

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



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P438688

Luminaire Tested: **ISW-SA1E-730-U-T4FT**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438688
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-10)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISW-SA1E-730-U-T4FT
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 70 CRI, 3000K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV FORWARD
THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6511 lumens
Efficiency: N/A
Efficacy: 111.9 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

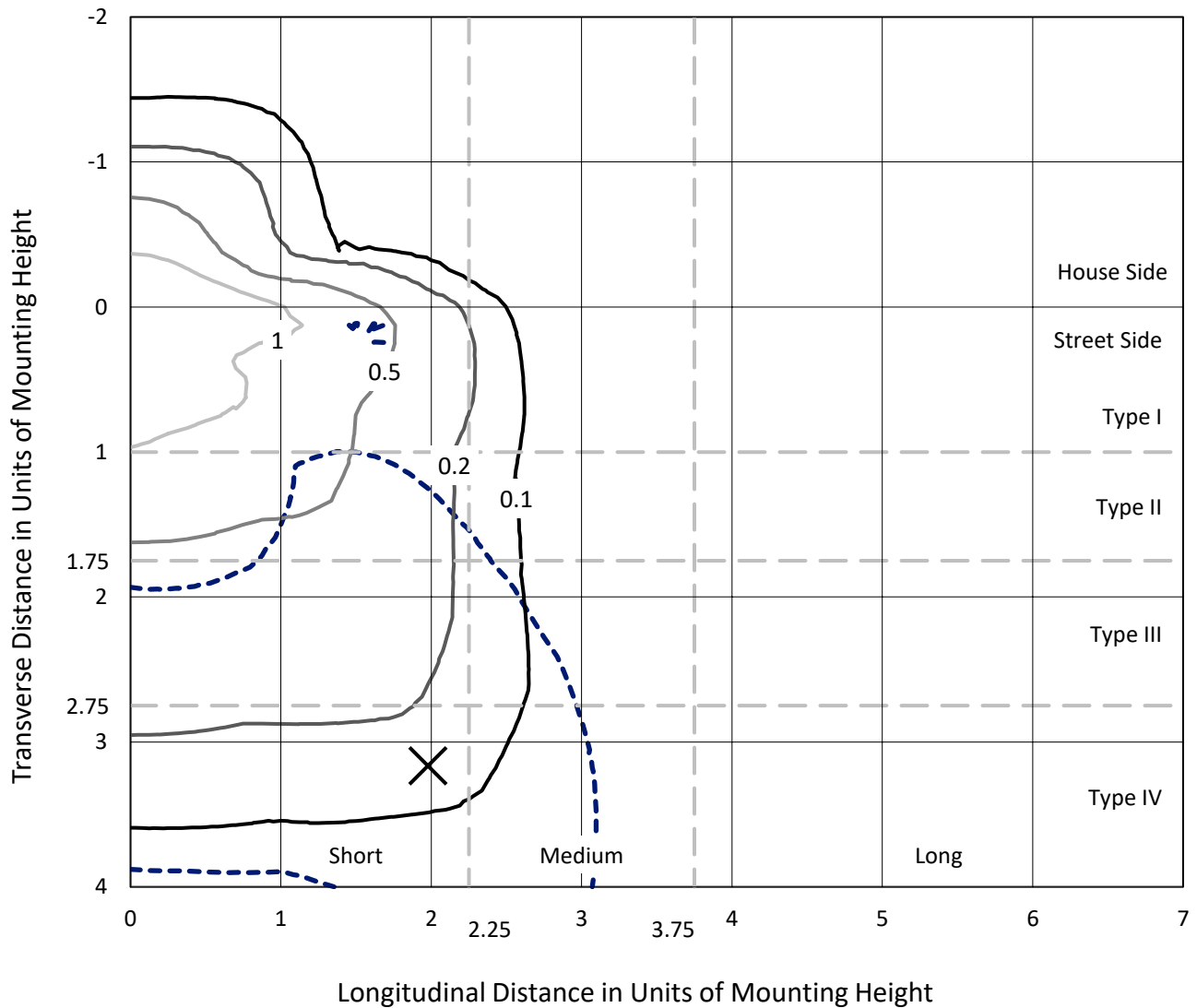
Input Watts (W): 58.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P438688
 CATALOG NUMBER: ISW-SA1E-730-U-T4FT

