

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: P631061

Luminaire Tested: GWS-SA1E-830-U-SLR-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P631061
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-41)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1E-830-U-SLR-W
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND
SPILL LIGHT ELIMINATOR RIGHT OPTICS
Light Source: (16) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5699.6 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

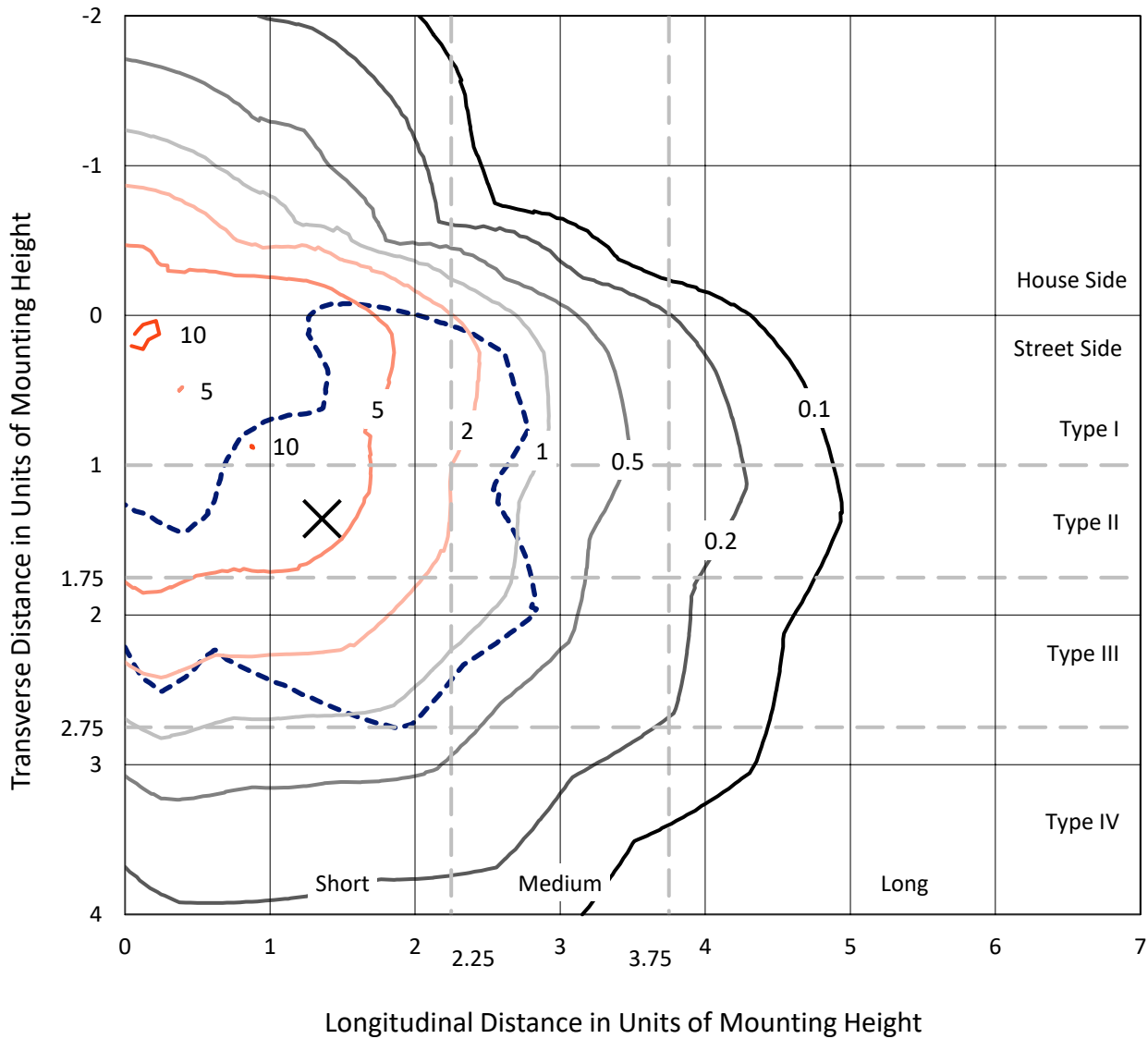
Input Watts (W): 58.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P631061
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Iso-Footcandle Lines of Horizontal Illumination

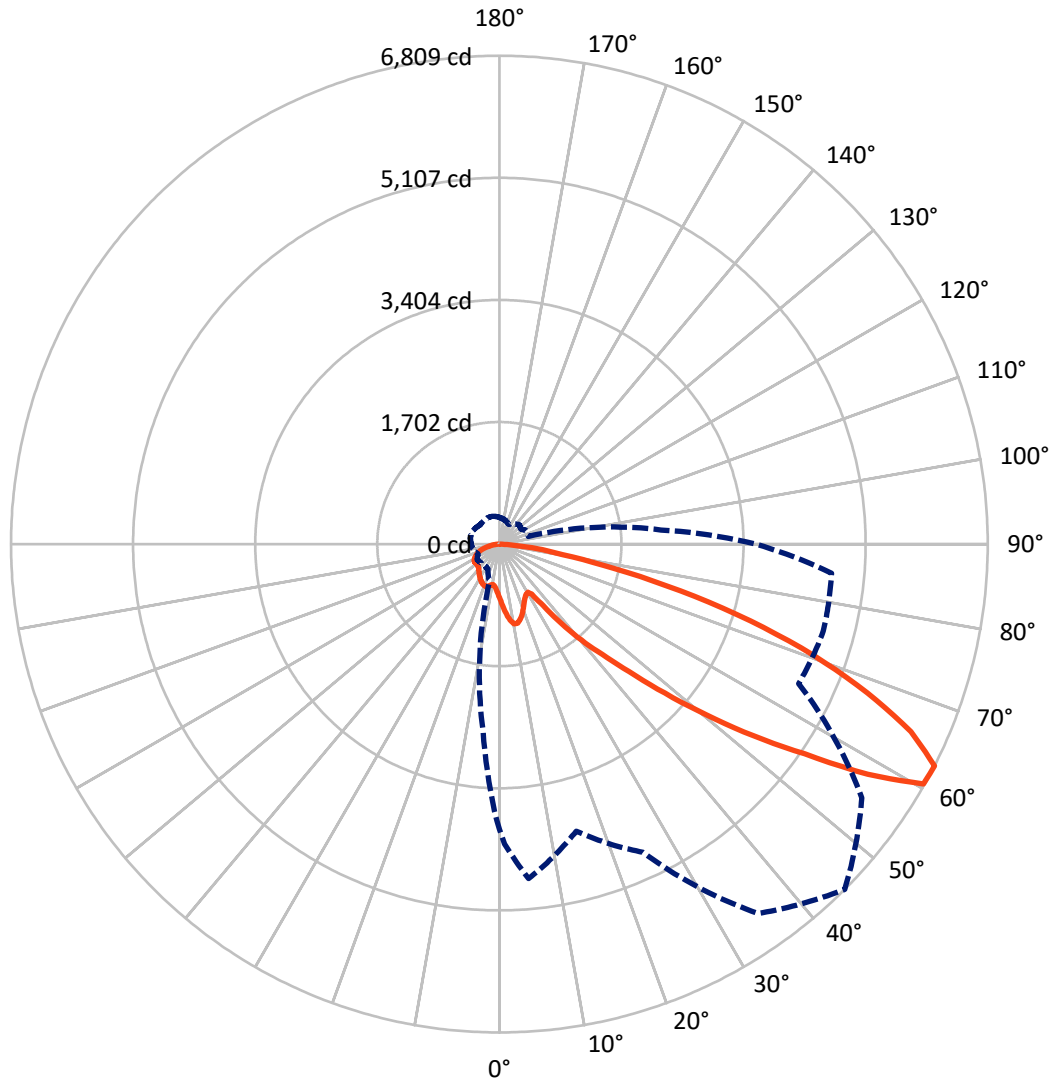
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.8 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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CATALOG NUMBER: GWS-SA1E-830-U-SLR-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1360.0 | 0.0 | 1360.0 |
| | % Fixture | 23.9 | 0.0 | 23.9 |
| Street Side | Lumens | 4339.6 | 0.0 | 4339.6 |
| | % Fixture | 76.1 | 0.0 | 76.1 |
| Total | Lumens | 5699.6 | 0.0 | 5699.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 73.9 | 1.3 |
| 10°-20° | 231.6 | 4.1 |
| 20°-30° | 359.7 | 6.3 |
| 30°-40° | 488.4 | 8.6 |
| 40°-50° | 774.1 | 13.6 |
| 50°-60° | 1365.5 | 24.0 |
| 60°-70° | 1519.3 | 26.7 |
| 70°-80° | 770.5 | 13.5 |
| 80°-90° | 116.7 | 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° | 5699.6 | 100.0 |
| 0°-180° | 5699.6 | 100.0 |

Coefficient of Utilization



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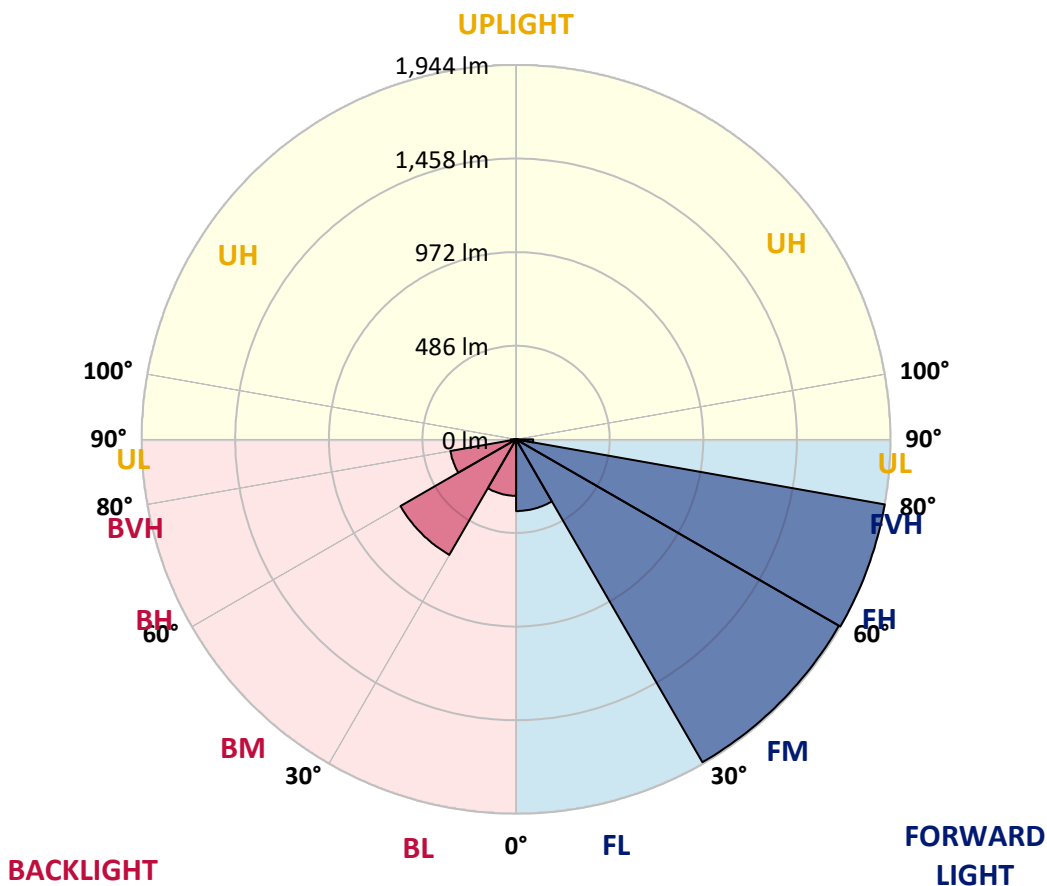
CATALOG NUMBER: GWS-SA1E-830-U-SLR-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 372.1 | 6.5 | | | |
| FM (30°-60°) | 1935.3 | 34.0 | | | |
| FH (60°-80°) | 1943.6 | 34.1 | | | G2/5000 |
| FVH (80°-90°) | 88.6 | 1.6 | | | G1/100 |
| BL (0°-30°) | 293.1 | 5.1 | B1/500 | | |
| BM (30°-60°) | 692.7 | 12.2 | B1/1000 | | |
