

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: P637339

Luminaire Tested: GWS-SA4C-750-U-T2R-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P637339
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA4C-750-U-T2R-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD
Light Source: (64) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16013.8 lumens
Efficiency: N/A
Efficacy: 124.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

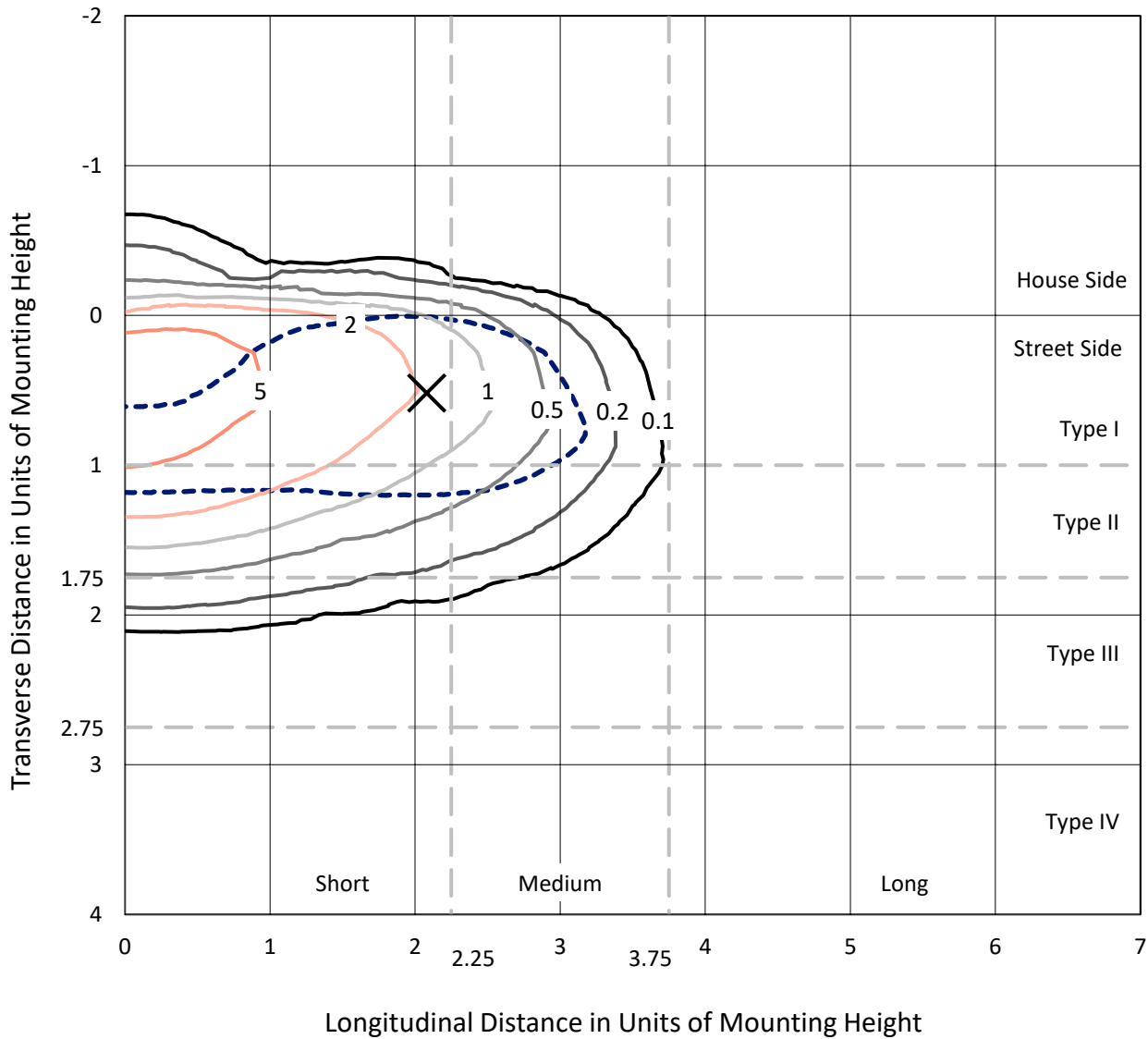
Input Watts (W): 128.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P637339
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Iso-Footcandle Lines of Horizontal Illumination

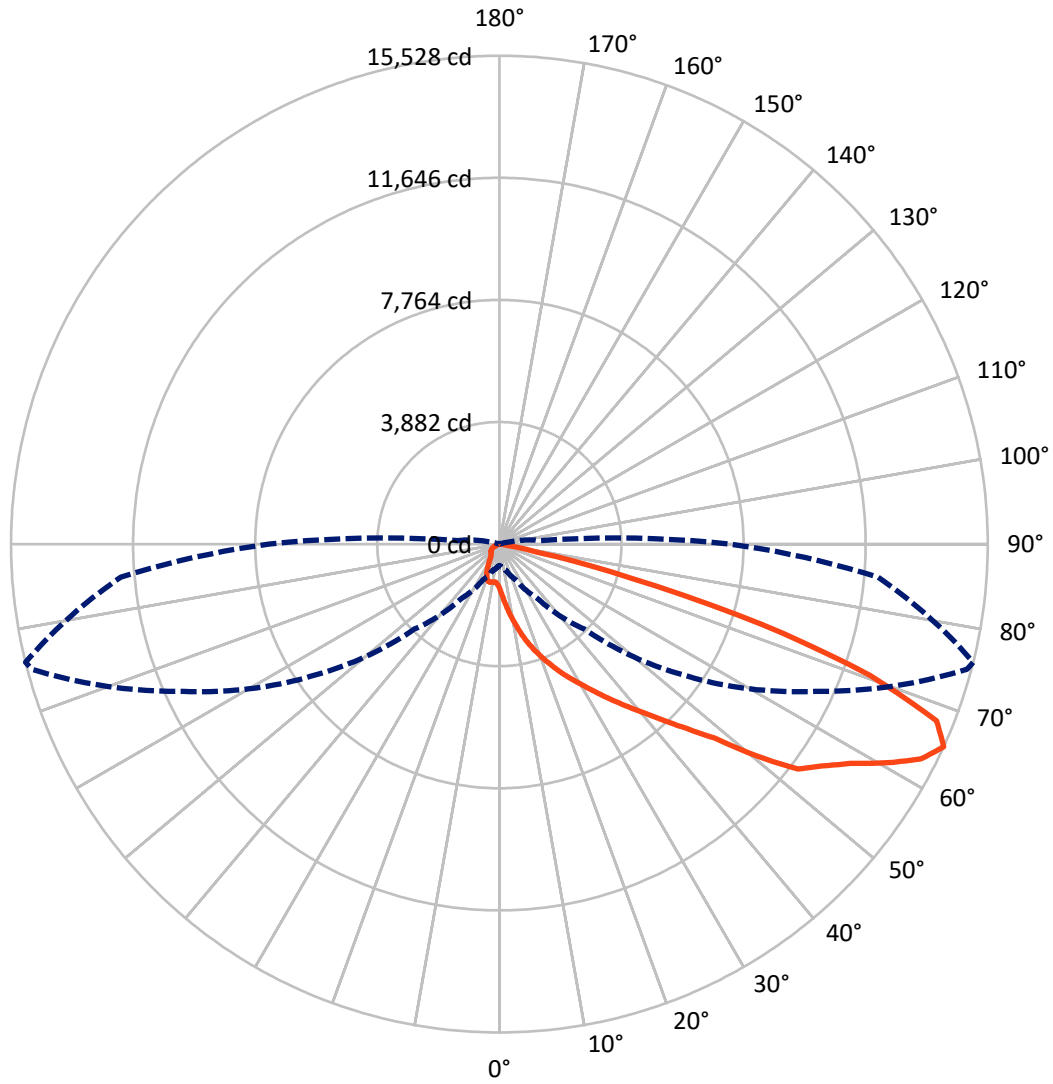
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.7 fc
 Type II - Short - N/A

REPORT NUMBER: P637339
CATALOG NUMBER: GWS-SA4C-750-U-T2R-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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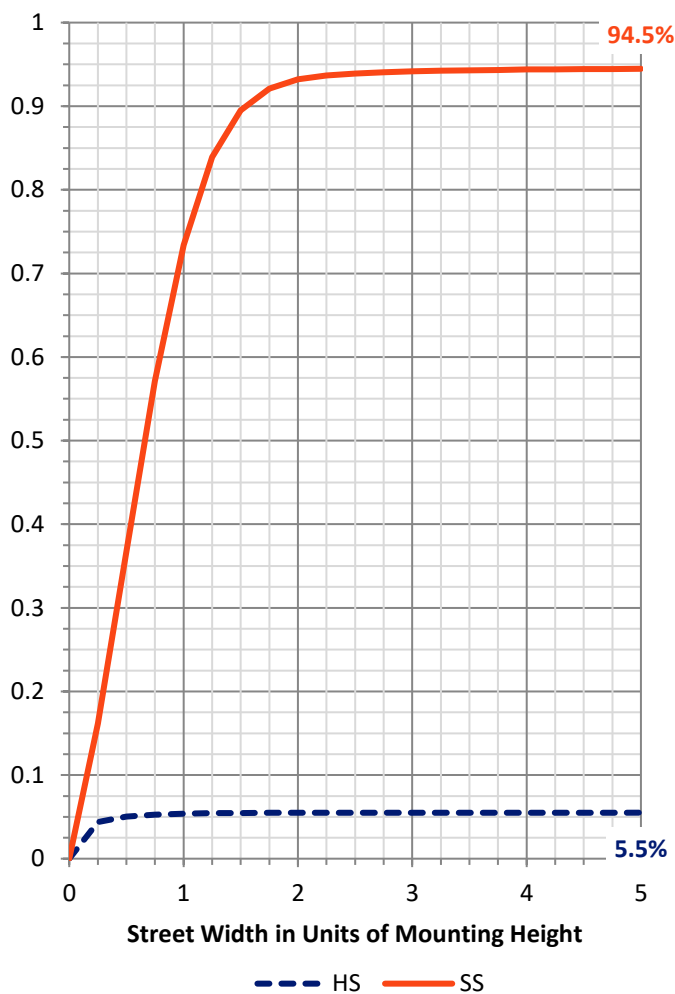
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 885.5 | 0.0 | 885.5 |
| | % Fixture | 5.5 | 0.0 | 5.5 |
| Street Side | Lumens | 15128.3 | 0.0 | 15128.3 |
| | % Fixture | 94.5 | 0.0 | 94.5 |
| Total | Lumens | 16013.8 | 0.0 | 16013.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 172.5 | 1.1 |
| 10°-20° | 654.5 | 4.1 |
| 20°-30° | 1335.2 | 8.3 |
| 30°-40° | 2374.8 | 14.8 |
| 40°-50° | 3510.5 | 21.9 |