Iso-Footcandle Lines of Horizontal Illumination

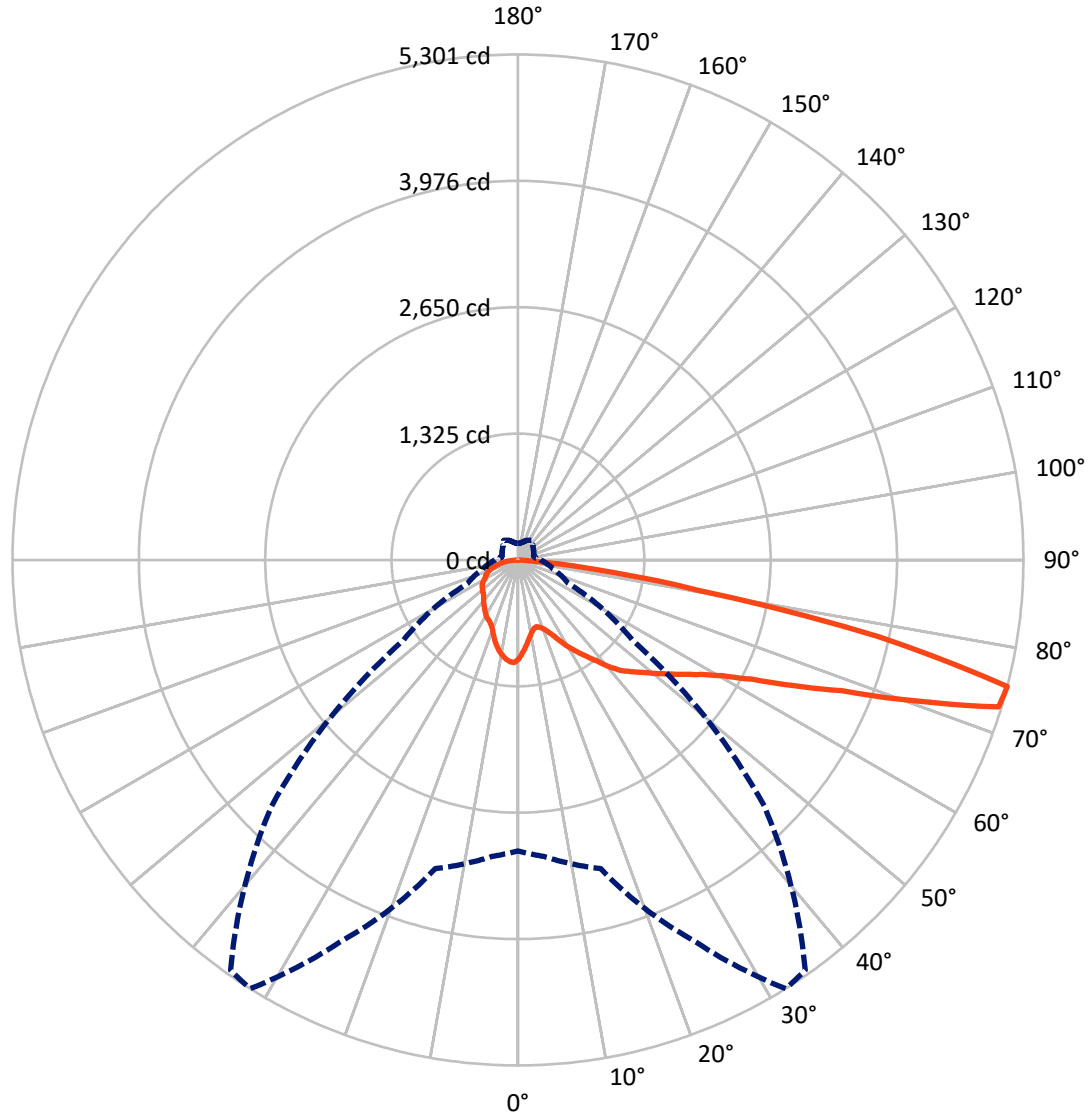
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.7 fc
 Type IV - Short - N/A