| BH (60°-80°) | 346.2 | 6.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 28.1 | 0.5 | | | 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 III Short





REPORT NUMBER: P631061
 CATALOG NUMBER: GWS-SA1E-830-U-SLR-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 1° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 |
| 2.5° | 813.0 | 812.6 | 820.7 | 833.3 | 844.9 | 850.1 | 858.7 | 857.9 | 851.0 | 841.9 | 838.9 |
| 5° | 876.8 | 878.6 | 892.8 | 920.4 | 951.1 | 964.0 | 969.6 | 967.5 | 955.0 | 939.0 | 910.9 |
| 7.5° | 934.7 | 937.7 | 959.7 | 1001.1 | 1039.1 | 1056.4 | 1070.2 | 1067.6 | 1049.5 | 1019.7 | 978.3 |
| 10° | 977.0 | 980.4 | 1006.7 | 1055.5 | 1097.8 | 1112.9 | 1130.6 | 1131.4 | 1115.5 | 1075.3 | 1033.1 |
| 12.5° | 1019.2 | 1022.7 | 1047.3 | 1091.7 | 1119.4 | 1119.8 | 1130.1 | 1135.8 | 1136.6 | 1118.1 | 1075.8 |
| 15° | 1063.3 | 1066.3 | 1088.7 | 1113.8 | 1112.5 | 1088.3 | 1088.3 | 1099.1 | 1122.8 | 1136.2 | 1106.8 |
| 17.5° | 1100.8 | 1104.7 | 1122.0 | 1113.8 | 1075.3 | 1031.8 | 1026.6 | 1040.4 | 1081.8 | 1133.2 | 1130.1 |
| 20° | 1131.9 | 1134.9 | 1144.4 | 1090.0 | 1020.1 | 963.2 | 953.2 | 969.2 | 1025.3 | 1114.6 | 1147.8 |
| 22.5° | 1161.6 | 1163.4 | 1158.2 | 1058.9 | 960.6 | 895.4 | 883.3 | 900.1 | 960.6 | 1081.8 | 1162.9 |
| 25° | 1197.0 | 1195.3 | 1170.7 | 1026.6 | 906.2 | 841.9 | 829.4 | 848.4 | 911.4 | 1038.2 | 1179.3 |
| 27.5° | 1238.0 | 1231.6 | 1181.5 | 991.6 | 864.3 | 802.2 | 793.6 | 813.8 | 872.5 | 998.1 | 1192.3 |
| 30° | 1273.0 | 1260.5 | 1183.2 | 960.6 | 842.8 | 785.4 | 780.2 | 799.2 | 853.5 | 970.9 | 1208.7 |
| 32.5° | 1311.8 | 1294.6 | 1193.2 | 952.4 | 854.8 | 825.9 | 832.8 | 834.1 | 858.7 | 963.2 | 1233.3 |
| 35° | 1367.5 | 1345.0 | 1220.3 | 976.1 | 979.1 | 1027.9 | 1052.9 | 1019.2 | 936.8 | 980.4 | 1279.9 |
| 37.5° | 1451.6 | 1423.2 | 1275.6 | 1078.8 | 1235.9 | 1345.0 | 1405.5 | 1328.6 | 1174.2 | 1045.6 | 1350.2 |
| 40° | 1553.9 | 1517.7 | 1346.3 | 1268.7 | 1475.8 | 1650.6 | 1758.0 | 1645.4 | 1418.4 | 1208.3 | 1449.0 |
| 42.5° | 1696.7 | 1658.8 | 1483.6 | 1455.1 | 1698.0 | 1958.2 | 2098.5 | 1930.6 | 1633.7 | 1418.4 | 1607.4 |
| 45° | 1945.7 | 1909.0 | 1735.1 | 1641.9 | 1958.2 | 2337.1 | 2533.9 | 2300.4 | 1852.5 | 1629.4 | 1903.4 |
