

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: P631245

Luminaire Tested: GWS-SA1F-730-U-T4FT-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P631245
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-SA1F-730-U-T4FT-W
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: (16) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7410.3 lumens
Efficiency: N/A
Efficacy: 110.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

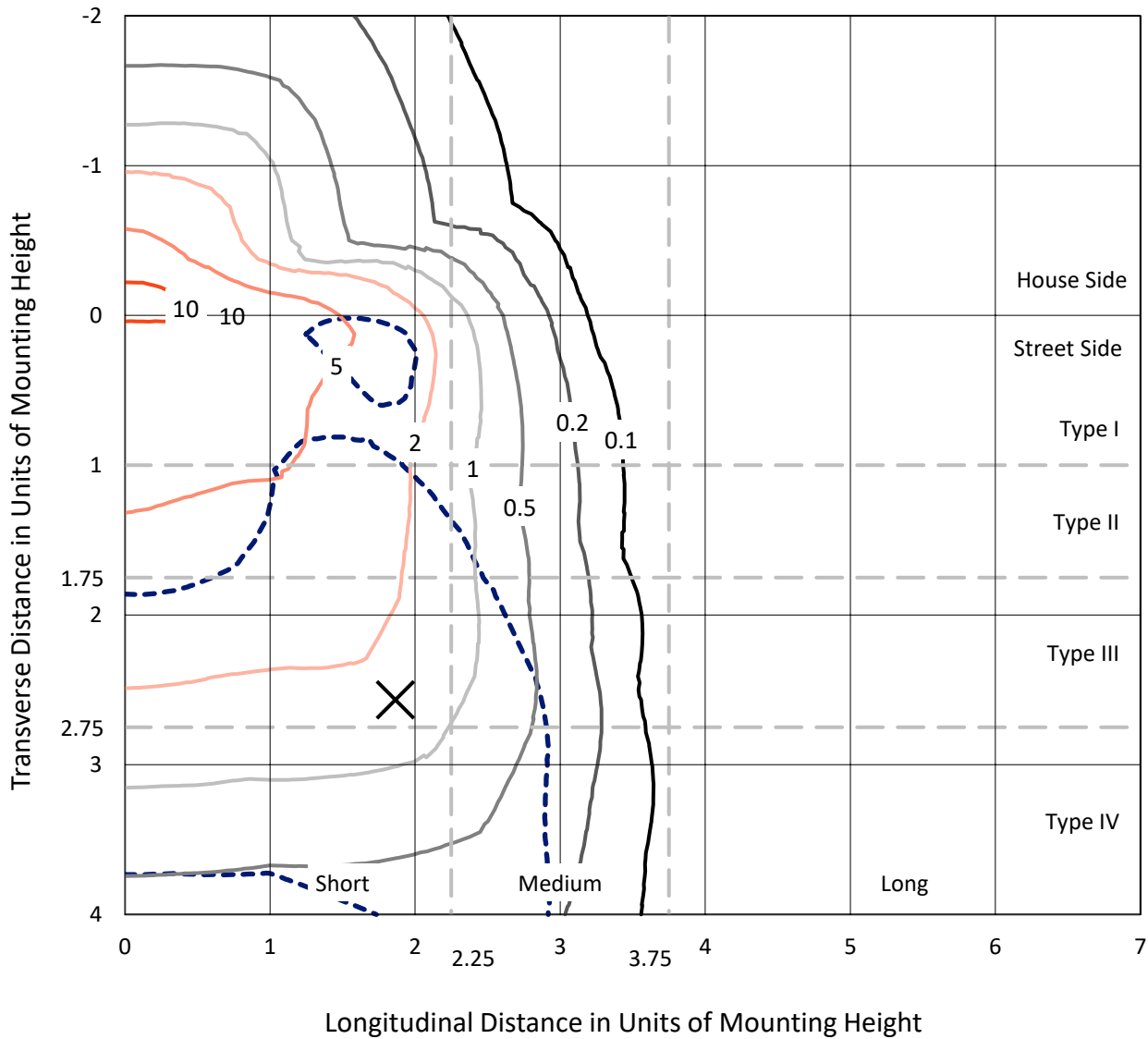
Input Watts (W): 67.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

