

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: P386338

Luminaire Tested: **GPC-SA2A-727-U-T2-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P386338
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-13)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GPC-SA2A-727-U-T2-HSS
Description: GALLEON PEDESTRIAN LUMINAIRE
(2) 70 CRI, 2700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5784 lumens
Efficiency: N/A
Efficacy: 87.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B1 - U0 - G2

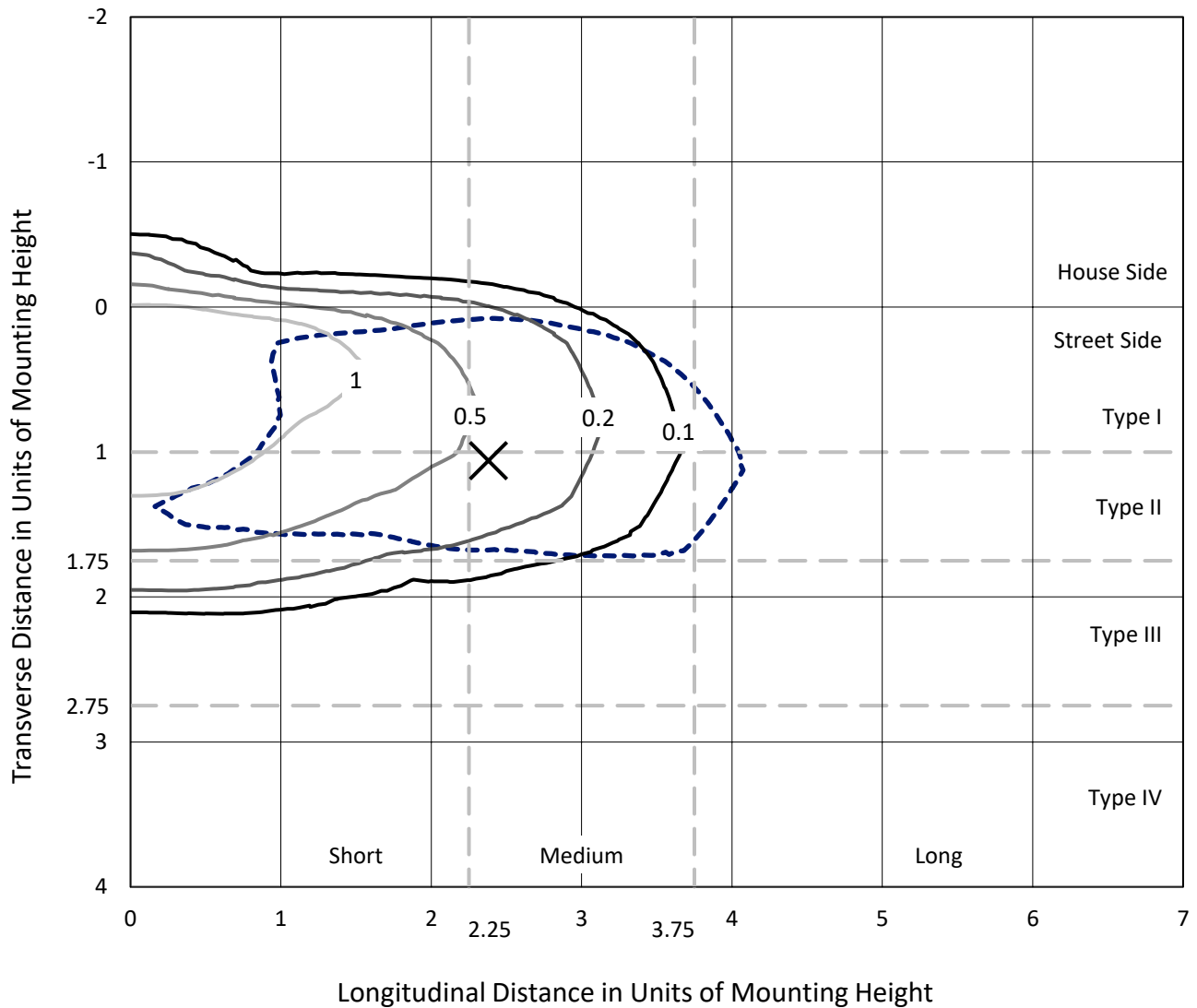
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