REPORT NUMBER: P438688
CATALOG NUMBER: ISW-SA1E-730-U-T4FT

Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral - - - Horizontal Cone Through 75-Deg Vertical

REPORT NUMBER: P438688
 CATALOG NUMBER: ISW-SA1E-730-U-T4FT

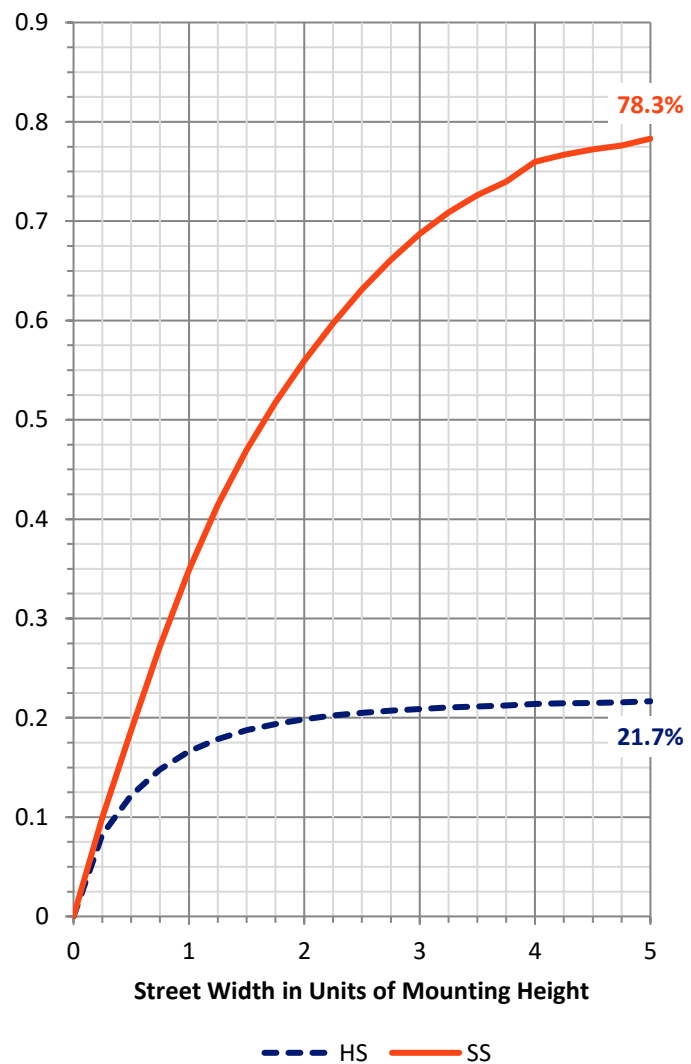
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1426.6 | 0.0 | 1426.6 |
| | % Fixture | 21.9 | 0.0 | 21.9 |
| Street Side | Lumens | 5084.4 | 0.0 | 5084.4 |
| | % Fixture | 78.1 | 0.0 | 78.1 |
| Total | Lumens | 6511.0 | 0.0 | 6511.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 94.1 | 1.4 |
| 10°-20° | 257.3 | 4.0 |
| 20°-30° | 425.8 | 6.5 |
| 30°-40° | 634.6 | 9.7 |
| 40°-50° | 903.5 | 13.9 |
| 50°-60° | 1243.1 | 19.1 |
| 60°-70° | 1566.6 | 24.1 |
| 70°-80° | 1266.4 | 19.5 |
| 80°-90° | 119.7 | 1.8 |
| 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° | 6511.0 | 100.0 |
| 0°-180° | 6511.0 | 100.0 |