| 47.5° | 2405.7 | 2362.6 | 2108.8 | 1849.1 | 2255.1 | 2829.0 | 3104.3 | 2764.3 | 2079.9 | 1871.1 | 2400.5 |
| 50° | 2958.1 | 2916.6 | 2577.9 | 2094.2 | 2583.1 | 3355.1 | 3737.8 | 3309.3 | 2341.9 | 2164.9 | 2994.7 |
| 52.5° | 3622.6 | 3614.8 | 3247.2 | 2404.0 | 2924.4 | 3916.0 | 4440.8 | 3913.0 | 2628.8 | 2560.6 | 3667.9 |
| 55° | 4221.6 | 4297.5 | 4097.3 | 2876.5 | 3365.4 | 4620.7 | 5163.6 | 4571.5 | 3018.0 | 3214.8 | 4456.3 |
| 57.5° | 4544.3 | 4748.4 | 5056.1 | 3840.5 | 4006.7 | 5463.0 | 6055.5 | 5375.4 | 3686.9 | 4304.0 | 5187.3 |
| 60° | 4331.2 | 4562.5 | 5120.0 | 4566.3 | 4642.7 | 6137.9 | 6791.7 | 6051.2 | 4343.7 | 5060.0 | 5145.9 |
| 62.5° | 3976.5 | 4184.0 | 4679.8 | 4142.6 | 4741.1 | 6286.4 | 6808.9 | 6169.0 | 4604.7 | 4676.4 | 4648.3 |
| 65° | 3555.7 | 3765.0 | 4290.2 | 3616.1 | 4428.3 | 5933.8 | 6306.7 | 5822.5 | 4135.7 | 4225.0 | 4235.4 |
| 67.5° | 2996.9 | 3190.2 | 3724.9 | 3215.3 | 4036.4 | 5416.4 | 5535.5 | 5328.8 | 3808.6 | 3951.0 | 3802.1 |
| 70° | 2239.2 | 2413.5 | 2885.6 | 2612.8 | 3402.5 | 4742.4 | 4646.2 | 4676.8 | 3441.4 | 3582.9 | 3176.0 |
| 72.5° | 1530.2 | 1661.3 | 2066.1 | 2053.2 | 2605.5 | 3796.5 | 3662.3 | 3952.7 | 2874.3 | 3062.1 | 2421.3 |
| 75° | 1070.2 | 1172.4 | 1493.5 | 1622.1 | 1969.5 | 2813.9 | 2608.1 | 2958.5 | 2244.8 | 2512.7 | 1766.6 |
| 77.5° | 656.8 | 724.5 | 943.3 | 1201.8 | 1266.9 | 1925.9 | 1619.9 | 2226.2 | 1576.3 | 1832.7 | 1178.5 |
| 80° | 328.4 | 361.2 | 458.3 | 755.6 | 840.2 | 1134.9 | 894.5 | 1292.4 | 1066.7 | 1134.9 | 652.0 |
| 82.5° | 99.2 | 109.6 | 134.2 | 287.0 | 435.4 | 653.3 | 528.6 | 750.8 | 582.6 | 532.1 | 256.8 |
| 85° | 26.3 | 29.8 | 37.1 | 85.0 | 152.8 | 234.3 | 178.6 | 363.8 | 279.2 | 196.3 | 96.7 |
| 87.5° | 2.2 | 2.2 | 1.7 | 1.7 | 0.9 | 0.0 | 0.0 | 25.9 | 52.2 | 29.8 | 16.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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 CATALOG NUMBER: GWS-SA1E-830-U-SLR-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 |
| 2.5° | 823.8 | 822.0 | 804.4 | 791.4 | 776.3 | 761.6 | 746.5 | 733.2 | 718.0 | 702.9 | 698.6 |