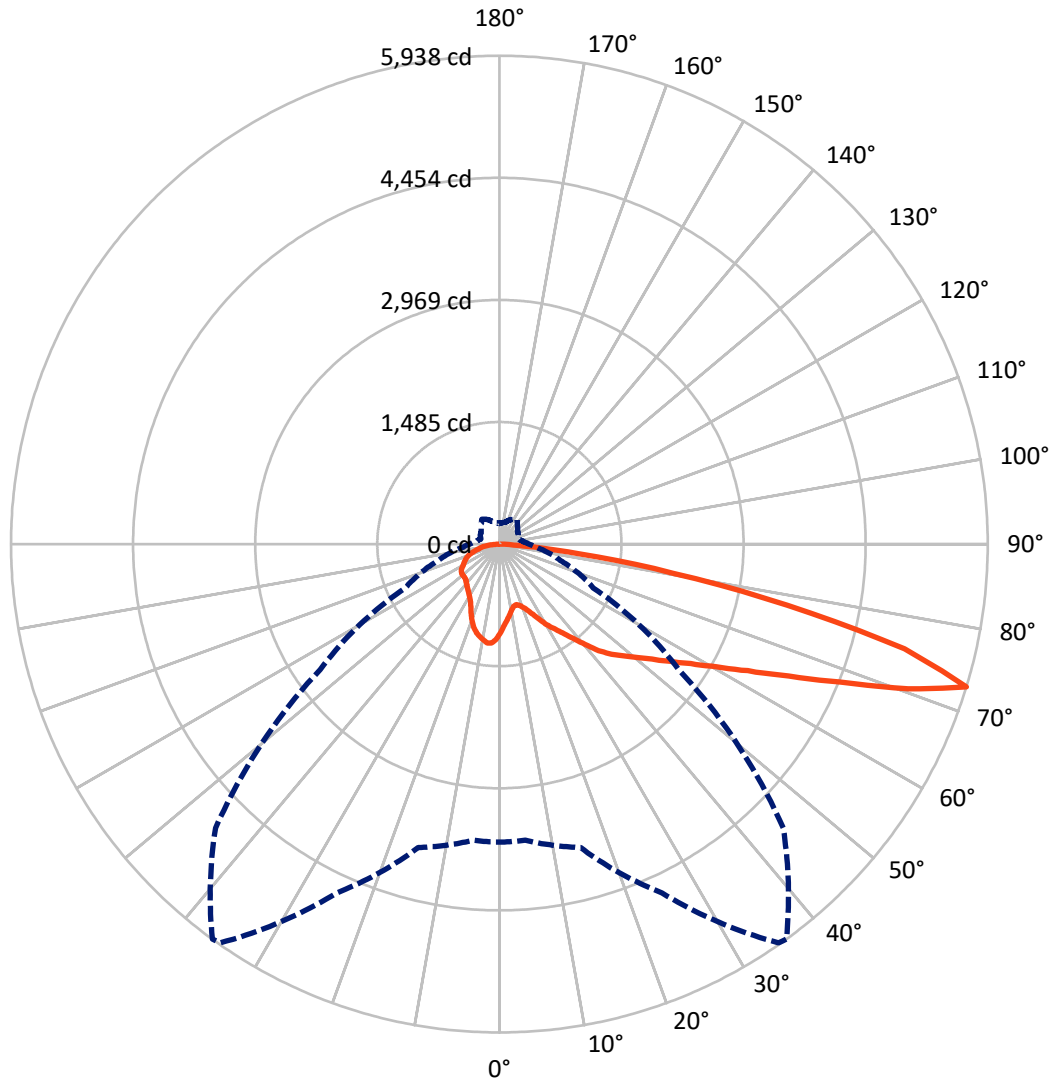
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.5 fc
 Type IV - Short - N/A

