10° | 1849.3 | 1851.7 | 1854.1 | 1859.7 | 1867.6 | 1873.2 | 1877.1 | 1877.1 | 1874.0 | 1858.1 | 1843.8 |
| 12.5° | 1919.2 | 1922.4 | 1924.8 | 1929.6 | 1935.9 | 1945.4 | 1954.2 | 1954.2 | 1950.2 | 1930.4 | 1908.9 |
| 15° | 2001.1 | 2004.2 | 2003.4 | 2005.0 | 2016.9 | 2030.4 | 2037.6 | 2042.4 | 2043.9 | 2016.1 | 1982.8 |
| 17.5° | 2094.8 | 2098.0 | 2094.8 | 2090.0 | 2091.6 | 2113.1 | 2125.8 | 2143.2 | 2153.6 | 2116.2 | 2063.0 |
| 20° | 2179.8 | 2176.6 | 2176.6 | 2179.8 | 2184.6 | 2210.8 | 2229.8 | 2258.4 | 2271.1 | 2225.9 | 2143.2 |
| 22.5° | 2269.6 | 2276.7 | 2273.5 | 2273.5 | 2292.6 | 2336.3 | 2359.3 | 2396.7 | 2410.2 | 2351.4 | 2240.2 |
| 25° | 2385.5 | 2391.9 | 2390.3 | 2391.9 | 2414.1 | 2476.1 | 2499.1 | 2568.2 | 2581.7 | 2497.5 | 2347.4 |
| 27.5° | 2512.6 | 2523.0 | 2527.7 | 2526.1 | 2561.9 | 2642.9 | 2671.5 | 2767.6 | 2792.3 | 2661.2 | 2461.8 |
| 30° | 2677.9 | 2689.0 | 2693.0 | 2691.4 | 2733.5 | 2843.9 | 2876.5 | 2986.1 | 3021.0 | 2855.0 | 2607.2 |
| 32.5° | 2869.3 | 2880.4 | 2892.4 | 2897.1 | 2951.1 | 3063.9 | 3110.8 | 3224.4 | 3274.5 | 3079.0 | 2782.7 |
| 35° | 3059.2 | 3068.7 | 3091.7 | 3129.1 | 3203.0 | 3318.1 | 3359.4 | 3471.5 | 3519.9 | 3311.8 | 2994.8 |
| 37.5° | 3268.9 | 3275.2 | 3295.1 | 3346.7 | 3453.2 | 3562.8 | 3604.1 | 3711.4 | 3716.9 | 3536.6 | 3234.7 |
| 40° | 3498.5 | 3498.5 | 3494.5 | 3545.3 | 3656.5 | 3767.0 | 3802.7 | 3864.7 | 3832.1 | 3709.8 | 3468.3 |
| 42.5° | 3693.1 | 3689.9 | 3693.1 | 3740.8 | 3823.4 | 3913.1 | 3944.1 | 3932.2 | 3890.9 | 3842.4 | 3679.6 |
| 45° | 3868.6 | 3871.0 | 3899.6 | 3936.2 | 3979.1 | 4032.3 | 4050.6 | 3983.0 | 3945.7 | 3948.9 | 3848.8 |
| 47.5° | 3987.8 | 3990.2 | 4056.9 | 4118.1 | 4144.3 | 4161.0 | 4153.0 | 4059.3 | 4040.2 | 4076.0 | 3979.1 |
| 50° | 4003.7 | 4016.4 | 4131.6 | 4257.1 | 4322.2 | 4324.6 | 4302.4 | 4188.0 | 4182.4 | 4222.9 | 4049.0 |
| 52.5° | 4006.9 | 4019.6 | 4163.4 | 4389.8 | 4559.0 | 4594.7 | 4569.3 | 4450.1 | 4392.1 | 4351.6 | 4134.8 |
| 55° | 3995.0 | 4009.3 | 4168.1 | 4478.7 | 4802.8 | 4945.8 | 4948.2 | 4779.8 | 4594.7 | 4567.7 | 4379.4 |
| 57.5° | 3527.1 | 3532.6 | 3778.9 | 4252.3 | 4793.3 | 5198.4 | 5229.4 | 5000.6 | 4789.3 | 4763.9 | 4575.7 |
| 60° | 2457.0 | 2479.3 | 2747.0 | 3372.2 | 4026.7 | 4740.9 | 4841.0 | 4774.2 | 4632.8 | 4447.8 | 3925.8 |
| 62.5° | 1230.5 | 1249.6 | 1518.1 | 2109.1 | 2777.2 | 3341.2 | 3448.4 | 3519.1 | 3552.5 | 3353.9 | 2673.1 |
| 65° | 529.9 | 544.2 | 711.0 | 1101.8 | 1572.1 | 1844.6 | 1881.9 | 1966.9 | 2175.0 | 1940.7 | 1440.2 |
| 67.5° | 354.3 | 363.8 | 448.8 | 672.0 | 926.3 | 943.7 | 938.2 | 956.4 | 1001.7 | 827.0 | 650.6 |
| 70° | 271.7 | 279.6 | 336.8 | 492.5 | 665.7 | 569.6 | 539.4 | 489.3 | 531.4 | 541.8 | 527.5 |
| 72.5° | 197.0 | 203.4 | 246.3 | 336.0 | 417.1 | 363.8 | 359.1 | 384.5 | 441.7 | 457.6 | 448.8 |
| 75° | 127.1 | 130.3 | 156.5 | 184.3 | 215.3 | 233.5 | 243.1 | 289.2 | 347.1 | 359.1 | 348.7 |
| 77.5° | 85.0 | 87.4 | 102.5 | 118.4 | 122.3 | 123.1 | 126.3 | 147.0 | 186.7 | 208.9 | 206.5 |
| 80° | 44.5 | 44.5 | 50.0 | 50.0 | 57.2 | 68.3 | 71.5 | 85.0 | 103.3 | 114.4 | 115.2 |
| 82.5° | 17.5 | 18.3 | 21.4 | 23.8 | 28.6 | 35.0 | 37.3 | 44.5 | 54.0 | 62.0 | 69.1 |
| 85° | 7.1 | 7.9 | 8.7 | 10.3 | 12.7 | 15.9 | 16.7 | 19.1 | 25.4 | 31.8 | 35.7 |
| 87.5° | 0.0 | 0.0 | 0.8 | 0.8 | 1.6 | 2.4 | 2.4 | 3.2 | 4.0 | 7.1 | 9.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P635032