| 5° | 890.2 | 878.1 | 840.6 | 809.1 | 778.0 | 750.8 | 727.1 | 702.5 | 682.7 | 663.2 | 655.9 |
| 7.5° | 948.9 | 927.8 | 873.4 | 825.5 | 782.3 | 748.7 | 713.7 | 677.9 | 649.9 | 622.3 | 615.3 |
| 10° | 1002.0 | 973.9 | 905.3 | 844.9 | 797.0 | 758.6 | 717.6 | 669.7 | 629.2 | 595.5 | 586.4 |
| 12.5° | 1041.3 | 1010.6 | 932.9 | 863.5 | 809.1 | 765.9 | 725.4 | 683.1 | 640.4 | 596.8 | 586.9 |
| 15° | 1072.3 | 1040.4 | 955.8 | 877.7 | 809.5 | 753.9 | 714.6 | 699.9 | 686.5 | 643.8 | 625.7 |
| 17.5° | 1097.4 | 1063.7 | 975.7 | 886.3 | 797.9 | 717.2 | 683.1 | 704.7 | 738.8 | 712.0 | 677.9 |
| 20° | 1120.2 | 1086.1 | 990.8 | 892.4 | 772.0 | 666.7 | 647.7 | 693.5 | 744.8 | 743.9 | 713.3 |
| 22.5° | 1145.3 | 1112.0 | 1012.8 | 895.8 | 735.7 | 615.3 | 626.6 | 677.1 | 718.9 | 731.4 | 712.4 |
| 25° | 1177.2 | 1147.8 | 1043.4 | 903.6 | 694.7 | 580.0 | 611.0 | 655.9 | 690.9 | 693.9 | 682.7 |
| 27.5° | 1214.3 | 1192.3 | 1089.2 | 921.7 | 655.0 | 561.8 | 592.9 | 626.1 | 658.1 | 659.4 | 646.0 |
| 30° | 1254.9 | 1240.2 | 1131.4 | 936.8 | 625.3 | 556.2 | 569.6 | 596.4 | 616.6 | 620.1 | 608.4 |
| 32.5° | 1306.6 | 1293.7 | 1169.0 | 926.9 | 607.6 | 554.9 | 548.0 | 561.8 | 578.7 | 578.7 | 569.6 |
| 35° | 1377.8 | 1359.7 | 1208.7 | 888.9 | 586.0 | 549.8 | 525.2 | 529.0 | 536.4 | 537.7 | 532.5 |
| 37.5° | 1478.8 | 1449.0 | 1248.8 | 813.8 | 550.6 | 531.2 | 498.8 | 494.1 | 496.7 | 500.1 | 498.8 |
| 40° | 1604.0 | 1555.2 | 1307.5 | 723.7 | 508.3 | 495.4 | 471.7 | 462.6 | 460.4 | 467.3 | 469.9 |
| 42.5° | 1761.5 | 1686.8 | 1370.5 | 639.5 | 469.9 | 454.4 | 439.7 | 432.0 | 428.5 | 440.1 | 447.1 |
| 45° | 2013.0 | 1890.1 | 1430.9 | 556.2 | 448.3 | 419.4 | 409.5 | 403.9 | 405.6 | 419.4 | 428.1 |
| 47.5° | 2447.6 | 2200.3 | 1488.3 | 503.6 | 446.6 | 394.4 | 382.3 | 383.6 | 388.4 | 403.0 | 413.4 |
| 50° | 2997.3 | 2615.9 | 1526.7 | 481.6 | 451.8 | 379.3 | 363.3 | 370.2 | 377.6 | 391.8 | 403.9 |
| 52.5° | 3557.0 | 3002.9 | 1481.0 | 469.5 | 451.4 | 379.7 | 345.6 | 366.4 | 369.8 | 384.1 | 397.0 |
| 55° | 3941.9 | 3046.1 | 1279.5 | 450.9 | 444.5 | 397.0 | 331.8 | 364.6 | 366.8 | 379.7 | 391.4 |
| 57.5° | 4088.6 | 2898.5 | 975.7 | 456.1 | 423.8 | 410.4 | 325.8 | 352.6 | 368.1 | 379.3 | 391.4 |
