

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: P634545

Luminaire Tested: GWS-SA3B-830-U-T4FT-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P634545
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-54)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3B-830-U-T4FT-W
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: (48) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7981.1 lumens
Efficiency: N/A
Efficacy: 116.9 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

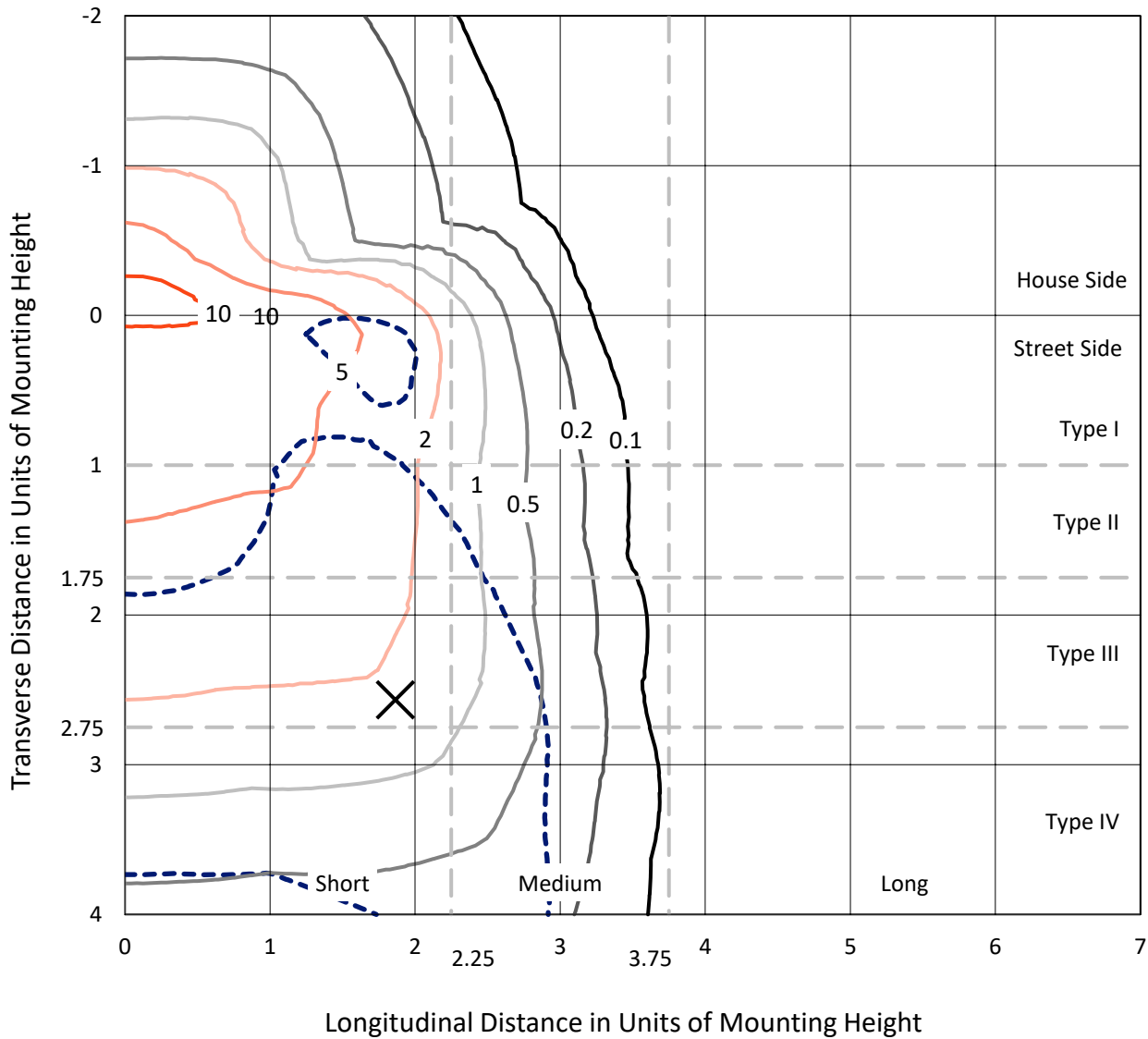
Input Watts (W): 68.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