REPORT NUMBER: P631245
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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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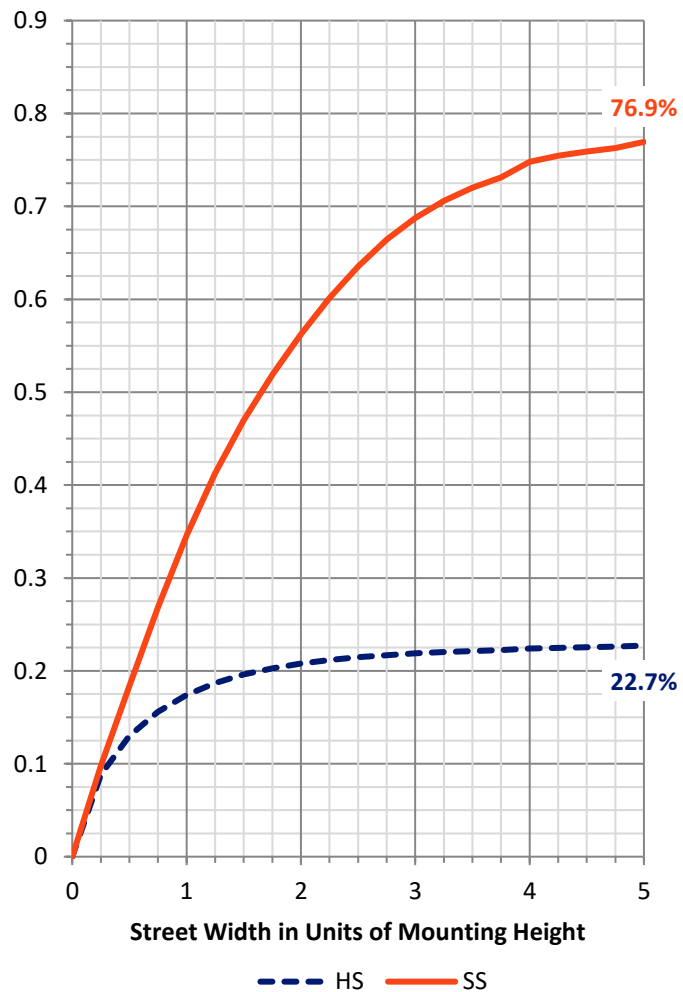
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1708.4 | 0.0 | 1708.4 |
| | % Fixture | 23.1 | 0.0 | 23.1 |
| Street Side | Lumens | 5701.9 | 0.0 | 5701.9 |
| | % Fixture | 76.9 | 0.0 | 76.9 |
| Total | Lumens | 7410.3 | 0.0 | 7410.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 101.4 | 1.4 |
| 10°-20° | 286.0 | 3.9 |
| 20°-30° | 473.7 | 6.4 |
| 30°-40° | 709.4 | 9.6 |
| 40°-50° | 1034.9 | 14.0 |
| 50°-60° | 1473.0 | 19.9 |
| 60°-70° | 1861.0 | 25.1 |
| 70°-80° | 1326.1 | 17.9 |
| 80°-90° | 144.7 | 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° | 7410.3 | 100.0 |
| 0°-180° | 7410.3 | 100.0 |