| 60° | 3911.3 | 2620.2 | 592.9 | 469.5 | 390.5 | 409.5 | 329.7 | 330.5 | 357.3 | 376.3 | 388.4 |
| 62.5° | 3576.9 | 2262.9 | 416.4 | 431.5 | 366.4 | 386.6 | 338.7 | 304.7 | 338.3 | 361.2 | 372.0 |
| 65° | 3193.7 | 1842.6 | 317.6 | 371.5 | 354.7 | 351.3 | 341.8 | 281.8 | 312.4 | 334.9 | 344.4 |
| 67.5° | 2794.5 | 1432.2 | 258.0 | 277.0 | 320.6 | 317.6 | 312.4 | 261.5 | 281.8 | 297.7 | 308.5 |
| 70° | 2291.8 | 1002.0 | 217.9 | 208.0 | 274.9 | 284.8 | 273.2 | 236.0 | 242.5 | 258.9 | 267.5 |
| 72.5° | 1676.5 | 624.4 | 179.1 | 171.7 | 220.9 | 249.0 | 242.9 | 208.0 | 211.0 | 226.5 | 233.5 |
| 75° | 1205.7 | 357.3 | 143.7 | 141.5 | 168.7 | 213.2 | 201.1 | 179.1 | 182.5 | 194.2 | 198.9 |
| 77.5° | 766.4 | 198.9 | 110.9 | 113.9 | 120.8 | 159.2 | 171.7 | 153.2 | 153.2 | 160.1 | 164.0 |
| 80° | 410.4 | 113.9 | 81.1 | 82.4 | 84.6 | 121.7 | 135.5 | 118.7 | 118.7 | 113.9 | 118.7 |
| 82.5° | 167.4 | 65.6 | 55.7 | 51.8 | 56.5 | 83.3 | 94.9 | 75.5 | 79.0 | 71.2 | 72.9 |
| 85° | 55.2 | 32.8 | 27.6 | 27.2 | 26.8 | 36.7 | 45.7 | 37.5 | 44.9 | 28.5 | 29.8 |
| 87.5° | 7.3 | 6.0 | 3.5 | 2.6 | 3.0 | 1.3 | 2.6 | 3.0 | 3.0 | 2.2 | 2.2 |
| 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: P631061
 CATALOG NUMBER: GWS-SA1E-830-U-SLR-W

CANDELA DISTRIBUTION (continued):

| | 185° | 195° | 205° | 215° | 225° | 235° | 245° | 255° | 265° | 270° | 275° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 |
| 2.5° | 695.6 | 692.2 | 679.6 | 682.7 | 680.5 | 677.1 | 680.5 | 674.0 | 679.2 | 680.9 | 691.7 |
| 5° | 650.3 | 642.1 | 630.0 | 624.0 | 622.7 | 619.2 | 619.7 | 616.6 | 617.5 | 624.8 | 636.9 |
| 7.5° | 609.7 | 602.0 | 592.5 | 588.2 | 584.3 | 580.4 | 580.0 | 579.5 | 583.0 | 589.5 | 601.1 |
| 10° | 580.4 | 576.1 | 572.2 | 573.9 | 572.2 | 570.5 | 567.4 | 567.4 | 573.1 | 584.7 | 598.9 |
| 12.5° | 580.4 | 579.5 | 580.4 | 585.6 | 585.1 | 585.6 | 581.7 | 583.8 | 599.4 | 619.2 | 639.5 |
| 15° | 611.5 | 604.6 | 604.6 | 607.1 | 606.3 | 606.3 | 606.3 | 615.3 | 650.7 | 681.4 | 702.9 |
| 17.5° | 649.4 | 629.2 | 620.5 | 619.2 | 618.8 | 618.8 | 620.5 | 639.9 | 695.2 | 727.5 | 740.1 |