REPORT NUMBER: P438688

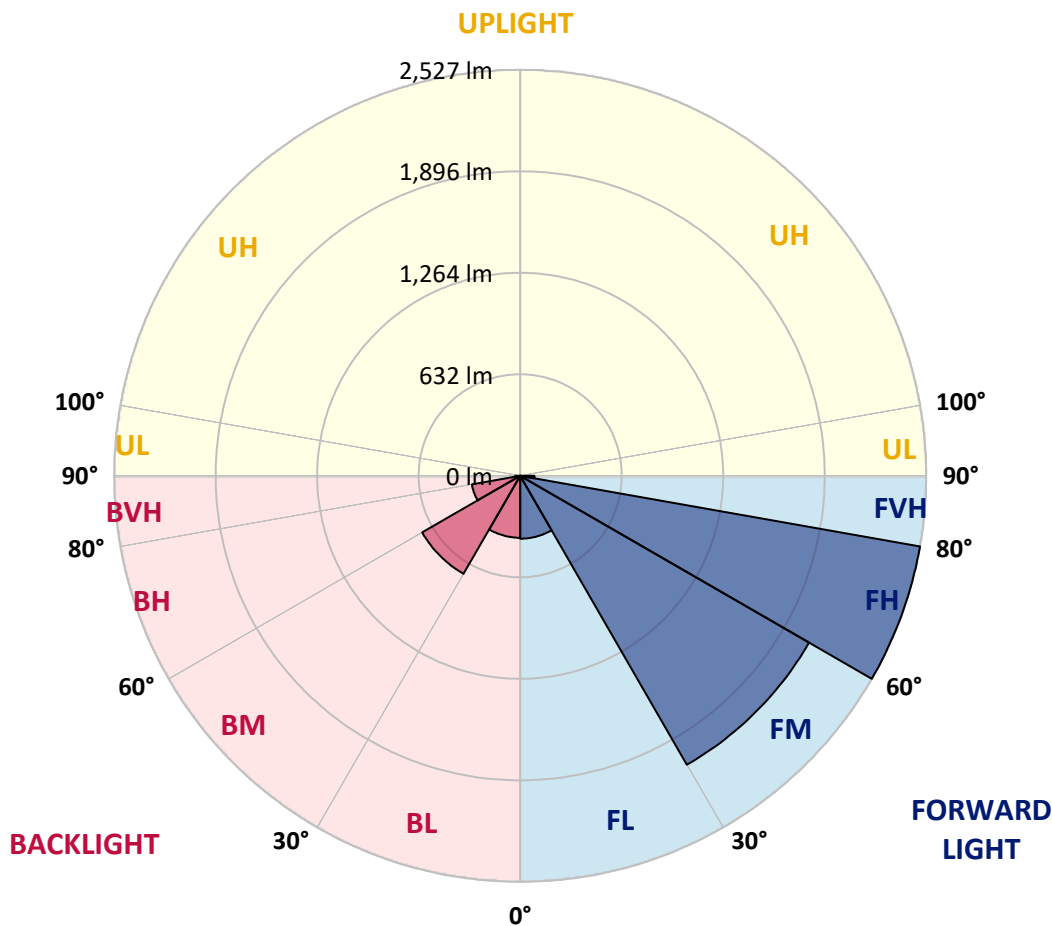
CATALOG NUMBER: ISW-SA1E-730-U-T4FT

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 391.4 | 6.0 | | | |
| FM (30°-60°) | 2076.6 | 31.9 | | | |
| FH (60°-80°) | 2527.4 | 38.8 | | | G2/5000 |
| FVH (80°-90°) | 88.9 | 1.4 | | | G1/100 |
| BL (0°-30°) | 385.6 | 5.9 | B1/500 | | |
| BM (30°-60°) | 704.7 | 10.8 | B1/1000 | | |
| BH (60°-80°) | 305.5 | 4.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 30.8 | 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 IV Short