CATALOG NUMBER: GWS-SA3C-830-U-T3-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 | 1754.0 |
| 2.5° | 1759.6 | 1749.2 | 1759.6 | 1762.7 | 1771.5 | 1774.7 | 1769.1 | 1768.3 | 1768.3 | 1760.4 | 1758.0 |
| 5° | 1771.5 | 1761.9 | 1772.3 | 1777.0 | 1789.7 | 1797.7 | 1799.3 | 1805.6 | 1809.6 | 1806.4 | 1805.6 |
| 7.5° | 1800.9 | 1789.0 | 1800.1 | 1807.2 | 1823.9 | 1836.6 | 1842.2 | 1856.5 | 1866.8 | 1865.2 | 1864.4 |
| 10° | 1852.5 | 1836.6 | 1849.3 | 1861.2 | 1879.5 | 1894.6 | 1895.4 | 1903.3 | 1913.7 | 1910.5 | 1908.9 |
| 12.5° | 1912.1 | 1897.0 | 1911.3 | 1923.2 | 1944.7 | 1951.0 | 1940.7 | 1937.5 | 1939.1 | 1935.1 | 1931.9 |
| 15° | 1985.2 | 1963.7 | 1976.4 | 1989.9 | 2001.8 | 1994.7 | 1972.5 | 1963.7 | 1962.9 | 1957.4 | 1954.2 |
| 17.5° | 2058.2 | 2031.2 | 2040.8 | 2047.9 | 2042.4 | 2020.1 | 1992.3 | 1977.2 | 1970.1 | 1959.0 | 1955.8 |
| 20° | 2130.5 | 2096.4 | 2094.8 | 2089.2 | 2063.8 | 2023.3 | 1986.0 | 1955.8 | 1937.5 | 1922.4 | 1916.8 |
| 22.5° | 2213.2 | 2165.5 | 2141.7 | 2116.2 | 2060.6 | 1994.7 | 1938.3 | 1895.4 | 1866.0 | 1846.9 | 1840.6 |
| 25° | 2302.1 | 2234.6 | 2185.4 | 2134.5 | 2028.9 | 1933.5 | 1854.9 | 1796.1 | 1761.1 | 1740.5 | 1733.3 |
| 27.5° | 2390.3 | 2297.4 | 2223.5 | 2136.9 | 1965.3 | 1845.4 | 1739.7 | 1660.3 | 1625.3 | 1608.6 | 1603.1 |
| 30° | 2509.5 | 2380.8 | 2268.8 | 2105.9 | 1881.9 | 1723.0 | 1591.2 | 1510.9 | 1487.9 | 1476.0 | 1471.2 |
| 32.5° | 2646.9 | 2486.4 | 2329.1 | 2040.8 | 1775.4 | 1580.0 | 1441.0 | 1385.4 | 1369.5 | 1346.5 | 1345.7 |
| 35° | 2828.0 | 2637.4 | 2386.3 | 1944.7 | 1641.2 | 1426.7 | 1325.8 | 1286.1 | 1257.5 | 1221.0 | 1217.8 |
| 37.5° | 3039.3 | 2825.6 | 2417.3 | 1822.3 | 1484.7 | 1300.4 | 1240.0 | 1195.5 | 1149.5 | 1101.0 | 1094.7 |
| 40° | 3257.8 | 3045.7 | 2419.7 | 1677.7 | 1331.4 | 1217.0 | 1166.2 | 1108.2 | 1051.0 | 997.0 | 989.8 |
| 42.5° | 3487.3 | 3250.6 | 2377.6 | 1510.9 | 1205.9 | 1144.7 | 1093.1 | 1020.0 | 955.6 | 919.1 | 915.1 |
| 45° | 3692.3 | 3415.9 | 2282.3 | 1335.4 | 1112.9 | 1084.3 | 1018.4 | 939.8 | 905.6 | 879.4 | 873.8 |
| 47.5° | 3853.6 | 3525.5 | 2153.6 | 1178.1 | 1037.5 | 1022.4 | 936.6 | 896.1 | 869.9 | 846.0 | 840.5 |
| 50° | 3933.0 | 3550.1 | 1986.0 | 1050.2 | 967.6 | 949.3 | 890.5 | 859.5 | 842.0 | 823.0 | 818.2 |