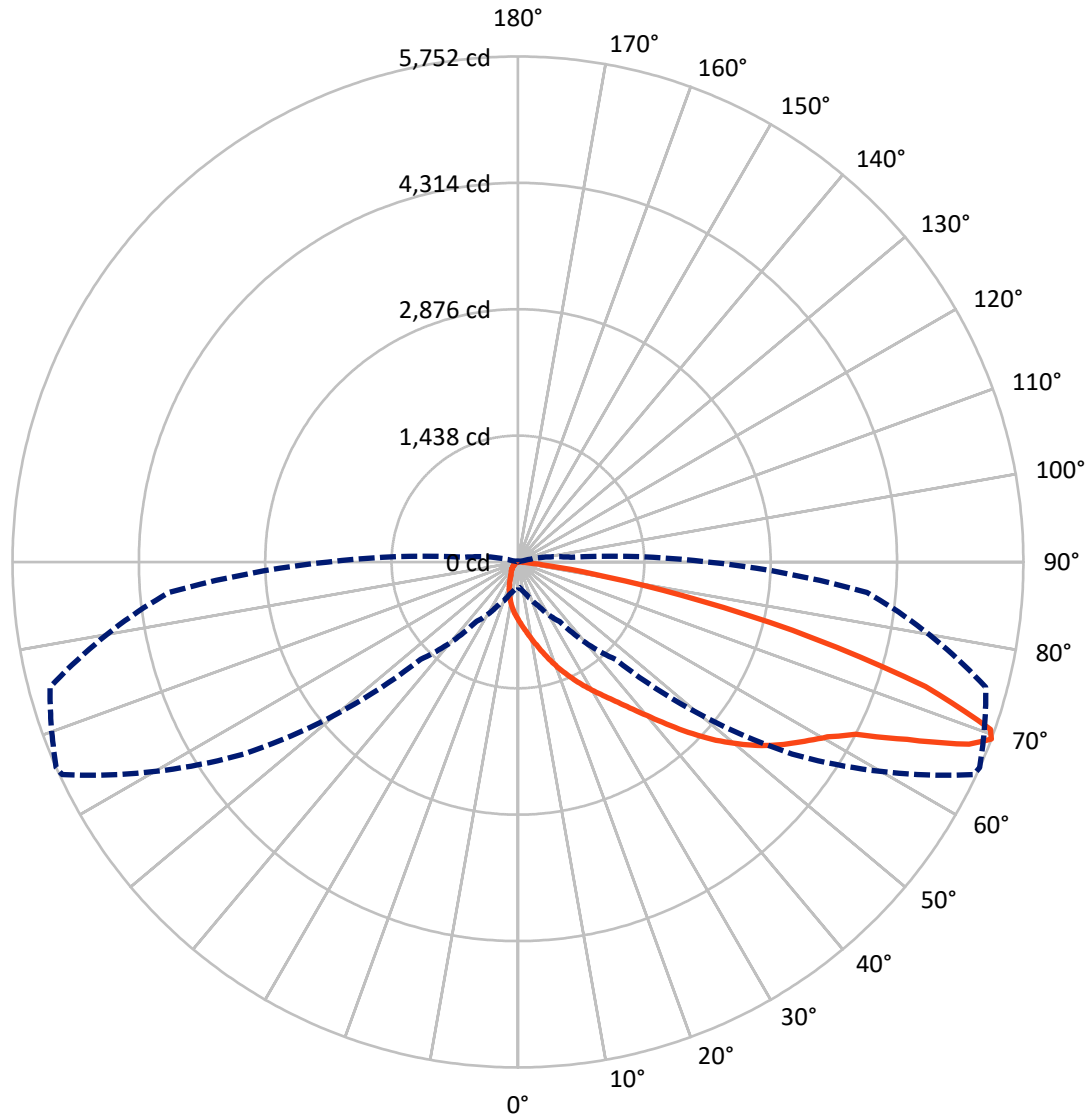
✕ Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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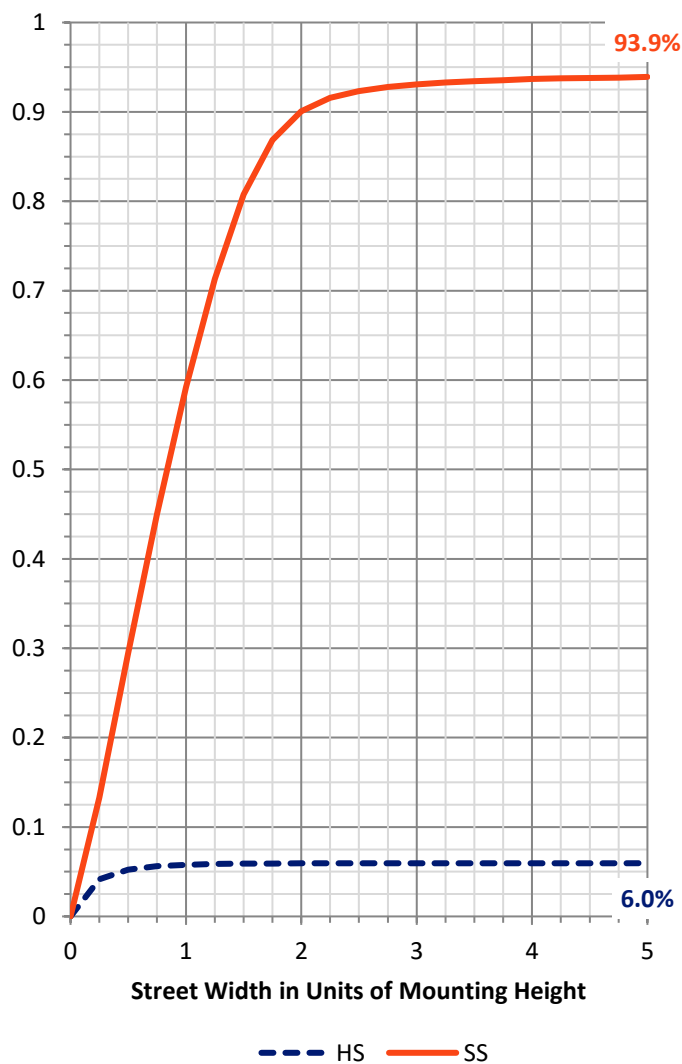
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 347.0 | 0.0 | 347.0 |
| | % Fixture | 6.0 | 0.0 | 6.0 |
| Street Side | Lumens | 5437.0 | 0.0 | 5437.0 |
| | % Fixture | 94.0 | 0.0 | 94.0 |
| Total | Lumens | 5784.0 | 0.0 | 5784.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 63.6 | 1.1 |
| 10°-20° | 189.4 | 3.3 |
| 20°-30° | 329.8 | 5.7 |
| 30°-40° | 578.6 | 10.0 |
| 40°-50° | 968.4 | 16.7 |
| 50°-60° | 1423.5 | 24.6 |
| 60°-70° | 1461.6 | 25.3 |
| 70°-80° | 721.5 | 12.5 |
| 80°-90° | 47.7 | 0.8 |
| 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° | 5784.0 | 100.0 |
| 0°-180° | 5784.0 | 100.0 |