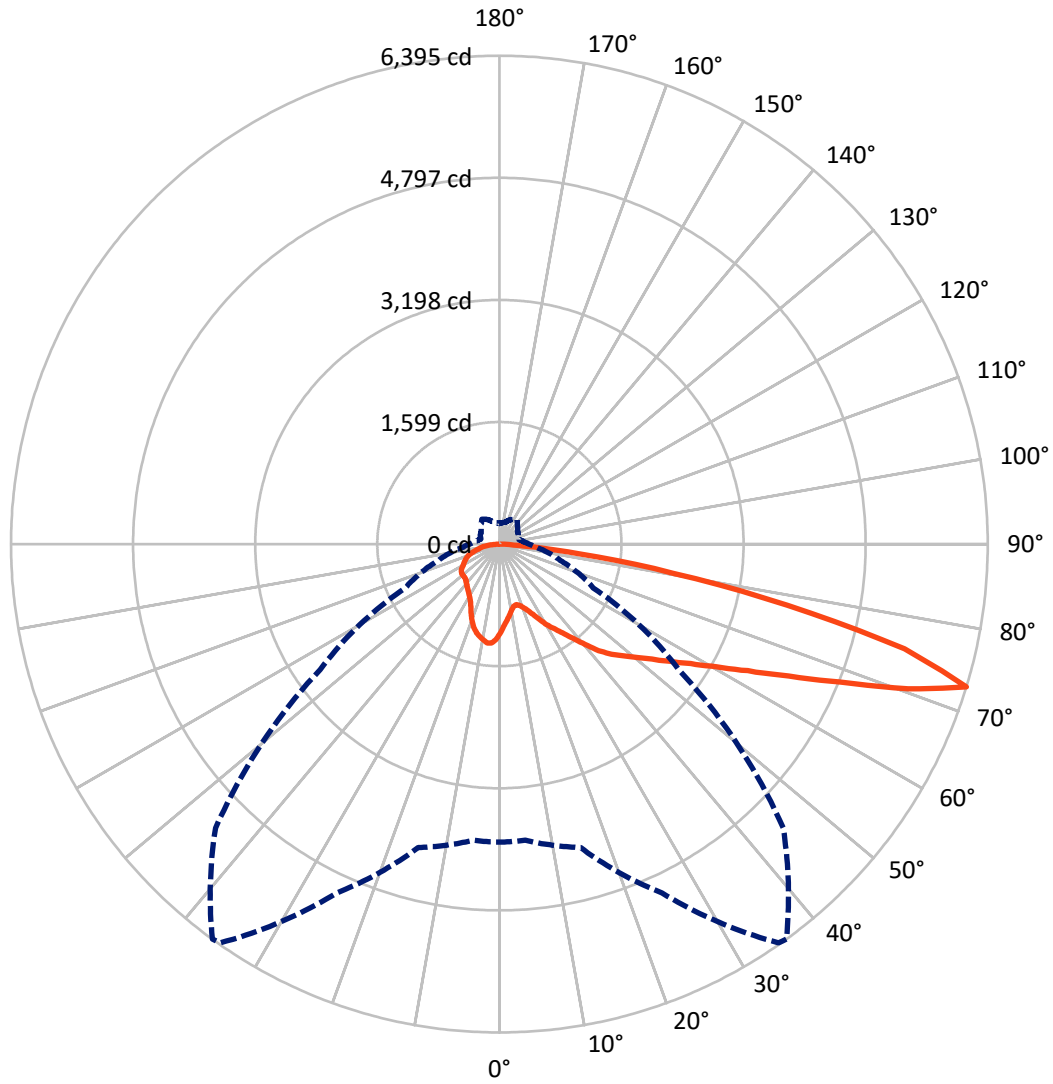
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.4 fc
 Type IV - Short - N/A