| 52.5° | 4031.5 | 3577.9 | 1841.4 | 942.9 | 899.2 | 874.6 | 852.4 | 827.7 | 815.0 | 803.1 | 799.2 |
| 55° | 4257.9 | 3682.8 | 1765.1 | 857.1 | 834.1 | 823.0 | 819.8 | 799.2 | 795.2 | 787.2 | 780.1 |
| 57.5° | 4350.0 | 3615.2 | 1584.8 | 787.2 | 782.5 | 784.1 | 792.0 | 772.9 | 769.0 | 759.4 | 754.7 |
| 60° | 3498.5 | 2732.7 | 1073.2 | 726.9 | 739.6 | 749.9 | 757.8 | 738.8 | 733.2 | 731.6 | 725.3 |
| 62.5° | 2241.8 | 1680.9 | 749.1 | 670.5 | 689.5 | 702.2 | 707.0 | 688.7 | 684.8 | 697.5 | 698.3 |
| 65° | 1167.0 | 915.9 | 607.7 | 610.1 | 626.0 | 645.0 | 654.6 | 648.2 | 646.6 | 660.1 | 660.9 |
| 67.5° | 595.8 | 560.0 | 529.9 | 538.6 | 551.3 | 575.9 | 598.2 | 626.0 | 635.5 | 637.1 | 637.9 |
| 70° | 507.6 | 491.7 | 476.6 | 482.2 | 495.7 | 509.2 | 530.6 | 544.2 | 528.3 | 524.3 | 522.7 |
| 72.5° | 432.1 | 420.2 | 413.1 | 419.4 | 426.6 | 424.2 | 417.8 | 424.2 | 426.6 | 427.4 | 428.2 |
| 75° | 336.0 | 327.3 | 321.7 | 322.5 | 322.5 | 313.8 | 301.9 | 294.7 | 286.8 | 280.4 | 280.4 |
| 77.5° | 205.7 | 207.3 | 212.9 | 212.1 | 211.3 | 208.1 | 196.2 | 189.9 | 170.8 | 165.2 | 165.2 |
| 80° | 117.6 | 120.0 | 125.5 | 127.1 | 127.1 | 123.1 | 111.2 | 104.1 | 95.3 | 91.4 | 90.6 |
| 82.5° | 71.5 | 74.7 | 77.8 | 79.4 | 80.2 | 75.5 | 65.1 | 59.6 | 54.8 | 50.8 | 50.8 |
| 85° | 37.3 | 38.9 | 42.1 | 42.9 | 40.5 | 35.7 | 30.2 | 27.8 | 23.0 | 22.2 | 22.2 |
| 87.5° | 10.3 | 11.1 | 12.7 | 10.3 | 9.5 | 7.1 | 4.0 | 3.2 | 1.6 | 0.8 | 0.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2408-195-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **GALN-SB1A-830-U-5WQ**
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K): 3050
 CIE u': 0.2476
 CIE v': 0.5251
 Duv: 0.0034
 CIE x: 0.4383
 CIE y: 0.4131
 CIE z: 0.1487
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 581
 Purity: 55.55201
 Rf: 81.5
 Rg: 99.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 81.0 | | |
| R1: | 79.6 | R9: | 7.1 |
| R2: | 85.6 | R10: | 67.0 |
| R3: | 92.0 | R11: | 82.7 |
| R4: | 82.6 | R12: | 63.2 |
| R5: | 78.9 | R13: | 80.3 |
| R6: | 81.7 | R14: | 95.0 |
| R7: | 85.2 | R15: | 71.7 |
| R8: | 62.0 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