| 50°-60° | 4019.2 | 25.1 |
| 60°-70° | 3066.5 | 19.1 |
| 70°-80° | 859.0 | 5.4 |
| 80°-90° | 21.6 | 0.1 |
| 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° | 16013.8 | 100.0 |
| 0°-180° | 16013.8 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P637339

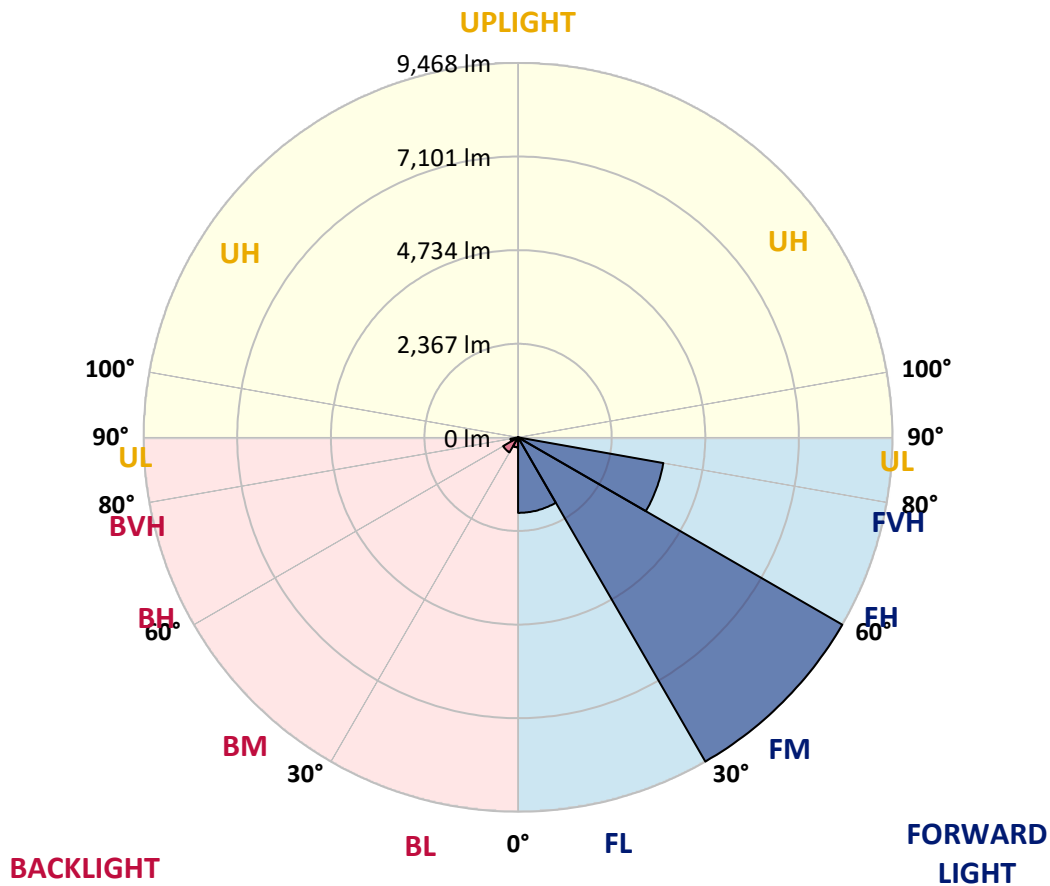
CATALOG NUMBER: GWS-SA4C-750-U-T2R-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1909.5 | 11.9 | | | |
| FM (30°-60°) | 9467.6 | 59.1 | | | |
| FH (60°-80°) | 3730.8 | 23.3 | | | G2/5000 |
| FVH (80°-90°) | 20.4 | 0.1 | | | G1/100 |
| BL (0°-30°) | 252.7 | 1.6 | B1/500 | | |
| BM (30°-60°) | 436.9 | 2.7 | B1/1000 | | |
| BH (60°-80°) | 194.7 | 1.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.3 | 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 Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0° | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 |
| 2.5° | 2185.1 | 2217.8 | 2192.2 | 2149.5 | 2066.9 | 1987.2 | 1884.7 | 1743.8 | 1631.3 | 1617.1 | 1511.8 |
| 5° | 2950.9 | 2948.1 | 2892.6 | 2837.0 | 2750.2 | 2613.5 | 2407.1 | 2145.2 | 1893.3 | 1871.9 | 1635.6 |
| 7.5° | 3406.4 | 3410.7 | 3379.4 | 3336.7 | 3251.3 | 3110.3 | 2895.4 | 2579.4 | 2210.7 | 2168.0 | 1805.0 |
| 10° | 3789.4 | 3787.9 | 3765.2 | 3745.2 | 3668.4 | 3574.4 | 3343.8 | 2996.5 | 2552.3 | 2485.4 | 1994.3 |
| 12.5° | 4076.9 | 4086.9 | 4098.3 | 4118.2 | 4085.4 | 3992.9 | 3775.1 | 3396.5 | 2898.2 | 2824.2 | 2210.7 |