REPORT NUMBER: P438688
 CATALOG NUMBER: ISW-SA1E-730-U-T4FT

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 |
| 2.5° | 946.6 | 953.7 | 956.0 | 960.8 | 970.2 | 965.5 | 977.3 | 991.5 | 1010.5 | 1019.9 | 1038.9 |
| 5° | 866.1 | 866.1 | 873.2 | 885.0 | 901.6 | 901.6 | 922.9 | 948.9 | 982.1 | 1008.1 | 1041.2 |
| 7.5° | 795.1 | 795.1 | 802.2 | 816.4 | 833.0 | 844.8 | 870.8 | 911.1 | 956.0 | 1005.7 | 1048.3 |
| 10° | 736.0 | 738.3 | 743.1 | 757.2 | 778.5 | 790.4 | 828.2 | 873.2 | 932.4 | 996.3 | 1055.4 |
| 12.5° | 714.7 | 712.3 | 709.9 | 721.8 | 738.3 | 747.8 | 790.4 | 847.2 | 915.8 | 993.9 | 1069.6 |
| 15° | 731.2 | 726.5 | 719.4 | 719.4 | 726.5 | 731.2 | 766.7 | 825.9 | 901.6 | 991.5 | 1086.2 |
| 17.5° | 773.8 | 769.1 | 752.5 | 736.0 | 740.7 | 743.1 | 766.7 | 814.0 | 894.5 | 1001.0 | 1109.8 |
| 20° | 833.0 | 825.9 | 797.5 | 776.2 | 771.4 | 771.4 | 785.6 | 821.1 | 899.2 | 1019.9 | 1140.6 |
| 22.5° | 904.0 | 896.9 | 863.7 | 825.9 | 821.1 | 818.8 | 825.9 | 849.5 | 913.4 | 1041.2 | 1187.9 |
| 25° | 998.6 | 991.5 | 951.3 | 904.0 | 887.4 | 885.0 | 877.9 | 892.1 | 937.1 | 1069.6 | 1221.1 |
| 27.5° | 1100.4 | 1102.7 | 1055.4 | 991.5 | 975.0 | 967.9 | 948.9 | 946.6 | 965.5 | 1093.3 | 1277.9 |
| 30° | 1195.0 | 1190.3 | 1140.6 | 1088.5 | 1064.9 | 1055.4 | 1024.7 | 1010.5 | 998.6 | 1128.8 | 1344.1 |
| 32.5° | 1240.0 | 1247.1 | 1223.4 | 1173.7 | 1154.8 | 1138.2 | 1102.7 | 1079.1 | 1062.5 | 1183.2 | 1424.6 |
| 35° | 1315.7 | 1318.1 | 1308.6 | 1277.9 | 1240.0 | 1228.2 | 1195.0 | 1178.5 | 1143.0 | 1249.5 | 1521.6 |
| 37.5° | 1391.4 | 1398.5 | 1396.2 | 1377.2 | 1344.1 | 1332.3 | 1303.9 | 1296.8 | 1225.8 | 1332.3 | 1642.3 |
| 40° | 1505.0 | 1493.2 | 1476.6 | 1483.7 | 1471.9 | 1464.8 | 1453.0 | 1429.3 | 1341.8 | 1422.2 | 1760.6 |
| 42.5° | 1628.1 | 1606.8 | 1547.6 | 1566.6 | 1583.1 | 1590.2 | 1606.8 | 1580.8 | 1462.4 | 1557.1 | 1857.6 |
| 45° | 1727.5 | 1710.9 | 1632.8 | 1637.6 | 1670.7 | 1694.3 | 1772.4 | 1758.2 | 1618.6 | 1703.8 | 1987.8 |