Coefficient of Utilization



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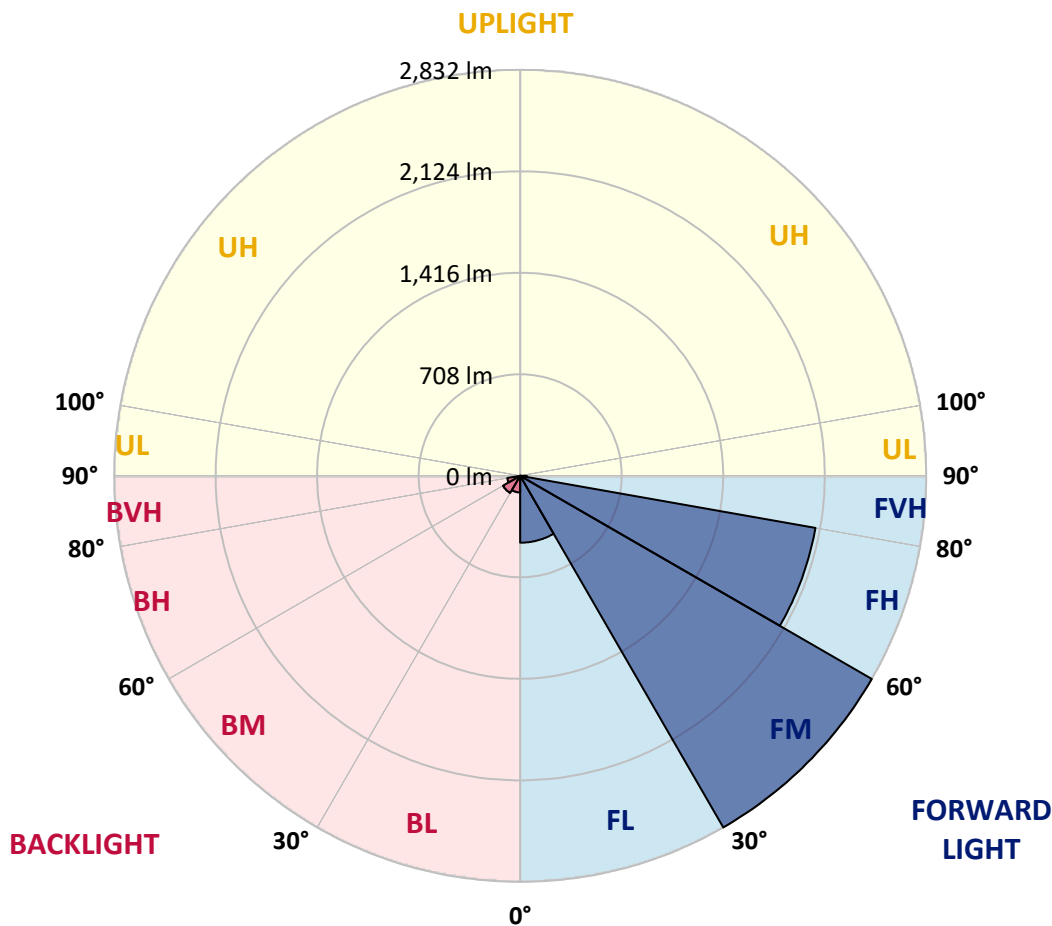
CATALOG NUMBER: GPC-SA2A-727-U-T2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 466.7 | 8.1 | | | |
| FM (30°-60°) | 2832.1 | 49.0 | | | |
| FH (60°-80°) | 2091.6 | 36.2 | | | G2/5000 |
| FVH (80°-90°) | 46.6 | 0.8 | | | G1/100 |
| BL (0°-30°) | 116.0 | 2.0 | B1/500 | | |
| BM (30°-60°) | 138.3 | 2.4 | B0/220 | | |
| BH (60°-80°) | 91.4 | 1.6 | B0/110 | | G0/110 |
| BVH (80°-90°) | 1.2 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 |
| 2.5° | 774.7 | 771.4 | 770.1 | 764.0 | 753.6 | 745.6 | 730.2 | 712.4 | 709.1 | 691.8 | 670.6 |
| 5° | 875.3 | 872.5 | 870.6 | 862.1 | 851.4 | 831.3 | 803.3 | 770.1 | 763.7 | 730.8 | 688.5 |
| 7.5° | 945.3 | 950.3 | 950.3 | 944.8 | 931.3 | 916.2 | 881.9 | 836.5 | 828.6 | 778.0 | 712.4 |
| 10° | 986.3 | 992.3 | 997.0 | 1001.6 | 999.7 | 993.7 | 961.3 | 910.2 | 900.5 | 833.5 | 740.1 |
| 12.5° | 990.1 | 996.1 | 1009.3 | 1028.8 | 1047.8 | 1061.5 | 1041.2 | 991.8 | 980.8 | 897.8 | 773.1 |
| 15° | 968.7 | 975.0 | 995.3 | 1033.2 | 1079.1 | 1119.2 | 1125.8 | 1082.1 | 1070.9 | 974.4 | 814.3 |
| 17.5° | 931.3 | 935.4 | 964.6 | 1017.0 | 1089.0 | 1162.6 | 1202.5 | 1179.1 | 1168.7 | 1062.1 | 860.2 |
| 20° | 903.6 | 906.6 | 932.1 | 988.5 | 1083.0 | 1189.8 | 1275.0 | 1282.1 | 1271.1 | 1156.0 | 909.9 |
| 22.5° | 951.1 | 956.6 | 957.4 | 984.1 | 1066.5 | 1203.3 | 1338.7 | 1383.5 | 1375.3 | 1255.8 | 958.8 |
| 25° | 1081.0 | 1087.4 | 1066.5 | 1050.0 | 1080.5 | 1209.3 | 1393.4 | 1487.4 | 1480.8 | 1363.2 | 1008.0 |
| 27.5° | 1252.7 | 1259.3 | 1232.4 | 1183.2 | 1153.8 | 1232.1 | 1442.0 | 1592.8 | 1592.6 | 1476.9 | 1061.0 |
| 30° | 1421.4 | 1428.0 | 1400.5 | 1351.4 | 1283.8 | 1296.7 | 1484.1 | 1703.3 | 1704.9 | 1594.2 | 1117.3 |
| 32.5° | 1598.3 | 1606.6 | 1578.3 | 1515.1 | 1444.5 | 1408.2 | 1543.1 | 1814.3 | 1823.6 | 1730.2 | 1180.8 |
| 35° | 1799.4 | 1800.5 | 1760.7 | 1694.5 | 1613.2 | 1557.4 | 1637.9 | 1938.7 | 1961.0 | 1898.6 | 1261.3 |
| 37.5° | 1996.7 | 2004.7 | 1972.0 | 1867.6 | 1792.8 | 1729.7 | 1778.8 | 2094.2 | 2125.8 | 2104.4 | 1366.5 |
| 40° | 2142.8 | 2159.6 | 2154.9 | 2042.3 | 1971.4 | 1926.4 | 1953.8 | 2279.1 | 2319.2 | 2343.9 | 1499.2 |
| 42.5° | 2234.6 | 2247.2 | 2268.7 | 2200.8 | 2136.5 | 2143.9 | 2160.4 | 2494.5 | 2543.9 | 2617.0 | 1651.6 |
| 45° | 2339.8 | 2345.9 | 2363.7 | 2333.8 | 2290.4 | 2365.1 | 2379.7 | 2737.1 | 2789.0 | 2910.7 | 1820.9 |
| 47.5° | 2468.4 | 2482.7 | 2487.6 | 2460.1 | 2440.4 | 2560.7 | 2590.9 | 2957.7 | 3030.5 | 3225.3 | 2000.0 |
| 50° | 2632.1 | 2636.0 | 2644.5 | 2626.6 | 2606.9 | 2728.8 | 2780.5 | 3189.3 | 3255.5 | 3540.9 | 2176.6 |
| 52.5° | 2792.3 | 2806.0 | 2835.7 | 2824.4 | 2816.5 | 2872.0 | 2949.4 | 3398.1 | 3472.0 | 3804.1 | 2353.0 |
| 55° | 2838.4 | 2850.3 | 2952.7 | 3022.8 | 3087.6 | 3048.3 | 3111.0 | 3585.1 | 3665.1 | 4039.3 | 2522.8 |
| 57.5° | 2654.1 | 2678.0 | 2855.5 | 3037.9 | 3306.8 | 3322.5 | 3332.9 | 3777.2 | 3848.9 | 4219.5 | 2699.4 |
| 60° | 2188.2 | 2192.8 | 2484.1 | 2797.0 | 3270.6 | 3561.8 | 3657.1 | 3983.5 | 4043.7 | 4387.3 | 2911.0 |
| 62.5° | 1391.7 | 1439.3 | 1758.8 | 2200.5 | 2887.1 | 3527.2 | 4049.2 | 4295.6 | 4317.6 | 4588.7 | 3214.3 |
| 65° | 662.9 | 693.7 | 923.9 | 1359.6 | 2091.2 | 3084.0 | 4319.8 | 4860.1 | 4870.0 | 4987.9 | 3619.5 |
| 67.5° | 367.0 | 381.9 | 491.5 | 731.9 | 1222.5 | 2181.0 | 4210.4 | 5528.8 | 5538.2 | 5395.6 | 3975.0 |
| 69° | 287.1 | 299.7 | 386.0 | 551.6 | 828.8 | 1567.6 | 3810.1 | 5724.7 | 5752.4 | 5512.3 | 3987.6 |
| 70° | 243.7 | 256.0 | 332.4 | 465.9 | 666.5 | 1211.3 | 3391.5 | 5676.1 | 5705.5 | 5501.3 | 3893.4 |
| 72.5° | 149.2 | 156.3 | 221.4 | 328.0 | 446.7 | 609.3 | 2091.5 | 4800.2 | 4850.0 | 5046.4 | 3346.1 |
| 75° | 100.5 | 104.4 | 138.5 | 226.4 | 319.5 | 313.7 | 1086.5 | 3383.5 | 3491.2 | 3925.5 | 2471.4 |