| 15° | 4304.7 | 4307.5 | 4350.2 | 4427.1 | 4454.1 | 4405.7 | 4207.9 | 3783.7 | 3239.9 | 3175.8 | 2459.8 |
| 17.5° | 4373.0 | 4378.7 | 4451.3 | 4592.2 | 4734.6 | 4761.6 | 4612.1 | 4173.7 | 3575.8 | 3507.5 | 2701.8 |
| 20° | 4516.8 | 4529.6 | 4583.7 | 4707.5 | 4886.9 | 5032.1 | 4973.7 | 4568.0 | 3911.8 | 3822.1 | 2949.5 |
| 22.5° | 4969.4 | 4976.6 | 4958.0 | 4973.7 | 5066.2 | 5234.2 | 5269.8 | 4949.5 | 4256.3 | 4160.9 | 3217.1 |
| 25° | 5748.1 | 5750.9 | 5621.4 | 5499.0 | 5429.2 | 5460.5 | 5538.8 | 5301.1 | 4597.9 | 4504.0 | 3466.2 |
| 27.5° | 6556.6 | 6566.6 | 6411.4 | 6203.6 | 5954.5 | 5812.1 | 5789.4 | 5622.8 | 4942.4 | 4838.5 | 3712.5 |
| 30° | 7318.2 | 7318.2 | 7154.5 | 6901.1 | 6568.0 | 6290.4 | 6126.7 | 5947.4 | 5311.1 | 5197.2 | 3964.4 |
| 32.5° | 8002.9 | 7997.2 | 7788.0 | 7513.2 | 7184.4 | 6879.8 | 6535.3 | 6286.2 | 5721.0 | 5594.4 | 4254.8 |
| 35° | 8568.0 | 8553.8 | 8316.1 | 8052.7 | 7701.1 | 7474.8 | 7090.5 | 6650.6 | 6165.2 | 6038.5 | 4553.8 |
| 37.5° | 8995.1 | 8979.4 | 8761.6 | 8482.6 | 8156.7 | 8010.0 | 7688.3 | 7087.6 | 6633.5 | 6518.2 | 4885.4 |
| 40° | 9227.1 | 9195.8 | 9044.9 | 8837.1 | 8563.8 | 8435.7 | 8301.8 | 7630.0 | 7184.4 | 7040.6 | 5276.9 |
| 42.5° | 9295.5 | 9258.4 | 9158.8 | 9062.0 | 8896.9 | 8795.8 | 8939.6 | 8242.1 | 7789.4 | 7665.5 | 5723.9 |
| 45° | 9093.3 | 9072.0 | 9063.4 | 9133.2 | 9163.1 | 9191.5 | 9546.0 | 8919.6 | 8457.0 | 8363.1 | 6286.2 |