| 20° | 675.8 | 637.4 | 623.1 | 617.5 | 617.9 | 618.8 | 624.0 | 650.7 | 711.6 | 728.0 | 725.0 |
| 22.5° | 680.5 | 630.9 | 613.6 | 605.4 | 606.7 | 607.6 | 615.3 | 643.8 | 689.1 | 691.7 | 685.7 |
| 25° | 658.5 | 612.8 | 594.2 | 587.7 | 589.5 | 589.0 | 595.9 | 616.6 | 649.0 | 648.1 | 644.7 |
| 27.5° | 625.7 | 583.8 | 570.0 | 565.7 | 568.7 | 565.3 | 567.4 | 583.4 | 608.4 | 607.6 | 606.3 |
| 30° | 592.0 | 555.8 | 543.3 | 541.1 | 545.0 | 539.8 | 540.3 | 553.6 | 570.9 | 570.0 | 569.6 |
| 32.5° | 558.4 | 527.7 | 516.5 | 516.5 | 520.4 | 514.8 | 515.7 | 527.3 | 539.0 | 535.5 | 535.5 |
| 35° | 526.5 | 504.9 | 495.8 | 494.1 | 497.1 | 493.2 | 495.0 | 505.7 | 510.1 | 505.3 | 502.3 |
| 37.5° | 498.4 | 488.9 | 479.8 | 473.8 | 474.2 | 474.7 | 479.8 | 488.0 | 485.5 | 478.6 | 474.7 |
| 40° | 472.5 | 472.5 | 463.9 | 452.7 | 451.4 | 454.4 | 463.0 | 472.1 | 464.7 | 457.0 | 452.2 |
| 42.5° | 454.0 | 457.8 | 449.6 | 438.4 | 435.8 | 441.0 | 450.5 | 457.0 | 448.3 | 439.7 | 433.2 |
| 45° | 436.7 | 446.2 | 440.6 | 428.1 | 424.6 | 430.7 | 442.7 | 445.3 | 433.7 | 425.5 | 420.7 |
| 47.5° | 424.6 | 437.6 | 433.7 | 421.6 | 416.4 | 425.0 | 437.6 | 437.1 | 422.5 | 413.8 | 409.9 |
| 50° | 416.0 | 432.4 | 432.0 | 421.6 | 416.0 | 426.8 | 438.0 | 432.4 | 416.4 | 407.4 | 403.5 |
| 52.5° | 409.1 | 432.0 | 435.0 | 428.9 | 425.0 | 434.5 | 441.4 | 430.7 | 412.1 | 402.6 | 399.6 |
| 55° | 406.1 | 433.7 | 435.8 | 430.2 | 426.8 | 435.4 | 441.4 | 434.1 | 412.1 | 403.5 | 400.9 |
| 57.5° | 406.9 | 431.5 | 432.0 | 424.2 | 418.1 | 428.9 | 438.4 | 436.3 | 416.8 | 406.9 | 403.9 |
| 60° | 401.7 | 419.9 | 420.7 | 408.6 | 401.7 | 414.7 | 431.5 | 430.2 | 414.7 | 404.3 | 398.7 |
| 62.5° | 384.5 | 400.4 | 400.9 | 389.7 | 379.7 | 398.3 | 416.8 | 416.4 | 402.2 | 391.8 | 385.3 |
| 65° | 355.6 | 372.4 | 376.7 | 365.9 | 358.2 | 378.0 | 397.4 | 396.6 | 382.3 | 372.8 | 366.4 |
| 67.5° | 319.8 | 337.9 | 346.1 | 338.7 | 335.7 | 353.8 | 372.0 | 371.5 | 359.9 | 350.8 | 345.2 |
| 70° | 276.2 | 291.3 | 305.1 | 305.1 | 302.9 | 323.6 | 343.1 | 341.3 | 330.5 | 323.6 | 319.3 |
| 72.5° | 239.9 | 251.6 | 255.9 | 260.2 | 266.7 | 288.3 | 304.7 | 305.9 | 298.2 | 294.7 | 298.2 |