| 47.5° | 1784.3 | 1770.1 | 1715.6 | 1739.3 | 1760.6 | 1793.7 | 1945.2 | 1933.4 | 1765.3 | 1862.4 | 2144.0 |
| 50° | 1864.7 | 1841.1 | 1789.0 | 1831.6 | 1869.5 | 1895.5 | 2113.2 | 2108.5 | 1890.8 | 2025.6 | 2321.4 |
| 52.5° | 1909.7 | 1886.0 | 1881.3 | 1940.5 | 1985.4 | 2020.9 | 2293.0 | 2278.8 | 2013.8 | 2188.9 | 2489.5 |
| 55° | 1971.2 | 1975.9 | 2006.7 | 2051.7 | 2115.6 | 2174.7 | 2468.2 | 2397.2 | 2127.4 | 2349.8 | 2655.1 |
| 57.5° | 2106.1 | 2101.4 | 2160.5 | 2181.8 | 2264.6 | 2340.4 | 2676.4 | 2522.6 | 2222.1 | 2465.8 | 2733.2 |
| 60° | 2285.9 | 2295.4 | 2316.7 | 2371.1 | 2461.1 | 2577.0 | 2877.5 | 2652.7 | 2283.6 | 2548.6 | 2719.0 |
| 62.5° | 2626.7 | 2572.3 | 2562.8 | 2577.0 | 2754.5 | 2889.4 | 3074.0 | 2768.7 | 2309.6 | 2551.0 | 2569.9 |
| 65° | 2972.2 | 2950.9 | 2877.5 | 2913.0 | 3171.0 | 3294.0 | 3327.2 | 2844.4 | 2257.5 | 2404.3 | 2238.6 |
| 67.5° | 3329.5 | 3327.2 | 3249.1 | 3350.8 | 3660.8 | 3805.2 | 3608.8 | 2830.2 | 2087.2 | 2061.1 | 1720.4 |
| 70° | 3696.3 | 3712.9 | 3712.9 | 4001.6 | 4425.2 | 4463.0 | 3923.5 | 2695.3 | 1748.8 | 1460.1 | 1005.7 |
| 72.5° | 3857.2 | 3866.7 | 3951.9 | 4593.2 | 5270.0 | 5281.8 | 4103.3 | 2288.3 | 1192.7 | 778.5 | 506.4 |
| 75° | 3050.3 | 3121.3 | 3350.8 | 4422.8 | 5300.7 | 5253.4 | 3656.1 | 1464.8 | 582.1 | 388.1 | 281.6 |
| 77.5° | 1197.4 | 1223.4 | 1689.6 | 2816.0 | 3862.0 | 3909.3 | 2366.4 | 584.5 | 295.8 | 246.1 | 203.5 |
| 80° | 338.4 | 355.0 | 598.7 | 1119.3 | 1907.3 | 2108.5 | 941.8 | 253.2 | 198.8 | 179.8 | 146.7 |
| 82.5° | 120.7 | 137.3 | 222.4 | 428.3 | 814.0 | 859.0 | 255.6 | 125.4 | 127.8 | 116.0 | 89.9 |
| 85° | 16.6 | 14.2 | 30.8 | 78.1 | 179.8 | 151.4 | 42.6 | 33.1 | 52.1 | 54.4 | 37.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.4 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 | 2.4 | 2.4 |
| 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: P438688
 CATALOG NUMBER: ISW-SA1E-730-U-T4FT