| 47.5° | 8606.5 | 8600.8 | 8676.2 | 8966.6 | 9282.6 | 9583.0 | 10205.1 | 9755.2 | 9322.5 | 9221.4 | 7071.9 |
| 50° | 7706.8 | 7765.2 | 7975.9 | 8485.5 | 9117.5 | 9805.1 | 10821.4 | 10914.0 | 10723.2 | 10575.2 | 8096.9 |
| 52.5° | 6300.4 | 6412.9 | 6885.5 | 7659.9 | 8568.0 | 9742.4 | 11106.1 | 11842.1 | 12037.1 | 11883.4 | 8831.4 |
| 55° | 4943.8 | 5049.2 | 5470.5 | 6452.7 | 7664.1 | 9265.6 | 11119.0 | 12162.4 | 12588.0 | 12445.7 | 9328.2 |
| 57.5° | 3682.6 | 3779.4 | 4162.3 | 5101.8 | 6434.2 | 8327.5 | 10814.3 | 12340.3 | 13241.4 | 13150.3 | 10112.5 |
| 60° | 2407.1 | 2502.5 | 2848.4 | 3669.8 | 4990.8 | 6960.9 | 10064.1 | 12303.3 | 14131.1 | 14122.5 | 11076.2 |
| 62.5° | 1335.2 | 1410.7 | 1661.2 | 2301.8 | 3483.3 | 5390.8 | 8885.5 | 11931.8 | 14992.3 | 15046.4 | 11870.6 |
| 65° | 683.3 | 731.7 | 884.0 | 1265.5 | 2108.2 | 3822.1 | 7335.3 | 11080.5 | 15390.9 | 15527.5 | 12079.8 |
| 67.5° | 447.0 | 462.6 | 499.6 | 657.7 | 1128.8 | 2404.3 | 5520.3 | 9715.4 | 14830.0 | 14989.4 | 11378.0 |
| 70° | 363.0 | 375.8 | 397.2 | 438.4 | 582.2 | 1276.9 | 3625.7 | 7759.5 | 12391.6 | 12499.7 | 9060.6 |
| 72.5° | 266.2 | 283.3 | 324.6 | 351.6 | 419.9 | 700.4 | 1886.1 | 5093.3 | 8509.7 | 8700.4 | 5694.0 |
| 75° | 196.4 | 206.4 | 240.6 | 277.6 | 343.1 | 442.7 | 721.7 | 2677.6 | 4394.3 | 4283.3 | 2391.5 |
| 77.5° | 118.2 | 125.3 | 153.7 | 177.9 | 244.8 | 276.2 | 252.0 | 989.3 | 1336.7 | 1256.9 | 577.9 |