REPORT NUMBER: P634545
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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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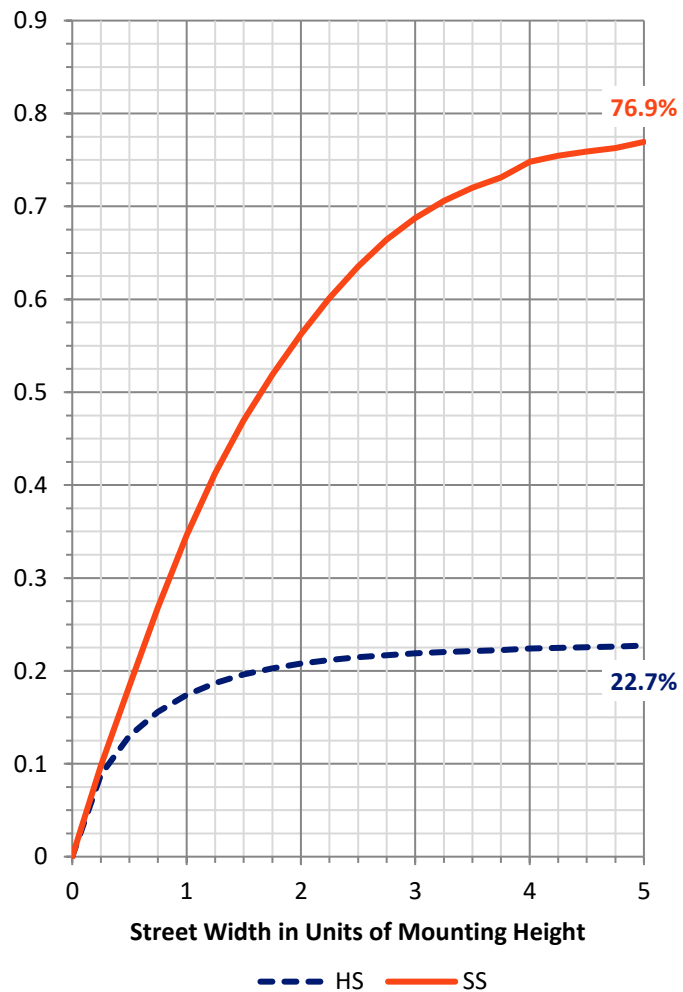
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1840.0 | 0.0 | 1840.0 |
| | % Fixture | 23.1 | 0.0 | 23.1 |
| Street Side | Lumens | 6141.1 | 0.0 | 6141.1 |
| | % Fixture | 76.9 | 0.0 | 76.9 |
| Total | Lumens | 7981.1 | 0.0 | 7981.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 109.2 | 1.4 |
| 10°-20° | 308.0 | 3.9 |
| 20°-30° | 510.2 | 6.4 |
| 30°-40° | 764.0 | 9.6 |
| 40°-50° | 1114.6 | 14.0 |
| 50°-60° | 1586.5 | 19.9 |
| 60°-70° | 2004.4 | 25.1 |
| 70°-80° | 1428.3 | 17.9 |
| 80°-90° | 155.9 | 2.0 |
| 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° | 7981.1 | 100.0 |
| 0°-180° | 7981.1 | 100.0 |