| 77.5° | 72.0 | 75.5 | 92.9 | 146.4 | 223.9 | 207.1 | 492.0 | 2102.7 | 2125.8 | 2354.4 | 1347.8 |
| 80° | 40.9 | 44.2 | 65.7 | 87.1 | 151.9 | 138.2 | 195.6 | 1004.4 | 1015.9 | 1009.6 | 450.0 |
| 82.5° | 21.4 | 24.2 | 36.0 | 57.4 | 97.5 | 90.4 | 81.3 | 336.3 | 337.9 | 281.0 | 98.6 |
| 85° | 4.1 | 4.9 | 17.9 | 39.3 | 50.3 | 39.3 | 33.2 | 78.8 | 80.5 | 71.2 | 24.5 |
| 87.5° | 0.0 | 0.3 | 7.1 | 8.8 | 9.9 | 10.2 | 10.7 | 15.4 | 16.5 | 22.3 | 6.6 |
| 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: P386338
 CATALOG NUMBER: GPC-SA2A-727-U-T2-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 | 658.2 |
| 2.5° | 661.3 | 651.4 | 632.4 | 610.4 | 593.4 | 576.6 | 563.5 | 549.7 | 544.8 | 542.3 | 542.0 |
| 5° | 667.9 | 647.0 | 606.9 | 565.7 | 531.9 | 500.0 | 477.2 | 455.5 | 445.3 | 440.7 | 438.7 |
| 7.5° | 678.8 | 645.3 | 580.8 | 517.9 | 469.2 | 429.4 | 397.8 | 374.2 | 362.4 | 357.4 | 355.5 |
| 10° | 691.8 | 643.1 | 550.3 | 467.3 | 405.2 | 364.0 | 332.7 | 309.3 | 296.4 | 290.9 | 288.2 |
| 12.5° | 706.9 | 639.3 | 515.1 | 416.2 | 350.5 | 309.3 | 271.4 | 242.6 | 227.7 | 221.4 | 218.4 |
| 15° | 725.5 | 635.4 | 478.3 | 368.1 | 302.5 | 252.2 | 210.7 | 191.2 | 188.2 | 187.1 | 187.4 |
| 17.5° | 744.0 | 629.4 | 438.2 | 320.6 | 251.9 | 197.0 | 175.8 | 174.7 | 175.3 | 175.3 | 175.3 |
| 20° | 760.4 | 615.7 | 394.5 | 279.9 | 203.8 | 166.2 | 161.8 | 159.9 | 158.5 | 157.4 | 156.0 |
| 22.5° | 773.3 | 597.2 | 352.5 | 239.6 | 166.5 | 152.2 | 145.3 | 139.3 | 134.3 | 131.0 | 129.4 |
| 25° | 782.1 | 572.8 | 314.0 | 200.8 | 149.7 | 138.5 | 126.1 | 115.9 | 108.2 | 103.6 | 101.6 |
| 27.5° | 788.7 | 546.4 | 279.7 | 168.1 | 138.2 | 122.5 | 106.3 | 94.2 | 86.3 | 82.1 | 80.5 |
| 30° | 793.4 | 516.5 | 249.4 | 147.8 | 125.3 | 105.8 | 88.5 | 76.6 | 70.9 | 68.7 | 67.6 |
| 32.5° | 797.8 | 483.2 | 220.9 | 138.2 | 113.2 | 90.4 | 74.2 | 65.1 | 61.5 | 58.8 | 58.0 |
| 35° | 808.8 | 452.5 | 193.7 | 128.0 | 100.8 | 77.2 | 63.7 | 57.1 | 53.6 | 51.9 | 51.4 |
| 37.5° | 834.9 | 429.7 | 167.6 | 117.6 | 88.5 | 66.8 | 55.8 | 51.1 | 47.8 | 46.2 | 45.6 |
| 40° | 876.9 | 418.1 | 145.6 | 106.3 | 76.4 | 58.8 | 50.5 | 46.2 | 42.6 | 40.1 | 39.6 |
| 42.5° | 938.7 | 419.8 | 130.2 | 95.1 | 66.8 | 52.5 | 45.6 | 40.4 | 36.5 | 34.3 | 33.8 |
| 45° | 1013.7 | 431.9 | 119.5 | 84.1 | 58.8 | 47.5 | 40.1 | 34.6 | 31.0 | 29.1 | 28.6 |
| 47.5° | 1095.0 | 451.4 | 110.7 | 74.2 | 52.5 | 42.9 | 34.6 | 28.8 | 25.8 | 24.2 | 23.9 |
| 50° | 1180.8 | 470.3 | 101.6 | 64.6 | 47.0 | 38.2 | 29.1 | 23.9 | 21.4 | 20.1 | 19.5 |
| 52.5° | 1267.6 | 492.3 | 93.4 | 55.8 | 42.3 | 32.7 | 24.2 | 19.5 | 17.6 | 16.5 | 15.9 |
| 55° | 1361.0 | 508.8 | 85.4 | 48.9 | 37.6 | 27.7 | 20.1 | 16.2 | 14.6 | 13.2 | 12.9 |
| 57.5° | 1470.9 | 534.3 | 77.2 | 42.3 | 32.1 | 23.1 | 16.5 | 12.9 | 11.5 | 10.2 | 9.9 |
| 60° | 1619.2 | 564.3 | 68.4 | 37.4 | 26.4 | 19.0 | 13.5 | 10.4 | 8.8 | 7.7 | 7.4 |
| 62.5° | 1814.8 | 597.5 | 57.4 | 32.7 | 21.4 | 15.4 | 10.7 | 8.2 | 6.3 | 4.9 | 4.9 |
| 65° | 2062.9 | 651.6 | 47.0 | 27.5 | 17.6 | 12.6 | 8.2 | 6.0 | 3.6 | 2.2 | 2.2 |
| 67.5° | 2207.7 | 661.0 | 37.9 | 22.5 | 14.3 | 10.7 | 6.9 | 4.1 | 1.1 | 0.3 | 0.0 |
| 69° | 2161.3 | 606.9 | 32.1 | 19.2 | 12.4 | 10.2 | 6.3 | 3.0 | 0.5 | 0.0 | 0.0 |
| 70° | 2073.9 | 554.9 | 28.3 | 17.0 | 11.3 | 9.6 | 6.0 | 2.2 | 0.5 | 0.0 | 0.0 |
| 72.5° | 1713.7 | 395.1 | 21.4 | 12.6 | 8.2 | 8.5 | 5.5 | 1.4 | 0.5 | 0.0 | 0.0 |
| 75° | 1248.3 | 240.1 | 15.4 | 8.8 | 5.2 | 6.3 | 3.8 | 0.5 | 0.3 | 0.0 | 0.0 |
| 77.5° | 694.5 | 113.2 | 9.6 | 4.9 | 3.3 | 3.8 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 225.5 | 30.8 | 4.4 | 2.7 | 1.9 | 2.2 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 41.8 | 8.8 | 2.5 | 1.4 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 9.1 | 3.6 | 1.4 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.0 | 1.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 |

LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-1-R4

Test Date: 08/20/2019

Luminaire Tested: SA1C-727-U-5WQ

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-1-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-727-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-1-R3. TO UPDATE THE CATALOG NUMBER.TESTED IN
 SITU. (1) 70 CRI, 2700K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 2741
 CIE u': 0.2605
 CIE v': 0.5272
 Duv: 0.0005
 CIE x: 0.4573
 CIE y: 0.4113
 CIE z: 0.1313
 Peak Wavelength (nm): 602
 Dominant Wavelength (nm): 583
 Purity: 61.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.5 | | |
| R1: | 69.2 | R9: | -16.1 |
| R2: | 79.4 | R10: | 51.4 |
| R3: | 87.8 | R11: | 63.1 |
| R4: | 69.4 | R12: | 42.0 |
| R5: | 66.4 | R13: | 70.2 |
| R6: | 69.8 | R14: | 92.4 |
| R7: | 79.8 | | |
| R8: | 50.1 | | |

Rf: 69.9
 Rg: 98.3



Test Conditions

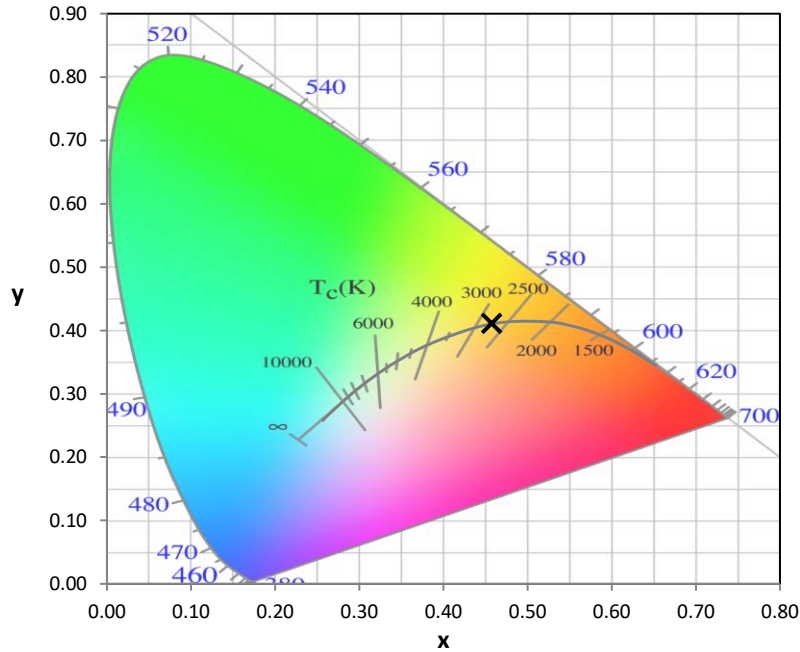
Stabilization Time: 56M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.3./42%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-1-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 |

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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 2700K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: 6211.7