Coefficient of Utilization



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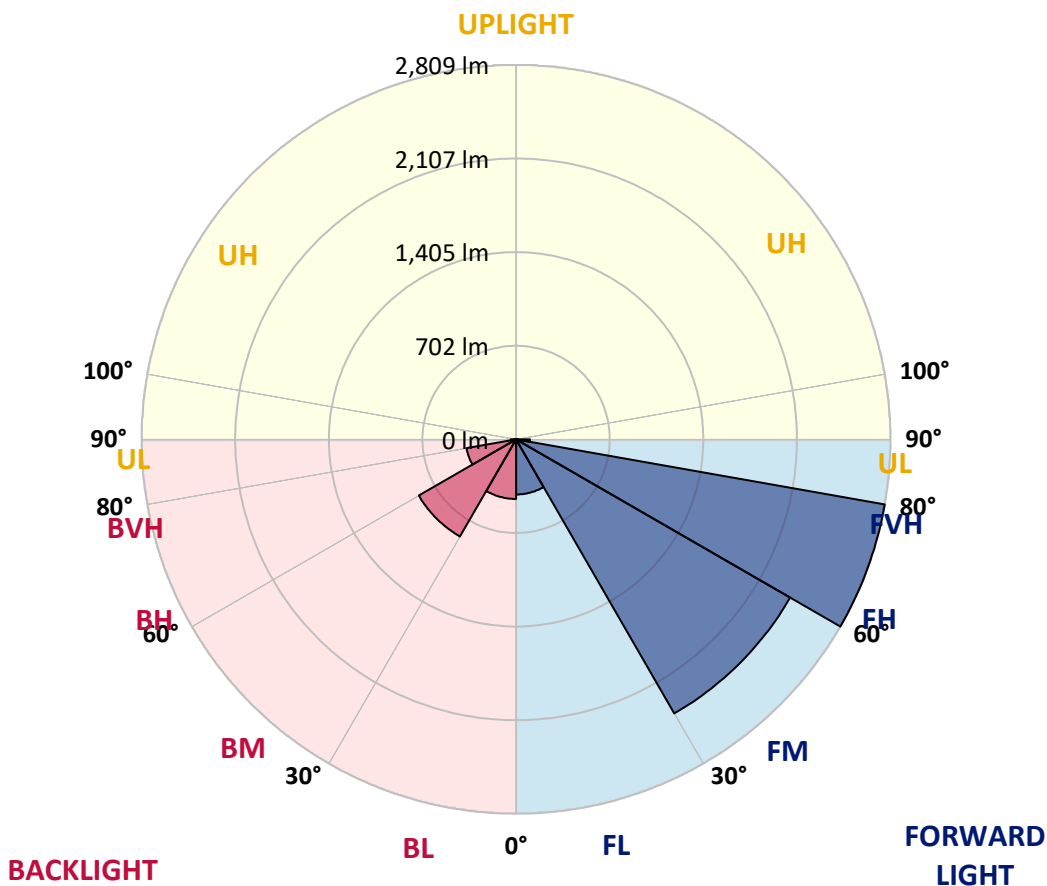
CATALOG NUMBER: GWS-SA1F-730-U-T4FT-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 413.7 | 5.6 | | | |
| FM (30°-60°) | 2374.8 | 32.0 | | | |
| FH (60°-80°) | 2809.5 | 37.9 | | | G2/5000 |
| FVH (80°-90°) | 103.9 | 1.4 | | | G2/225 |
| BL (0°-30°) | 447.4 | 6.0 | B1/500 | | |
| BM (30°-60°) | 842.5 | 11.4 | B1/1000 | | |
| BH (60°-80°) | 377.7 | 5.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 40.8 | 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