| 75° | 204.1 | 211.4 | 215.3 | 211.9 | 223.1 | 245.5 | 267.1 | 269.3 | 261.1 | 255.5 | 256.8 |
| 77.5° | 167.9 | 176.1 | 179.9 | 172.2 | 171.3 | 199.8 | 226.1 | 230.9 | 224.0 | 215.3 | 217.9 |
| 80° | 121.3 | 132.0 | 138.5 | 133.3 | 131.6 | 144.1 | 180.4 | 185.6 | 179.1 | 172.2 | 176.1 |
| 82.5° | 74.2 | 80.3 | 82.0 | 87.2 | 98.0 | 103.1 | 116.1 | 133.3 | 128.6 | 122.6 | 133.3 |
| 85° | 29.3 | 35.0 | 38.8 | 44.0 | 51.4 | 60.8 | 71.6 | 85.4 | 77.7 | 75.1 | 88.5 |
| 87.5° | 1.7 | 0.4 | 0.0 | 0.9 | 7.3 | 14.2 | 30.6 | 42.3 | 35.4 | 38.0 | 45.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P631061
 CATALOG NUMBER: GWS-SA1E-830-U-SLR-W

CANDELA DISTRIBUTION (continued):

| | 285° | 295° | 305° | 315° | 325° | 335° | 345° | 355° | 359° | 360° |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0° | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 | 756.5 |
| 2.5° | 700.4 | 711.6 | 726.7 | 739.2 | 755.2 | 770.3 | 785.8 | 801.3 | 809.5 | 813.0 |
| 5° | 650.7 | 671.4 | 695.6 | 722.4 | 753.4 | 786.2 | 819.5 | 853.5 | 875.1 | 876.8 |
| 7.5° | 621.0 | 650.7 | 684.0 | 717.6 | 756.0 | 801.3 | 854.0 | 906.6 | 928.6 | 934.7 |
| 10° | 630.4 | 663.7 | 690.0 | 721.5 | 763.8 | 820.3 | 882.5 | 944.2 | 969.6 | 977.0 |
| 12.5° | 668.4 | 674.9 | 683.1 | 712.0 | 763.8 | 836.7 | 911.8 | 985.2 | 1012.3 | 1019.2 |
| 15° | 699.9 | 668.9 | 654.2 | 684.8 | 753.4 | 851.0 | 942.9 | 1024.0 | 1056.8 | 1063.3 |
| 17.5° | 702.5 | 649.0 | 617.1 | 644.7 | 735.3 | 860.9 | 972.6 | 1067.1 | 1094.8 | 1100.8 |
| 20° | 676.2 | 627.9 | 586.4 | 603.3 | 710.7 | 865.2 | 994.2 | 1098.6 | 1125.8 | 1131.9 |
| 22.5° | 646.4 | 610.6 | 565.7 | 564.9 | 680.9 | 869.9 | 1020.1 | 1128.4 | 1157.8 | 1161.6 |
| 25° | 618.4 | 586.9 | 548.9 | 536.8 | 646.4 | 879.0 | 1055.1 | 1173.3 | 1195.7 | 1197.0 |
| 27.5° | 585.6 | 561.4 | 535.5 | 523.9 | 616.2 | 896.3 | 1106.8 | 1226.8 | 1240.2 | 1238.0 |
| 30° | 555.8 | 537.7 | 526.0 | 522.6 | 597.2 | 909.2 | 1156.0 | 1279.5 | 1280.3 | 1273.0 |
| 32.5° | 524.3 | 517.4 | 517.4 | 528.6 | 581.7 | 906.2 | 1196.2 | 1330.8 | 1322.6 | 1311.8 |
| 35° | 496.2 | 497.5 | 506.6 | 532.9 | 555.8 | 876.0 | 1234.6 | 1395.1 | 1383.0 | 1367.5 |