Coefficient of Utilization



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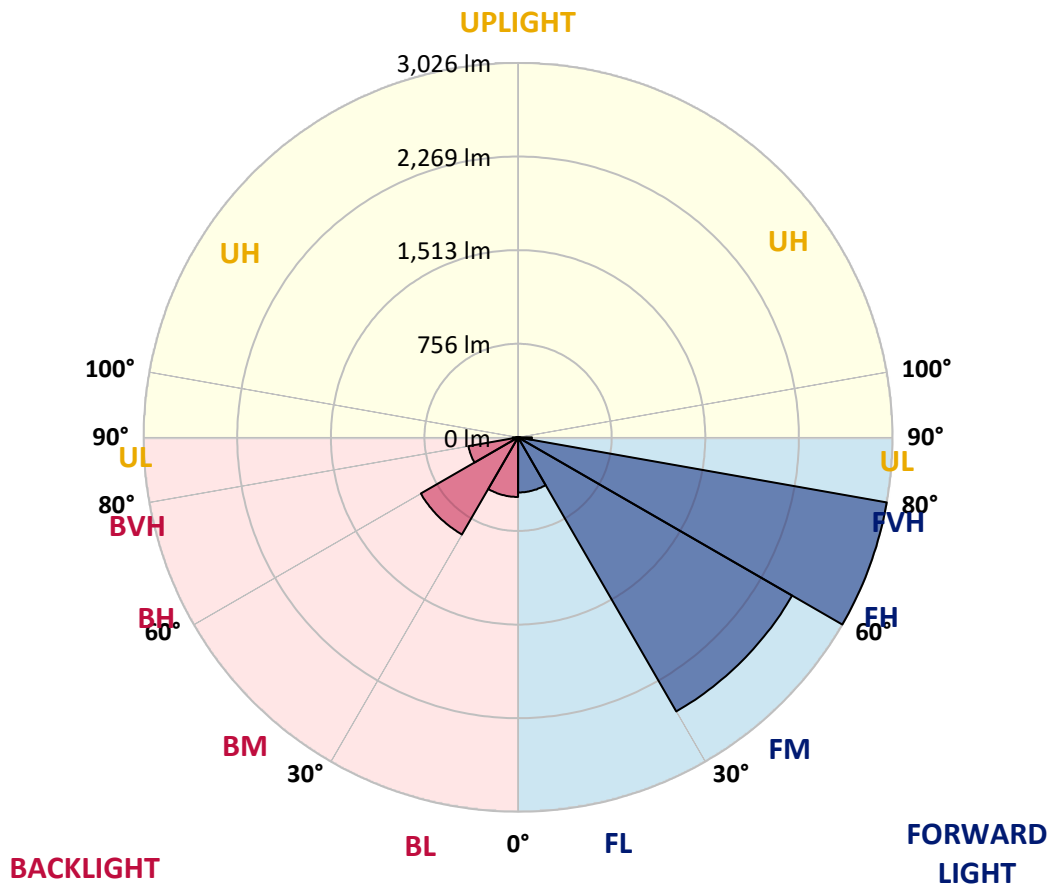
CATALOG NUMBER: GWS-SA3B-830-U-T4FT-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 445.6 | 5.6 | | | |
| FM (30°-60°) | 2557.7 | 32.0 | | | |
| FH (60°-80°) | 3025.9 | 37.9 | | | G2/5000 |
| FVH (80°-90°) | 111.9 | 1.4 | | | G2/225 |
| BL (0°-30°) | 481.8 | 6.0 | B1/500 | | |
| BM (30°-60°) | 907.4 | 11.4 | B1/1000 | | |
| BH (60°-80°) | 406.8 | 5.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 44.0 | 0.6 | | | 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