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 |
| 2.5° | 989.4 | 987.7 | 984.4 | 994.3 | 1004.2 | 1003.1 | 1016.9 | 1030.1 | 1044.4 | 1059.2 | 1079.0 |
| 5° | 910.2 | 909.1 | 906.3 | 921.2 | 936.0 | 935.5 | 958.0 | 979.5 | 1008.6 | 1040.5 | 1080.1 |
| 7.5° | 831.0 | 828.2 | 832.1 | 850.8 | 871.7 | 873.9 | 904.7 | 939.9 | 982.2 | 1030.1 | 1086.2 |
| 10° | 761.2 | 760.6 | 762.3 | 783.1 | 814.5 | 816.7 | 856.3 | 905.2 | 961.3 | 1025.1 | 1099.9 |
| 12.5° | 743.0 | 741.9 | 737.5 | 748.0 | 771.6 | 774.9 | 818.3 | 878.3 | 947.0 | 1027.9 | 1118.6 |
| 15° | 772.7 | 770.0 | 754.6 | 749.6 | 761.2 | 763.9 | 800.7 | 862.3 | 938.8 | 1032.8 | 1142.3 |
| 17.5° | 823.8 | 822.2 | 793.0 | 772.7 | 780.4 | 782.6 | 810.1 | 859.6 | 936.6 | 1042.7 | 1171.4 |
| 20° | 898.6 | 891.5 | 845.8 | 815.0 | 815.0 | 818.3 | 834.8 | 871.7 | 939.3 | 1054.8 | 1204.4 |
| 22.5° | 997.6 | 983.3 | 919.0 | 877.2 | 866.2 | 870.6 | 877.7 | 901.9 | 950.9 | 1075.2 | 1245.7 |
| 25° | 1108.7 | 1095.5 | 1019.1 | 960.2 | 944.8 | 946.5 | 940.4 | 944.8 | 976.2 | 1103.2 | 1296.8 |
| 27.5° | 1227.0 | 1218.2 | 1136.8 | 1062.0 | 1037.8 | 1037.8 | 1016.3 | 1005.9 | 1011.4 | 1135.1 | 1354.0 |
| 30° | 1332.6 | 1320.5 | 1251.7 | 1169.8 | 1137.9 | 1137.9 | 1097.2 | 1074.6 | 1061.4 | 1174.2 | 1430.5 |
| 32.5° | 1388.1 | 1381.0 | 1335.3 | 1272.6 | 1233.6 | 1227.5 | 1192.3 | 1165.9 | 1135.1 | 1231.9 | 1533.9 |
| 35° | 1460.7 | 1459.1 | 1431.6 | 1382.6 | 1333.1 | 1324.3 | 1300.1 | 1279.2 | 1225.9 | 1304.0 | 1671.3 |
| 37.5° | 1552.0 | 1549.3 | 1544.9 | 1515.7 | 1456.3 | 1454.7 | 1433.2 | 1407.9 | 1338.6 | 1407.9 | 1838.0 |
| 40° | 1654.3 | 1649.3 | 1643.8 | 1643.3 | 1607.5 | 1601.5 | 1599.8 | 1571.2 | 1474.5 | 1533.3 | 2011.8 |
| 42.5° | 1795.1 | 1778.0 | 1726.3 | 1749.4 | 1775.8 | 1770.3 | 1791.2 | 1748.3 | 1643.8 | 1682.3 | 2176.2 |
| 45° | 1968.3 | 1926.5 | 1824.2 | 1830.8 | 1897.4 | 1908.4 | 1981.0 | 1970.5 | 1830.3 | 1854.5 | 2349.4 |
| 47.5° | 2072.3 | 2036.0 | 1940.8 | 1935.3 | 2018.4 | 2032.1 | 2190.0 | 2209.8 | 2031.0 | 2061.8 | 2563.4 |
| 50° | 2157.5 | 2132.2 | 2054.1 | 2061.8 | 2149.8 | 2163.6 | 2397.3 | 2439.6 | 2220.2 | 2274.1 | 2812.0 |
| 52.5° | 2260.4 | 2224.1 | 2163.6 | 2199.9 | 2307.7 | 2324.2 | 2627.7 | 2673.4 | 2390.7 | 2507.3 | 3069.4 |
| 55° | 2318.1 | 2303.3 | 2304.4 | 2359.9 | 2495.2 | 2517.7 | 2869.2 | 2861.5 | 2546.9 | 2706.9 | 3262.9 |
| 57.5° | 2451.2 | 2445.7 | 2496.3 | 2517.2 | 2714.1 | 2743.2 | 3110.6 | 3044.6 | 2688.8 | 2861.5 | 3355.9 |
| 60° | 2686.0 | 2672.3 | 2716.3 | 2748.2 | 2984.7 | 3025.9 | 3380.1 | 3223.9 | 2785.0 | 2976.4 | 3324.5 |