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|
| 360 | 2044 | 0.0 | 490 | 7179 | 1.0 | 620 | 118034 | 30.7 | 750 | 8362 | 0.0 | 880 | 3128 | 0.0 |
| 365 | 2016 | 0.0 | 495 | 10476 | 1.9 | 625 | 111884 | 24.7 | 755 | 7635 | 0.0 | 885 | 3110 | 0.0 |
| 370 | 2020 | 0.0 | 500 | 15549 | 3.4 | 630 | 106119 | 19.2 | 760 | 6582 | 0.0 | 890 | 2632 | 0.0 |
| 375 | 2137 | 0.0 | 505 | 22477 | 6.3 | 635 | 99706 | 15.0 | 765 | 5777 | 0.0 | 895 | 2709 | 0.0 |
| 380 | 2046 | 0.0 | 510 | 30417 | 10.4 | 640 | 92142 | 11.0 | 770 | 5474 | 0.0 | 900 | 2016 | 0.0 |
| 385 | 1925 | 0.0 | 515 | 39274 | 16.3 | 645 | 84987 | 8.2 | 775 | 4977 | 0.0 | 905 | 1748 | 0.0 |
| 390 | 1893 | 0.0 | 520 | 47282 | 22.9 | 650 | 78016 | 5.7 | 780 | 4723 | 0.0 | 910 | 2046 | 0.0 |
| 395 | 1695 | 0.0 | 525 | 55413 | 29.7 | 655 | 71541 | 4.1 | 785 | 4219 | 0.0 | 915 | 1844 | 0.0 |
| 400 | 1633 | 0.0 | 530 | 62377 | 36.7 | 660 | 64863 | 2.7 | 790 | 3969 | 0.0 | 920 | 2734 | 0.0 |
| 405 | 2065 | 0.0 | 535 | 68520 | 42.5 | 665 | 58485 | 1.9 | 795 | 4122 | 0.0 | 925 | 2307 | 0.0 |
| 410 | 3449 | 0.0 | 540 | 73435 | 47.8 | 670 | 51641 | 1.1 | 800 | 2864 | 0.0 | 930 | 2039 | 0.0 |
| 415 | 7117 | 0.0 | 545 | 78677 | 52.4 | 675 | 46030 | 0.8 | 805 | 3151 | 0.0 | 935 | 1784 | 0.0 |
| 420 | 13992 | 0.0 | 550 | 83331 | 56.6 | 680 | 40590 | 0.5 | 810 | 3022 | 0.0 | 940 | 2464 | 0.0 |
| 425 | 25176 | 0.1 | 555 | 89120 | 60.9 | 685 | 35691 | 0.3 | 815 | 3471 | 0.0 | 945 | 2794 | 0.0 |
| 430 | 38151 | 0.3 | 560 | 94613 | 64.3 | 690 | 31631 | 0.2 | 820 | 2749 | 0.0 | 950 | 3090 | 0.0 |
| 435 | 49673 | 0.6 | 565 | 99818 | 66.4 | 695 | 27437 | 0.1 | 825 | 2729 | 0.0 | 955 | 1866 | 0.0 |
| 440 | 57273 | 0.9 | 570 | 106526 | 69.3 | 700 | 24589 | 0.1 | 830 | 2282 | 0.0 | 960 | 3110 | 0.0 |
| 445 | 54802 | 1.1 | 575 | 111610 | 69.4 | 705 | 21832 | 0.0 | 835 | 3140 | 0.0 | 965 | 3880 | 0.0 |
| 450 | 39184 | 1.0 | 580 | 117163 | 69.6 | 710 | 19500 | 0.0 | 840 | 2365 | 0.0 | 970 | 3243 | 0.0 |
| 455 | 22506 | 0.8 | 585 | 122201 | 67.9 | 715 | 17870 | 0.0 | 845 | 3024 | 0.0 | 975 | 2014 | 0.0 |
| 460 | 13692 | 0.6 | 590 | 125662 | 65.0 | 720 | 15924 | 0.0 | 850 | 2510 | 0.0 | 980 | 1688 | 0.0 |
| 465 | 9446 | 0.5 | 595 | 127415 | 60.4 | 725 | 14268 | 0.0 | 855 | 2739 | 0.0 | 985 | 2827 | 0.0 |
| 470 | 6698 | 0.4 | 600 | 129155 | 55.7 | 730 | 12438 | 0.0 | 860 | 3515 | 0.0 | 990 | 4172 | 0.0 |
| 475 | 5328 | 0.4 | 605 | 128057 | 49.6 | 735 | 11255 | 0.0 | 865 | 3600 | 0.0 | 995 | 3177 | 0.0 |
| 480 | 5081 | 0.5 | 610 | 126031 | 43.3 | 740 | 9951 | 0.0 | 870 | 3609 | 0.0 | 1000 | 3241 | 0.0 |
| 485 | 5579 | 0.7 | 615 | 123059 | 37.1 | 745 | 8870 | 0.0 | 875 | 3208 | 0.0 | | | |

REPORT NUMBER: SP1-1908-441-1-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 6474.3