| 80° | 58.4 | 65.5 | 101.1 | 133.8 | 156.6 | 111.0 | 105.3 | 276.2 | 297.5 | 297.5 | 145.2 |
| 82.5° | 19.9 | 25.6 | 54.1 | 88.3 | 76.9 | 42.7 | 49.8 | 71.2 | 79.7 | 84.0 | 42.7 |
| 85° | 0.0 | 0.0 | 12.8 | 25.6 | 11.4 | 5.7 | 12.8 | 15.7 | 19.9 | 21.4 | 14.2 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 4.3 | 5.7 | 5.7 |
| 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-SA4C-750-U-T2R-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 | 1417.8 |
| 2.5° | 1454.8 | 1387.9 | 1286.8 | 1195.7 | 1126.0 | 1060.5 | 1010.7 | 970.8 | 963.7 | 940.9 | 943.8 |
| 5° | 1520.3 | 1399.3 | 1212.8 | 1069.0 | 968.0 | 899.7 | 842.7 | 800.0 | 781.5 | 763.0 | 748.8 |
| 7.5° | 1621.4 | 1446.3 | 1184.4 | 1009.3 | 891.1 | 785.8 | 697.5 | 626.3 | 592.2 | 570.8 | 556.6 |
| 10° | 1745.2 | 1511.8 | 1185.8 | 973.7 | 798.6 | 637.7 | 516.7 | 438.4 | 401.4 | 390.0 | 388.6 |
| 12.5° | 1893.3 | 1594.3 | 1197.2 | 915.3 | 664.8 | 474.0 | 382.9 | 347.3 | 335.9 | 326.0 | 326.0 |
| 15° | 2049.8 | 1686.8 | 1197.2 | 808.5 | 506.8 | 370.1 | 331.7 | 308.9 | 294.7 | 289.0 | 286.1 |
| 17.5° | 2215.0 | 1773.7 | 1168.7 | 661.9 | 388.6 | 326.0 | 294.7 | 273.3 | 261.9 | 253.4 | 250.5 |
| 20° | 2391.5 | 1856.2 | 1097.5 | 506.8 | 333.1 | 291.8 | 261.9 | 240.6 | 229.2 | 220.6 | 220.6 |
| 22.5° | 2570.8 | 1933.1 | 982.2 | 390.0 | 294.7 | 259.1 | 230.6 | 210.7 | 199.3 | 190.7 | 190.7 |
| 25° | 2737.4 | 1984.4 | 834.2 | 321.7 | 266.2 | 230.6 | 205.0 | 185.1 | 172.2 | 166.5 | 163.7 |