| 62.5° | 3016.0 | 2999.0 | 3000.6 | 3051.2 | 3347.1 | 3390.5 | 3679.8 | 3373.5 | 2814.7 | 2994.0 | 3126.0 |
| 65° | 3426.3 | 3401.5 | 3373.5 | 3442.2 | 3828.3 | 3864.6 | 4005.9 | 3482.4 | 2743.8 | 2824.6 | 2711.3 |
| 67.5° | 3859.1 | 3838.8 | 3805.8 | 3949.8 | 4451.4 | 4473.4 | 4371.7 | 3473.0 | 2518.8 | 2371.4 | 1901.8 |
| 70° | 3884.4 | 3889.4 | 4045.5 | 4566.9 | 5264.8 | 5270.3 | 4717.6 | 3284.9 | 2039.8 | 1537.2 | 947.6 |
| 72.5° | 3623.7 | 3615.5 | 3819.0 | 4679.7 | 5919.3 | 5938.0 | 4880.9 | 2661.3 | 1260.5 | 766.7 | 444.4 |
| 75° | 2943.4 | 2957.7 | 3171.6 | 4094.5 | 5073.4 | 5089.9 | 3979.0 | 1569.0 | 598.9 | 375.1 | 284.3 |
| 77.5° | 1267.1 | 1346.9 | 1768.7 | 2884.6 | 3633.6 | 3582.5 | 2050.8 | 635.8 | 319.5 | 267.3 | 217.8 |
| 80° | 365.7 | 397.1 | 630.3 | 1371.6 | 2177.3 | 2138.8 | 811.7 | 238.1 | 222.7 | 200.7 | 156.2 |
| 82.5° | 118.2 | 130.9 | 231.0 | 546.1 | 975.6 | 974.5 | 308.0 | 140.8 | 145.7 | 136.4 | 100.6 |
| 85° | 33.0 | 37.9 | 70.9 | 165.5 | 301.9 | 295.9 | 89.1 | 66.5 | 77.5 | 78.6 | 50.0 |
| 87.5° | 0.0 | 0.0 | 0.5 | 1.1 | 1.1 | 1.1 | 2.2 | 9.9 | 22.5 | 28.6 | 20.3 |
| 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: P631245
 CATALOG NUMBER: GWS-SA1F-730-U-T4FT-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 | 1084.5 |
| 2.5° | 1091.1 | 1089.5 | 1112.0 | 1129.6 | 1146.1 | 1157.1 | 1160.4 | 1162.6 | 1167.0 | 1169.2 | 1167.0 |
| 5° | 1098.8 | 1107.1 | 1144.5 | 1172.0 | 1194.0 | 1207.2 | 1207.7 | 1206.6 | 1209.9 | 1207.2 | 1205.5 |
| 7.5° | 1115.3 | 1131.3 | 1178.6 | 1207.7 | 1222.0 | 1222.6 | 1209.4 | 1194.0 | 1186.3 | 1179.7 | 1177.5 |
| 10° | 1137.3 | 1161.0 | 1212.7 | 1231.9 | 1227.5 | 1207.2 | 1178.0 | 1153.8 | 1140.1 | 1130.2 | 1128.0 |
| 12.5° | 1167.6 | 1194.0 | 1242.9 | 1242.4 | 1214.9 | 1178.6 | 1144.5 | 1115.3 | 1095.5 | 1084.0 | 1080.1 |
| 15° | 1196.2 | 1229.7 | 1264.9 | 1239.1 | 1195.6 | 1151.6 | 1107.6 | 1068.6 | 1042.2 | 1024.0 | 1020.7 |
| 17.5° | 1231.4 | 1267.1 | 1280.9 | 1228.6 | 1171.4 | 1114.8 | 1055.9 | 1004.8 | 969.0 | 947.6 | 945.9 |
| 20° | 1272.1 | 1304.0 | 1288.6 | 1210.5 | 1140.1 | 1065.8 | 986.1 | 928.9 | 890.4 | 869.5 | 871.1 |
| 22.5° | 1319.4 | 1342.5 | 1290.8 | 1185.7 | 1096.6 | 996.5 | 907.4 | 852.4 | 826.6 | 815.6 | 816.1 |
| 25° | 1370.0 | 1384.8 | 1286.9 | 1152.2 | 1030.1 | 911.8 | 826.6 | 801.3 | 799.1 | 796.3 | 797.4 |
| 27.5° | 1429.9 | 1426.6 | 1275.4 | 1104.9 | 940.4 | 813.4 | 770.0 | 776.6 | 785.3 | 784.2 | 785.3 |