S/P: 1.04

| 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 | 2044 | 0.0 | 490 | 7179 | 6.0 | 620 | 118034 | 0.1 | 750 | 8362 | 0.0 | 880 | 3128 | 0.0 |
| 365 | 2016 | 0.0 | 495 | 10476 | 8.6 | 625 | 111884 | 0.1 | 755 | 7635 | 0.0 | 885 | 3110 | 0.0 |
| 370 | 2020 | 0.0 | 500 | 15549 | 12.5 | 630 | 106119 | 0.0 | 760 | 6582 | 0.0 | 890 | 2632 | 0.0 |
| 375 | 2137 | 0.0 | 505 | 22477 | 17.3 | 635 | 99706 | 0.0 | 765 | 5777 | 0.0 | 895 | 2709 | 0.0 |
| 380 | 2046 | 0.0 | 510 | 30417 | 21.8 | 640 | 92142 | 0.0 | 770 | 5474 | 0.0 | 900 | 2016 | 0.0 |
| 385 | 1925 | 0.0 | 515 | 39274 | 25.7 | 645 | 84987 | 0.0 | 775 | 4977 | 0.0 | 905 | 1748 | 0.0 |
| 390 | 1893 | 0.0 | 520 | 47282 | 27.5 | 650 | 78016 | 0.0 | 780 | 4723 | 0.0 | 910 | 2046 | 0.0 |
| 395 | 1695 | 0.0 | 525 | 55413 | 28.1 | 655 | 71541 | 0.0 | 785 | 4219 | 0.0 | 915 | 1844 | 0.0 |
| 400 | 1633 | 0.0 | 530 | 62377 | 27.0 | 660 | 64863 | 0.0 | 790 | 3969 | 0.0 | 920 | 2734 | 0.0 |
| 405 | 2065 | 0.0 | 535 | 68520 | 24.7 | 665 | 58485 | 0.0 | 795 | 4122 | 0.0 | 925 | 2307 | 0.0 |
| 410 | 3449 | 0.1 | 540 | 73435 | 21.5 | 670 | 51641 | 0.0 | 800 | 2864 | 0.0 | 930 | 2039 | 0.0 |
| 415 | 7117 | 0.5 | 545 | 78677 | 18.3 | 675 | 46030 | 0.0 | 805 | 3151 | 0.0 | 935 | 1784 | 0.0 |
| 420 | 13992 | 1.6 | 550 | 83331 | 15.0 | 680 | 40590 | 0.0 | 810 | 3022 | 0.0 | 940 | 2464 | 0.0 |
| 425 | 25176 | 3.9 | 555 | 89120 | 12.0 | 685 | 35691 | 0.0 | 815 | 3471 | 0.0 | 945 | 2794 | 0.0 |
| 430 | 38151 | 8.1 | 560 | 94613 | 9.3 | 690 | 31631 | 0.0 | 820 | 2749 | 0.0 | 950 | 3090 | 0.0 |
| 435 | 49673 | 13.3 | 565 | 99818 | 7.0 | 695 | 27437 | 0.0 | 825 | 2729 | 0.0 | 955 | 1866 | 0.0 |
| 440 | 57273 | 19.1 | 570 | 106526 | 5.2 | 700 | 24589 | 0.0 | 830 | 2282 | 0.0 | 960 | 3110 | 0.0 |
| 445 | 54802 | 21.6 | 575 | 111610 | 3.7 | 705 | 21832 | 0.0 | 835 | 3140 | 0.0 | 965 | 3880 | 0.0 |
| 450 | 39184 | 18.1 | 580 | 117163 | 2.6 | 710 | 19500 | 0.0 | 840 | 2365 | 0.0 | 970 | 3243 | 0.0 |
| 455 | 22506 | 11.8 | 585 | 122201 | 1.8 | 715 | 17870 | 0.0 | 845 | 3024 | 0.0 | 975 | 2014 | 0.0 |
| 460 | 13692 | 8.1 | 590 | 125662 | 1.2 | 720 | 15924 | 0.0 | 850 | 2510 | 0.0 | 980 | 1688 | 0.0 |
| 465 | 9446 | 6.2 | 595 | 127415 | 0.8 | 725 | 14268 | 0.0 | 855 | 2739 | 0.0 | 985 | 2827 | 0.0 |
| 470 | 6698 | 4.8 | 600 | 129155 | 0.5 | 730 | 12438 | 0.0 | 860 | 3515 | 0.0 | 990 | 4172 | 0.0 |
| 475 | 5328 | 4.1 | 605 | 128057 | 0.4 | 735 | 11255 | 0.0 | 865 | 3600 | 0.0 | 995 | 3177 | 0.0 |
| 480 | 5081 | 4.1 | 610 | 126031 | 0.2 | 740 | 9951 | 0.0 | 870 | 3609 | 0.0 | 1000 | 3241 | 0.0 |
| 485 | 5579 | 4.6 | 615 | 123059 | 0.1 | 745 | 8870 | 0.0 | 875 | 3208 | 0.0 | | | |

REPORT NUMBER: SP1-1908-441-1-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 2145.7 M/P: 0.35

| 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 | 2044 | 0.0 | 490 | 7179 | 11.1 | 620 | 118034 | 1.5 | 750 | 8362 | 0.0 | 880 | 3128 | 0.0 |
| 365 | 2016 | 0.0 | 495 | 10476 | 16.9 | 625 | 111884 | 0.9 | 755 | 7635 | 0.0 | 885 | 3110 | 0.0 |
| 370 | 2020 | 0.0 | 500 | 15549 | 26.0 | 630 | 106119 | 0.6 | 760 | 6582 | 0.0 | 890 | 2632 | 0.0 |
| 375 | 2137 | 0.0 | 505 | 22477 | 38.2 | 635 | 99706 | 0.4 | 765 | 5777 | 0.0 | 895 | 2709 | 0.0 |
| 380 | 2046 | 0.0 | 510 | 30417 | 51.6 | 640 | 92142 | 0.2 | 770 | 5474 | 0.0 | 900 | 2016 | 0.0 |
| 385 | 1925 | 0.0 | 515 | 39274 | 65.1 | 645 | 84987 | 0.1 | 775 | 4977 | 0.0 | 905 | 1748 | 0.0 |
| 390 | 1893 | 0.0 | 520 | 47282 | 75.2 | 650 | 78016 | 0.1 | 780 | 4723 | 0.0 | 910 | 2046 | 0.0 |
| 395 | 1695 | 0.0 | 525 | 55413 | 82.9 | 655 | 71541 | 0.1 | 785 | 4219 | 0.0 | 915 | 1844 | 0.0 |
| 400 | 1633 | 0.0 | 530 | 62377 | 86.0 | 660 | 64863 | 0.0 | 790 | 3969 | 0.0 | 920 | 2734 | 0.0 |
| 405 | 2065 | 0.1 | 535 | 68520 | 85.4 | 665 | 58485 | 0.0 | 795 | 4122 | 0.0 | 925 | 2307 | 0.0 |
| 410 | 3449 | 0.2 | 540 | 73435 | 81.1 | 670 | 51641 | 0.0 | 800 | 2864 | 0.0 | 930 | 2039 | 0.0 |
| 415 | 7117 | 0.7 | 545 | 78677 | 75.4 | 675 | 46030 | 0.0 | 805 | 3151 | 0.0 | 935 | 1784 | 0.0 |
| 420 | 13992 | 2.3 | 550 | 83331 | 68.1 | 680 | 40590 | 0.0 | 810 | 3022 | 0.0 | 940 | 2464 | 0.0 |
| 425 | 25176 | 6.2 | 555 | 89120 | 60.9 | 685 | 35691 | 0.0 | 815 | 3471 | 0.0 | 945 | 2794 | 0.0 |
| 430 | 38151 | 13.0 | 560 | 94613 | 52.9 | 690 | 31631 | 0.0 | 820 | 2749 | 0.0 | 950 | 3090 | 0.0 |
| 435 | 49673 | 22.2 | 565 | 99818 | 44.8 | 695 | 27437 | 0.0 | 825 | 2729 | 0.0 | 955 | 1866 | 0.0 |
| 440 | 57273 | 32.0 | 570 | 106526 | 37.6 | 700 | 24589 | 0.0 | 830 | 2282 | 0.0 | 960 | 3110 | 0.0 |
| 445 | 54802 | 36.7 | 575 | 111610 | 30.4 | 705 | 21832 | 0.0 | 835 | 3140 | 0.0 | 965 | 3880 | 0.0 |
| 450 | 39184 | 30.4 | 580 | 117163 | 24.1 | 710 | 19500 | 0.0 | 840 | 2365 | 0.0 | 970 | 3243 | 0.0 |
| 455 | 22506 | 19.7 | 585 | 122201 | 18.7 | 715 | 17870 | 0.0 | 845 | 3024 | 0.0 | 975 | 2014 | 0.0 |
| 460 | 13692 | 13.2 | 590 | 125662 | 14.0 | 720 | 15924 | 0.0 | 850 | 2510 | 0.0 | 980 | 1688 | 0.0 |
| 465 | 9446 | 10.0 | 595 | 127415 | 10.2 | 725 | 14268 | 0.0 | 855 | 2739 | 0.0 | 985 | 2827 | 0.0 |
| 470 | 6698 | 7.7 | 600 | 129155 | 7.3 | 730 | 12438 | 0.0 | 860 | 3515 | 0.0 | 990 | 4172 | 0.0 |
| 475 | 5328 | 6.7 | 605 | 128057 | 5.0 | 735 | 11255 | 0.0 | 865 | 3600 | 0.0 | 995 | 3177 | 0.0 |
| 480 | 5081 | 6.9 | 610 | 126031 | 3.4 | 740 | 9951 | 0.0 | 870 | 3609 | 0.0 | 1000 | 3241 | 0.0 |
| 485 | 5579 | 8.1 | 615 | 123059 | 2.3 | 745 | 8870 | 0.0 | 875 | 3208 | 0.0 | | | |