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 | 1036.5 |
| 2.5° | 1043.6 | 1048.3 | 1057.8 | 1062.5 | 1067.2 | 1076.7 | 1074.3 | 1079.1 | 1079.1 | 1076.7 | 1081.4 |
| 5° | 1053.0 | 1064.9 | 1076.7 | 1081.4 | 1083.8 | 1083.8 | 1072.0 | 1064.9 | 1062.5 | 1060.1 | 1062.5 |
| 7.5° | 1062.5 | 1079.1 | 1090.9 | 1088.5 | 1079.1 | 1062.5 | 1048.3 | 1036.5 | 1024.7 | 1019.9 | 1024.7 |
| 10° | 1079.1 | 1095.6 | 1102.7 | 1086.2 | 1060.1 | 1034.1 | 1012.8 | 996.3 | 977.3 | 975.0 | 977.3 |
| 12.5° | 1093.3 | 1114.6 | 1114.6 | 1076.7 | 1041.2 | 1005.7 | 972.6 | 946.6 | 922.9 | 915.8 | 915.8 |
| 15° | 1116.9 | 1133.5 | 1116.9 | 1064.9 | 1015.2 | 970.2 | 922.9 | 889.8 | 861.4 | 849.5 | 851.9 |
| 17.5° | 1143.0 | 1154.8 | 1112.2 | 1046.0 | 986.8 | 927.6 | 866.1 | 821.1 | 799.8 | 788.0 | 790.4 |
| 20° | 1173.7 | 1176.1 | 1112.2 | 1022.3 | 944.2 | 866.1 | 799.8 | 766.7 | 752.5 | 745.4 | 747.8 |
| 22.5° | 1214.0 | 1204.5 | 1105.1 | 991.5 | 889.8 | 804.6 | 743.1 | 733.6 | 733.6 | 733.6 | 740.7 |
| 25° | 1256.6 | 1230.5 | 1093.3 | 951.3 | 818.8 | 731.2 | 707.6 | 719.4 | 728.9 | 728.9 | 733.6 |
| 27.5° | 1299.2 | 1256.6 | 1069.6 | 892.1 | 736.0 | 679.2 | 688.6 | 707.6 | 717.0 | 717.0 | 721.8 |
| 30° | 1351.2 | 1287.3 | 1041.2 | 811.7 | 657.9 | 643.7 | 667.3 | 691.0 | 705.2 | 705.2 | 709.9 |
| 32.5° | 1417.5 | 1313.4 | 998.6 | 728.9 | 605.8 | 612.9 | 638.9 | 665.0 | 681.5 | 686.3 | 688.6 |
| 35° | 1490.8 | 1348.9 | 939.5 | 636.6 | 570.3 | 589.2 | 610.5 | 634.2 | 648.4 | 653.1 | 653.1 |
| 37.5° | 1566.6 | 1384.3 | 861.4 | 558.5 | 539.5 | 565.6 | 586.9 | 598.7 | 608.2 | 608.2 | 608.2 |
| 40° | 1642.3 | 1403.3 | 759.6 | 496.9 | 508.8 | 546.6 | 565.6 | 560.8 | 558.5 | 551.4 | 553.7 |
| 42.5° | 1720.4 | 1417.5 | 650.8 | 452.0 | 478.0 | 525.3 | 539.5 | 527.7 | 508.8 | 496.9 | 499.3 |
| 45° | 1805.6 | 1438.8 | 560.8 | 418.9 | 447.3 | 506.4 | 520.6 | 496.9 | 473.3 | 454.3 | 449.6 |
| 47.5° | 1902.6 | 1474.3 | 480.4 | 388.1 | 428.3 | 494.6 | 508.8 | 475.6 | 444.9 | 418.9 | 414.1 |
| 50° | 2035.1 | 1528.7 | 418.9 | 366.8 | 416.5 | 487.5 | 499.3 | 456.7 | 421.2 | 388.1 | 385.7 |
| 52.5° | 2170.0 | 1568.9 | 376.3 | 347.9 | 402.3 | 473.3 | 487.5 | 442.5 | 399.9 | 364.4 | 359.7 |
| 55° | 2269.4 | 1564.2 | 338.4 | 328.9 | 383.4 | 454.3 | 475.6 | 426.0 | 371.5 | 338.4 | 333.7 |
| 57.5° | 2312.0 | 1467.2 | 307.6 | 312.4 | 362.1 | 430.7 | 456.7 | 399.9 | 350.2 | 321.8 | 319.5 |
| 60° | 2238.6 | 1311.0 | 286.3 | 293.4 | 338.4 | 399.9 | 421.2 | 381.0 | 336.0 | 310.0 | 307.6 |
| 62.5° | 2110.8 | 1135.9 | 269.8 | 279.2 | 314.7 | 371.5 | 399.9 | 357.3 | 317.1 | 298.2 | 295.8 |
| 65° | 1807.9 | 944.2 | 253.2 | 262.7 | 293.4 | 343.1 | 381.0 | 343.1 | 302.9 | 284.0 | 281.6 |
| 67.5° | 1365.4 | 679.2 | 236.6 | 246.1 | 274.5 | 321.8 | 364.4 | 324.2 | 281.6 | 267.4 | 267.4 |
| 70° | 814.0 | 416.5 | 215.3 | 229.5 | 250.8 | 295.8 | 338.4 | 298.2 | 255.6 | 250.8 | 246.1 |
| 72.5° | 397.6 | 265.0 | 196.4 | 208.2 | 224.8 | 262.7 | 300.5 | 265.0 | 222.4 | 210.6 | 208.2 |
| 75° | 239.0 | 191.7 | 170.4 | 184.6 | 196.4 | 220.1 | 253.2 | 227.2 | 194.0 | 175.1 | 172.7 |
| 77.5° | 172.7 | 144.4 | 144.4 | 158.5 | 158.5 | 182.2 | 217.7 | 194.0 | 163.3 | 151.4 | 149.1 |
| 80° | 123.1 | 108.9 | 118.3 | 127.8 | 123.1 | 153.8 | 184.6 | 163.3 | 132.5 | 123.1 | 120.7 |
| 82.5° | 80.5 | 75.7 | 89.9 | 87.6 | 87.6 | 118.3 | 151.4 | 123.1 | 97.0 | 80.5 | 75.7 |
| 85° | 33.1 | 37.9 | 52.1 | 49.7 | 49.7 | 66.3 | 78.1 | 63.9 | 45.0 | 35.5 | 35.5 |
| 87.5° | 0.0 | 2.4 | 7.1 | 4.7 | 4.7 | 7.1 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 |
| 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