REPORT NUMBER: P634545

CATALOG NUMBER: GWS-SA3B-830-U-T4FT-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 |
| 2.5° | 1065.6 | 1063.8 | 1060.3 | 1070.9 | 1081.6 | 1080.4 | 1095.2 | 1109.4 | 1124.8 | 1140.8 | 1162.1 |
| 5° | 980.3 | 979.1 | 976.2 | 992.1 | 1008.1 | 1007.5 | 1031.8 | 1054.9 | 1086.3 | 1120.7 | 1163.3 |
| 7.5° | 895.0 | 892.0 | 896.2 | 916.3 | 938.8 | 941.2 | 974.4 | 1012.3 | 1057.9 | 1109.4 | 1169.8 |
| 10° | 819.8 | 819.2 | 821.0 | 843.5 | 877.2 | 879.6 | 922.3 | 975.0 | 1035.4 | 1104.1 | 1184.7 |
| 12.5° | 800.2 | 799.0 | 794.3 | 805.6 | 831.0 | 834.6 | 881.4 | 945.9 | 1020.0 | 1107.1 | 1204.8 |
| 15° | 832.2 | 829.3 | 812.7 | 807.3 | 819.8 | 822.7 | 862.4 | 928.8 | 1011.1 | 1112.4 | 1230.3 |
| 17.5° | 887.3 | 885.5 | 854.1 | 832.2 | 840.5 | 842.9 | 872.5 | 925.8 | 1008.7 | 1123.1 | 1261.7 |
| 20° | 967.9 | 960.2 | 911.0 | 877.8 | 877.8 | 881.4 | 899.2 | 938.8 | 1011.7 | 1136.1 | 1297.2 |
| 22.5° | 1074.5 | 1059.1 | 989.8 | 944.8 | 932.9 | 937.7 | 945.4 | 971.4 | 1024.1 | 1158.0 | 1341.6 |
| 25° | 1194.1 | 1179.9 | 1097.6 | 1034.2 | 1017.6 | 1019.4 | 1012.9 | 1017.6 | 1051.4 | 1188.2 | 1396.7 |
| 27.5° | 1321.5 | 1312.0 | 1224.3 | 1143.8 | 1117.7 | 1117.7 | 1094.6 | 1083.4 | 1089.3 | 1222.6 | 1458.3 |
| 30° | 1435.2 | 1422.2 | 1348.1 | 1259.9 | 1225.5 | 1225.5 | 1181.7 | 1157.4 | 1143.2 | 1264.6 | 1540.6 |
| 32.5° | 1495.0 | 1487.3 | 1438.2 | 1370.6 | 1328.6 | 1322.1 | 1284.2 | 1255.7 | 1222.6 | 1326.8 | 1652.0 |
| 35° | 1573.2 | 1571.4 | 1541.8 | 1489.1 | 1435.8 | 1426.3 | 1400.3 | 1377.8 | 1320.3 | 1404.4 | 1800.1 |
| 37.5° | 1671.5 | 1668.6 | 1663.8 | 1632.5 | 1568.5 | 1566.7 | 1543.6 | 1516.4 | 1441.7 | 1516.4 | 1979.6 |
| 40° | 1781.7 | 1776.4 | 1770.5 | 1769.9 | 1731.4 | 1724.9 | 1723.1 | 1692.3 | 1588.0 | 1651.4 | 2166.7 |
| 42.5° | 1933.4 | 1915.0 | 1859.3 | 1884.2 | 1912.6 | 1906.7 | 1929.2 | 1883.0 | 1770.5 | 1811.9 | 2343.8 |
| 45° | 2119.9 | 2074.9 | 1964.8 | 1971.9 | 2043.5 | 2055.4 | 2133.6 | 2122.3 | 1971.3 | 1997.3 | 2530.4 |
| 47.5° | 2231.9 | 2192.8 | 2090.3 | 2084.4 | 2173.8 | 2188.6 | 2358.6 | 2380.0 | 2187.5 | 2220.6 | 2760.8 |
| 50° | 2323.7 | 2296.5 | 2212.3 | 2220.6 | 2315.4 | 2330.2 | 2582.0 | 2627.6 | 2391.2 | 2449.3 | 3028.6 |
| 52.5° | 2434.5 | 2395.4 | 2330.2 | 2369.3 | 2485.4 | 2503.2 | 2830.1 | 2879.3 | 2574.8 | 2700.4 | 3305.8 |
| 55° | 2496.7 | 2480.7 | 2481.9 | 2541.7 | 2687.4 | 2711.7 | 3090.2 | 3081.9 | 2743.1 | 2915.4 | 3514.3 |
| 57.5° | 2640.0 | 2634.1 | 2688.6 | 2711.1 | 2923.1 | 2954.5 | 3350.2 | 3279.1 | 2895.9 | 3081.9 | 3614.4 |
| 60° | 2892.9 | 2878.1 | 2925.5 | 2959.9 | 3214.6 | 3259.0 | 3640.4 | 3472.2 | 2999.5 | 3205.7 | 3580.6 |