| 30° | 1510.2 | 1478.9 | 1260.5 | 1039.4 | 833.7 | 730.9 | 736.4 | 755.1 | 766.7 | 767.8 | 771.1 |
| 32.5° | 1602.0 | 1536.6 | 1236.9 | 950.3 | 732.0 | 684.7 | 705.1 | 727.6 | 741.4 | 744.1 | 748.5 |
| 35° | 1711.5 | 1602.6 | 1195.1 | 839.2 | 658.9 | 657.2 | 675.9 | 691.3 | 706.2 | 707.3 | 707.3 |
| 37.5° | 1837.4 | 1668.6 | 1128.5 | 716.6 | 613.8 | 633.6 | 651.2 | 654.5 | 658.3 | 655.0 | 656.7 |
| 40° | 1952.9 | 1732.4 | 1033.9 | 605.0 | 576.9 | 612.7 | 627.5 | 616.5 | 604.4 | 596.2 | 597.8 |
| 42.5° | 2049.7 | 1775.8 | 908.5 | 526.9 | 539.5 | 594.0 | 605.5 | 583.0 | 559.3 | 543.9 | 546.1 |
| 45° | 2158.6 | 1816.0 | 761.2 | 474.1 | 507.6 | 580.8 | 588.5 | 559.3 | 529.1 | 506.0 | 502.7 |
| 47.5° | 2308.8 | 1897.9 | 630.3 | 437.2 | 485.1 | 573.6 | 586.3 | 546.7 | 507.1 | 472.4 | 468.6 |
| 50° | 2494.1 | 2014.0 | 520.8 | 413.0 | 474.6 | 569.8 | 585.7 | 532.9 | 485.6 | 444.9 | 442.2 |
| 52.5° | 2696.5 | 2127.3 | 440.0 | 394.3 | 464.2 | 558.2 | 583.0 | 517.5 | 463.1 | 419.1 | 415.8 |
| 55° | 2831.2 | 2171.8 | 385.5 | 376.7 | 447.1 | 540.1 | 572.0 | 502.7 | 429.0 | 388.8 | 383.9 |
| 57.5° | 2870.8 | 2114.6 | 347.6 | 360.8 | 425.1 | 514.8 | 551.1 | 471.3 | 408.1 | 376.2 | 372.3 |
| 60° | 2802.6 | 1970.5 | 323.9 | 347.6 | 400.9 | 482.3 | 514.8 | 453.2 | 391.6 | 363.0 | 360.2 |
| 62.5° | 2610.1 | 1748.3 | 305.8 | 333.8 | 376.2 | 448.2 | 491.7 | 431.2 | 373.4 | 350.9 | 347.0 |
| 65° | 2223.0 | 1433.8 | 290.9 | 319.5 | 352.5 | 415.8 | 466.4 | 409.2 | 353.6 | 336.6 | 332.2 |
| 67.5° | 1554.8 | 1007.0 | 275.0 | 302.5 | 328.9 | 384.4 | 440.0 | 388.8 | 333.3 | 320.6 | 316.2 |
| 70° | 760.1 | 534.0 | 255.7 | 282.7 | 303.6 | 352.5 | 413.6 | 364.1 | 306.3 | 299.2 | 293.1 |
| 72.5° | 361.9 | 298.6 | 233.2 | 255.7 | 268.9 | 310.2 | 369.6 | 328.3 | 274.4 | 259.0 | 248.6 |
| 75° | 242.5 | 212.3 | 203.5 | 223.8 | 227.1 | 260.1 | 316.8 | 283.2 | 242.0 | 224.4 | 215.6 |
| 77.5° | 183.7 | 162.2 | 171.0 | 189.2 | 182.6 | 213.9 | 260.7 | 252.4 | 218.3 | 202.4 | 198.0 |
| 80° | 129.2 | 118.2 | 135.8 | 146.8 | 141.9 | 182.0 | 234.8 | 216.1 | 179.8 | 162.2 | 158.9 |
| 82.5° | 81.4 | 79.2 | 100.1 | 101.7 | 103.4 | 144.1 | 193.0 | 169.9 | 139.7 | 114.9 | 106.7 |
| 85° | 40.7 | 45.1 | 59.9 | 59.9 | 59.4 | 74.2 | 110.0 | 95.7 | 75.3 | 59.9 | 58.3 |
| 87.5° | 13.7 | 19.2 | 25.8 | 20.9 | 15.9 | 12.6 | 14.3 | 17.6 | 18.7 | 18.1 | 18.1 |
| 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
 CIE u': 0.2508
 CIE v': 0.5215
 Duv: 0.0000
 CIE x: 0.4374
 CIE y: 0.4043
 CIE z: 0.1583
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 53