Test Information

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

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

Spectral Parameters

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



Test Conditions

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

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

| 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 |

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

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: SP1-1908-441-2-R4

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 | | | |

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

TM-30-18

Summary

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



Color Vector Graphics

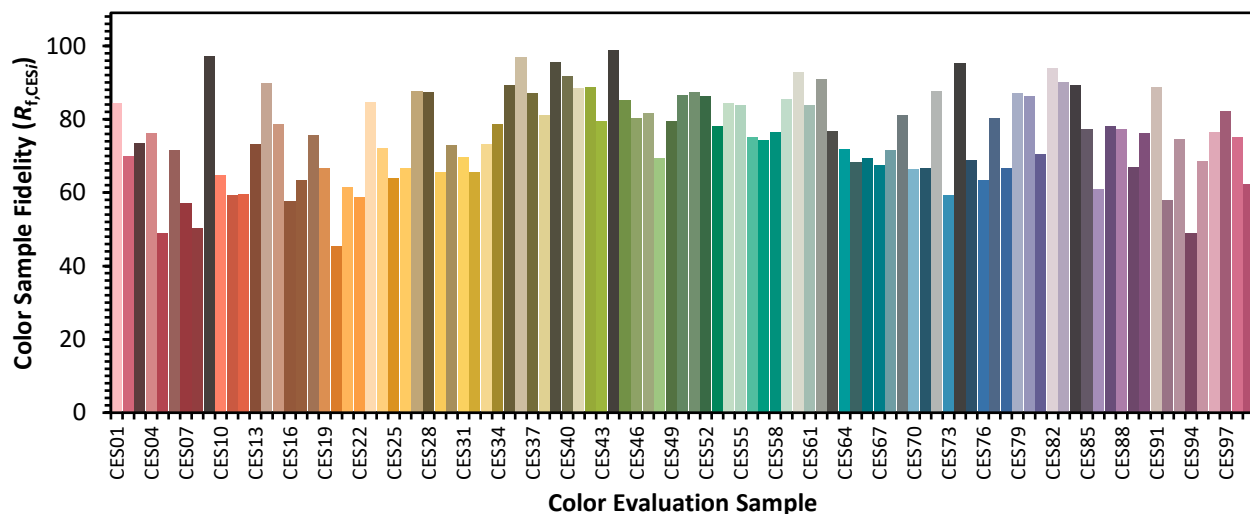


REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

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 | |



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

TM-30-18

Color Rendition by Hue-Angle Bin



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

TM-30-18

Measure Comparisons



(END OF REPORT)