| 62.5° | 3248.3 | 3230.0 | 3231.7 | 3286.2 | 3604.9 | 3651.7 | 3963.3 | 3633.3 | 3031.5 | 3224.6 | 3366.8 |
| 65° | 3690.2 | 3663.5 | 3633.3 | 3707.4 | 4123.2 | 4162.3 | 4314.5 | 3750.6 | 2955.1 | 3042.2 | 2920.2 |
| 67.5° | 4156.4 | 4134.4 | 4098.9 | 4254.1 | 4794.3 | 4818.0 | 4708.4 | 3740.5 | 2712.9 | 2554.1 | 2048.3 |
| 70° | 4183.6 | 4188.9 | 4357.2 | 4918.7 | 5670.4 | 5676.3 | 5081.0 | 3538.0 | 2196.9 | 1655.6 | 1020.6 |
| 72.5° | 3902.8 | 3894.0 | 4113.1 | 5040.1 | 6375.2 | 6395.4 | 5256.9 | 2866.3 | 1357.6 | 825.7 | 478.6 |
| 75° | 3170.1 | 3185.5 | 3416.0 | 4409.9 | 5464.2 | 5482.0 | 4285.5 | 1689.9 | 645.0 | 404.0 | 306.2 |
| 77.5° | 1364.7 | 1450.6 | 1904.9 | 3106.8 | 3913.5 | 3858.4 | 2208.8 | 684.7 | 344.1 | 287.9 | 234.6 |
| 80° | 393.9 | 427.7 | 678.8 | 1477.3 | 2345.0 | 2303.6 | 874.3 | 256.5 | 239.9 | 216.2 | 168.2 |
| 82.5° | 127.4 | 141.0 | 248.8 | 588.2 | 1050.8 | 1049.6 | 331.7 | 151.6 | 157.0 | 146.9 | 108.4 |
| 85° | 35.5 | 40.9 | 76.4 | 178.3 | 325.2 | 318.7 | 96.0 | 71.7 | 83.5 | 84.7 | 53.9 |
| 87.5° | 0.0 | 0.0 | 0.6 | 1.2 | 1.2 | 1.2 | 2.4 | 10.7 | 24.3 | 30.8 | 21.9 |
| 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: P634545
 CATALOG NUMBER: GWS-SA3B-830-U-T4FT-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 | 1168.1 |
| 2.5° | 1175.2 | 1173.4 | 1197.7 | 1216.6 | 1234.4 | 1246.3 | 1249.8 | 1252.2 | 1256.9 | 1259.3 | 1256.9 |
| 5° | 1183.5 | 1192.4 | 1232.6 | 1262.2 | 1285.9 | 1300.2 | 1300.8 | 1299.6 | 1303.1 | 1300.2 | 1298.4 |
| 7.5° | 1201.2 | 1218.4 | 1269.4 | 1300.8 | 1316.2 | 1316.7 | 1302.5 | 1285.9 | 1277.7 | 1270.5 | 1268.2 |
| 10° | 1224.9 | 1250.4 | 1306.1 | 1326.8 | 1322.1 | 1300.2 | 1268.8 | 1242.7 | 1227.9 | 1217.2 | 1214.9 |
| 12.5° | 1257.5 | 1285.9 | 1338.7 | 1338.1 | 1308.5 | 1269.4 | 1232.6 | 1201.2 | 1179.9 | 1167.5 | 1163.3 |
| 15° | 1288.3 | 1324.4 | 1362.4 | 1334.5 | 1287.7 | 1240.3 | 1192.9 | 1150.9 | 1122.5 | 1102.9 | 1099.4 |
| 17.5° | 1326.2 | 1364.7 | 1379.5 | 1323.3 | 1261.7 | 1200.6 | 1137.3 | 1082.2 | 1043.7 | 1020.6 | 1018.8 |
| 20° | 1370.1 | 1404.4 | 1387.8 | 1303.7 | 1227.9 | 1147.9 | 1062.0 | 1000.4 | 959.0 | 936.5 | 938.2 |
| 22.5° | 1421.0 | 1445.9 | 1390.2 | 1277.1 | 1181.1 | 1073.3 | 977.3 | 918.1 | 890.3 | 878.4 | 879.0 |
| 25° | 1475.5 | 1491.5 | 1386.0 | 1240.9 | 1109.4 | 982.1 | 890.3 | 863.0 | 860.7 | 857.7 | 858.9 |
| 27.5° | 1540.1 | 1536.5 | 1373.6 | 1190.0 | 1012.9 | 876.1 | 829.3 | 836.4 | 845.8 | 844.7 | 845.8 |
| 30° | 1626.5 | 1592.8 | 1357.6 | 1119.5 | 898.0 | 787.2 | 793.1 | 813.3 | 825.7 | 826.9 | 830.4 |
| 32.5° | 1725.4 | 1655.0 | 1332.1 | 1023.5 | 788.4 | 737.4 | 759.4 | 783.6 | 798.5 | 801.4 | 806.2 |