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.8 | | |
| R1: | 67.5 | R9: | -38.3 |
| R2: | 82.9 | R10: | 62.5 |
| R3: | 94.7 | R11: | 63.7 |
| R4: | 67.7 | R12: | 57.8 |
| R5: | 67.9 | R13: | 70.4 |
| R6: | 77.6 | R14: | 97.3 |
| R7: | 76.0 | | |
| R8: | 40.5 | | |

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



#####

| 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

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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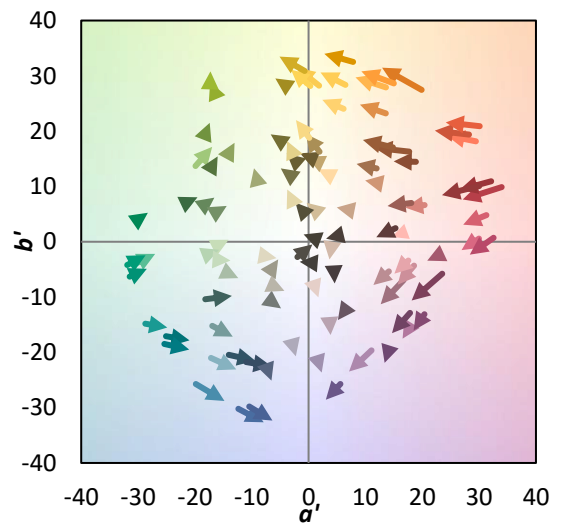
TM-30-18

Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



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

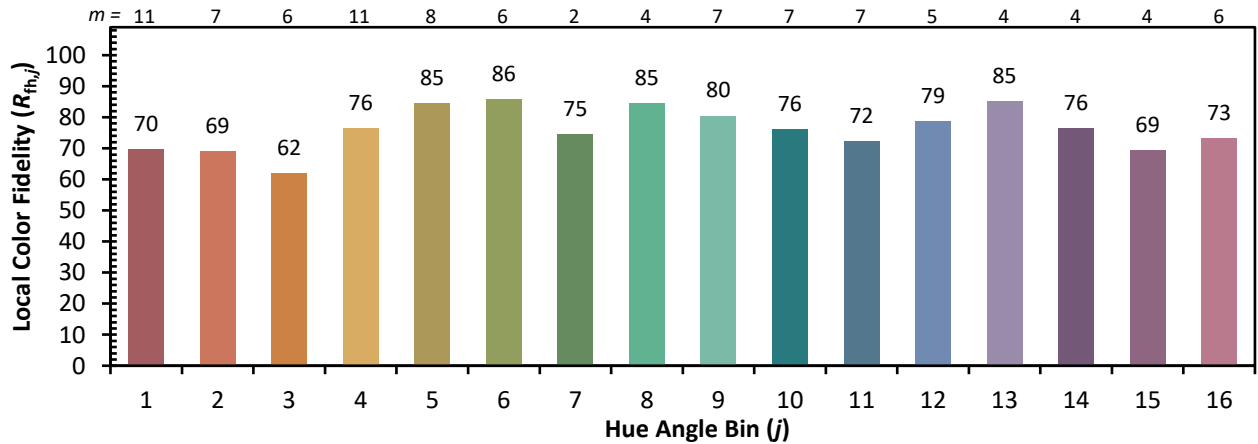
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 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)