| 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: SP1-2408-195-9

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

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 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

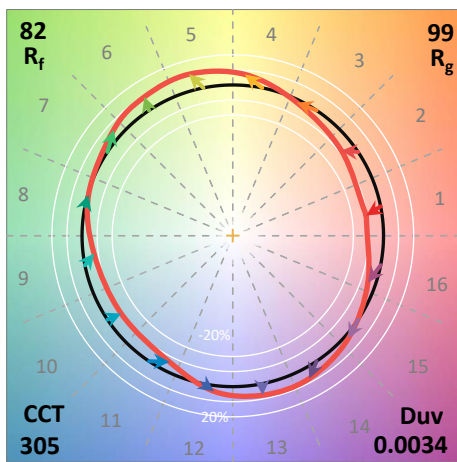
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 81.0$
 $R_9 = 7.1$



Color Vector Graphics

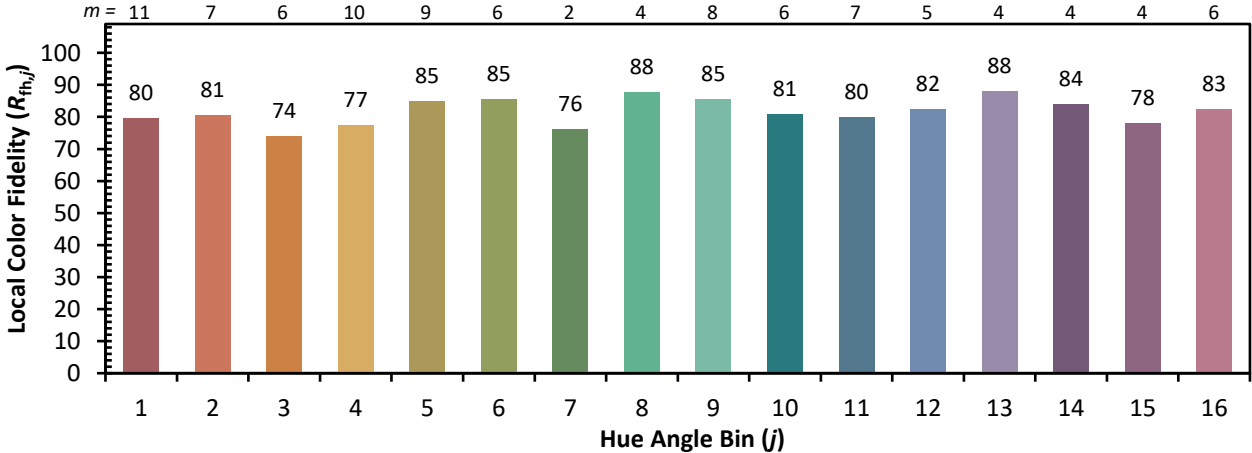


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)