REPORT NUMBER: SP1-1908-441-1-R4

TM-30-18

Summary

$R_f = 69.9$
 $R_g = 98.3$
 $CIE R_a = 71.5$
 $R_9 = -16.1$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-1-R4

TM-30-18

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

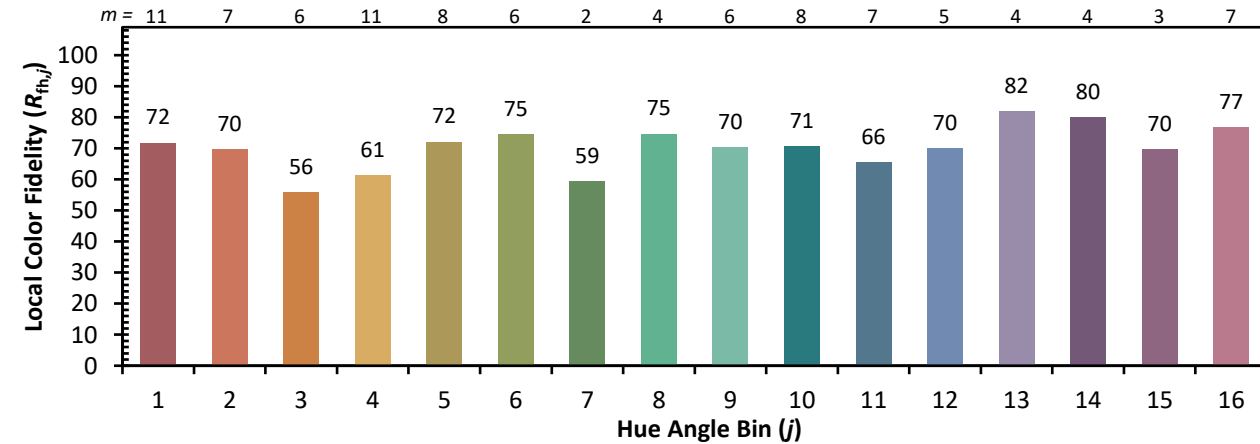
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 54 | CES51 = 77 | CES76 = 48 |
| CES02 = 63 | CES27 = 74 | CES52 = 80 | CES77 = 75 |
| CES03 = 31 | CES28 = 80 | CES53 = 66 | CES78 = 56 |
| CES04 = 71 | CES29 = 44 | CES54 = 77 | CES79 = 81 |
| CES05 = 50 | CES30 = 46 | CES55 = 74 | CES80 = 80 |
| CES06 = 52 | CES31 = 50 | CES56 = 63 | CES81 = 73 |
| CES07 = 42 | CES32 = 49 | CES57 = 60 | CES82 = 91 |
| CES08 = 41 | CES33 = 53 | CES58 = 63 | CES83 = 84 |
| CES09 = 29 | CES34 = 66 | CES59 = 85 | CES84 = 90 |
| CES10 = 77 | CES35 = 82 | CES60 = 89 | CES85 = 87 |
| CES11 = 60 | CES36 = 78 | CES61 = 85 | CES86 = 65 |
| CES12 = 66 | CES37 = 75 | CES62 = 69 | CES87 = 78 |
| CES13 = 43 | CES38 = 53 | CES63 = 68 | CES88 = 73 |
| CES14 = 74 | CES39 = 91 | CES64 = 68 | CES89 = 68 |
| CES15 = 71 | CES40 = 85 | CES65 = 65 | CES90 = 68 |
| CES16 = 48 | CES41 = 76 | CES66 = 62 | CES91 = 91 |
| CES17 = 50 | CES42 = 76 | CES67 = 60 | CES92 = 71 |
| CES18 = 57 | CES43 = 65 | CES68 = 68 | CES93 = 82 |
| CES19 = 73 | CES44 = 98 | CES69 = 77 | CES94 = 57 |
| CES20 = 67 | CES45 = 75 | CES70 = 60 | CES95 = 78 |
| CES21 = 88 | CES46 = 70 | CES71 = 57 | CES96 = 80 |
| CES22 = 80 | CES47 = 63 | CES72 = 86 | CES97 = 79 |
| CES23 = 92 | CES48 = 51 | CES73 = 52 | CES98 = 71 |
| CES24 = 91 | CES49 = 68 | CES74 = 90 | CES99 = 64 |
| CES25 = 73 | CES50 = 77 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)