| 35° | 1843.3 | 1726.0 | 1287.1 | 903.9 | 709.6 | 707.8 | 728.0 | 744.6 | 760.5 | 761.7 | 761.7 |
| 37.5° | 1979.0 | 1797.1 | 1215.5 | 771.8 | 661.0 | 682.4 | 701.3 | 704.9 | 709.0 | 705.5 | 707.2 |
| 40° | 2103.4 | 1865.8 | 1113.6 | 651.6 | 621.4 | 659.9 | 675.8 | 664.0 | 651.0 | 642.1 | 643.9 |
| 42.5° | 2207.6 | 1912.6 | 978.5 | 567.4 | 581.1 | 639.7 | 652.2 | 627.9 | 602.4 | 585.8 | 588.2 |
| 45° | 2324.9 | 1955.9 | 819.8 | 510.6 | 546.7 | 625.5 | 633.8 | 602.4 | 569.8 | 544.9 | 541.4 |
| 47.5° | 2486.6 | 2044.1 | 678.8 | 470.9 | 522.4 | 617.8 | 631.4 | 588.8 | 546.1 | 508.8 | 504.7 |
| 50° | 2686.2 | 2169.1 | 560.9 | 444.8 | 511.2 | 613.7 | 630.8 | 574.0 | 523.0 | 479.2 | 476.2 |
| 52.5° | 2904.2 | 2291.1 | 473.9 | 424.7 | 499.9 | 601.2 | 627.9 | 557.4 | 498.7 | 451.4 | 447.8 |
| 55° | 3049.3 | 2339.1 | 415.2 | 405.7 | 481.6 | 581.7 | 616.0 | 541.4 | 462.0 | 418.8 | 413.4 |
| 57.5° | 3091.9 | 2277.5 | 374.4 | 388.6 | 457.9 | 554.4 | 593.5 | 507.6 | 439.5 | 405.2 | 401.0 |
| 60° | 3018.5 | 2122.3 | 348.9 | 374.4 | 431.8 | 519.5 | 554.4 | 488.1 | 421.7 | 390.9 | 388.0 |
| 62.5° | 2811.2 | 1883.0 | 329.3 | 359.5 | 405.2 | 482.7 | 529.5 | 464.4 | 402.2 | 377.9 | 373.8 |
| 65° | 2394.2 | 1544.2 | 313.3 | 344.1 | 379.7 | 447.8 | 502.3 | 440.7 | 380.9 | 362.5 | 357.8 |
| 67.5° | 1674.5 | 1084.6 | 296.2 | 325.8 | 354.2 | 414.0 | 473.9 | 418.8 | 359.0 | 345.3 | 340.6 |
| 70° | 818.6 | 575.1 | 275.4 | 304.5 | 327.0 | 379.7 | 445.4 | 392.1 | 329.9 | 322.2 | 315.7 |
| 72.5° | 389.8 | 321.6 | 251.1 | 275.4 | 289.6 | 334.1 | 398.0 | 353.6 | 295.6 | 279.0 | 267.7 |
| 75° | 261.2 | 228.6 | 219.2 | 241.1 | 244.6 | 280.2 | 341.2 | 305.0 | 260.6 | 241.7 | 232.2 |
| 77.5° | 197.8 | 174.7 | 184.2 | 203.8 | 196.7 | 230.4 | 280.8 | 271.9 | 235.2 | 218.0 | 213.2 |
| 80° | 139.2 | 127.4 | 146.3 | 158.2 | 152.8 | 196.1 | 252.9 | 232.8 | 193.7 | 174.7 | 171.2 |
| 82.5° | 87.7 | 85.3 | 107.8 | 109.6 | 111.4 | 155.2 | 207.9 | 183.0 | 150.5 | 123.8 | 114.9 |
| 85° | 43.8 | 48.6 | 64.6 | 64.6 | 64.0 | 80.0 | 118.5 | 103.1 | 81.1 | 64.6 | 62.8 |
| 87.5° | 14.8 | 20.7 | 27.8 | 22.5 | 17.2 | 13.6 | 15.4 | 19.0 | 20.1 | 19.5 | 19.5 |
| 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
 R_f: 81.5
 R_g: 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 |

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CIE 1931 Chromaticity Diagram



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



CCT = 3050K
 CIE x = 0.4383
 CIE y = 0.4131
 Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

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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)