| 37.5° | 469.5 | 479.4 | 492.4 | 517.8 | 521.7 | 831.1 | 1279.5 | 1486.2 | 1471.0 | 1451.6 |
| 40° | 446.6 | 461.7 | 476.8 | 489.3 | 485.5 | 767.2 | 1342.0 | 1593.2 | 1576.3 | 1553.9 |
| 42.5° | 428.5 | 443.2 | 460.0 | 461.3 | 462.6 | 700.8 | 1408.5 | 1724.4 | 1721.3 | 1696.7 |
| 45° | 416.8 | 426.3 | 442.3 | 440.1 | 461.3 | 627.4 | 1469.8 | 1924.6 | 1964.3 | 1945.7 |
| 47.5° | 409.1 | 416.4 | 418.1 | 427.2 | 472.5 | 561.8 | 1548.7 | 2316.4 | 2426.9 | 2405.7 |
| 50° | 404.8 | 412.1 | 392.7 | 428.1 | 474.2 | 519.5 | 1657.9 | 2808.3 | 2986.1 | 2958.1 |
| 52.5° | 404.3 | 402.6 | 373.3 | 437.1 | 464.7 | 493.7 | 1714.9 | 3167.4 | 3561.8 | 3622.6 |
| 55° | 405.2 | 383.6 | 363.3 | 439.7 | 445.8 | 484.2 | 1524.1 | 3340.0 | 4093.0 | 4221.6 |
| 57.5° | 397.4 | 362.9 | 368.9 | 429.4 | 409.9 | 509.6 | 1126.7 | 3278.3 | 4305.3 | 4544.3 |
| 60° | 382.8 | 343.1 | 379.3 | 401.3 | 373.3 | 466.0 | 775.9 | 3002.9 | 4085.2 | 4331.2 |
| 62.5° | 361.6 | 329.2 | 378.0 | 365.1 | 359.9 | 381.5 | 533.4 | 2617.6 | 3736.1 | 3976.5 |
| 65° | 337.9 | 318.0 | 357.7 | 330.1 | 333.1 | 293.4 | 377.1 | 2182.6 | 3319.2 | 3555.7 |
| 67.5° | 312.4 | 311.1 | 328.0 | 293.9 | 281.4 | 232.6 | 274.9 | 1749.4 | 2783.7 | 2996.9 |
| 70° | 283.5 | 293.0 | 298.2 | 261.1 | 228.3 | 182.5 | 204.1 | 1223.4 | 2053.6 | 2239.2 |
| 72.5° | 254.6 | 255.5 | 262.8 | 227.0 | 170.9 | 146.3 | 153.2 | 740.9 | 1395.1 | 1530.2 |
| 75° | 225.3 | 217.1 | 224.0 | 184.7 | 127.3 | 120.0 | 118.2 | 457.8 | 963.6 | 1070.2 |
| 77.5° | 193.8 | 184.7 | 175.6 | 138.9 | 102.3 | 92.8 | 90.6 | 256.8 | 591.2 | 656.8 |
| 80° | 157.5 | 145.4 | 131.2 | 101.8 | 74.7 | 66.5 | 66.0 | 125.1 | 294.7 | 328.4 |
| 82.5° | 122.6 | 99.7 | 95.8 | 63.4 | 46.2 | 40.6 | 43.2 | 47.9 | 88.9 | 99.2 |
| 85° | 85.9 | 72.5 | 50.9 | 25.5 | 20.7 | 16.8 | 16.4 | 14.2 | 23.7 | 26.3 |
| 87.5° | 47.9 | 31.5 | 16.4 | 3.0 | 3.5 | 3.9 | 3.0 | 2.2 | 2.2 | 2.2 |
| 90° | 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

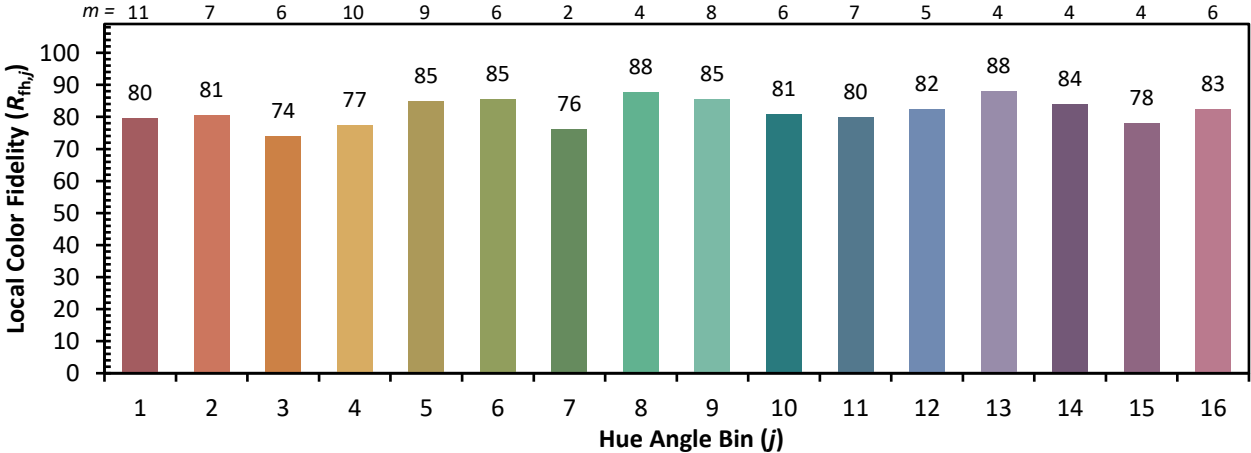


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| 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)