| 27.5° | 2892.6 | 2017.1 | 670.5 | 283.3 | 239.1 | 206.4 | 179.4 | 160.9 | 150.9 | 146.6 | 143.8 |
| 30° | 3053.4 | 2025.6 | 512.5 | 257.7 | 216.4 | 182.2 | 156.6 | 142.3 | 133.8 | 128.1 | 128.1 |
| 32.5° | 3210.0 | 2015.7 | 391.5 | 236.3 | 196.4 | 160.9 | 139.5 | 126.7 | 119.6 | 115.3 | 113.9 |
| 35° | 3369.4 | 1970.1 | 317.4 | 217.8 | 176.5 | 140.9 | 123.8 | 113.9 | 109.6 | 103.9 | 103.9 |
| 37.5° | 3543.1 | 1908.9 | 276.2 | 199.3 | 156.6 | 126.7 | 111.0 | 103.9 | 98.2 | 94.0 | 92.5 |
| 40° | 3759.5 | 1837.7 | 253.4 | 183.6 | 138.1 | 113.9 | 99.6 | 92.5 | 88.3 | 84.0 | 82.6 |
| 42.5° | 4015.7 | 1768.0 | 242.0 | 166.5 | 123.8 | 101.1 | 89.7 | 81.1 | 76.9 | 71.2 | 69.8 |
| 45° | 4378.7 | 1752.3 | 229.2 | 148.0 | 111.0 | 91.1 | 78.3 | 69.8 | 64.1 | 59.8 | 58.4 |
| 47.5° | 4962.3 | 1796.5 | 207.8 | 128.1 | 98.2 | 79.7 | 66.9 | 59.8 | 52.7 | 48.4 | 45.6 |
| 50° | 5541.7 | 1785.1 | 186.5 | 111.0 | 86.8 | 68.3 | 56.9 | 49.8 | 42.7 | 38.4 | 37.0 |
| 52.5° | 5857.7 | 1731.0 | 166.5 | 98.2 | 75.4 | 58.4 | 48.4 | 39.9 | 35.6 | 31.3 | 29.9 |
| 55° | 6143.8 | 1709.6 | 146.6 | 85.4 | 64.1 | 51.2 | 39.9 | 32.7 | 29.9 | 25.6 | 24.2 |
| 57.5° | 6704.7 | 1759.4 | 129.5 | 74.0 | 55.5 | 44.1 | 34.2 | 27.0 | 24.2 | 19.9 | 18.5 |
| 60° | 7291.2 | 1765.1 | 111.0 | 64.1 | 48.4 | 37.0 | 27.0 | 21.4 | 18.5 | 14.2 | 12.8 |
| 62.5° | 7597.2 | 1621.4 | 91.1 | 54.1 | 39.9 | 31.3 | 22.8 | 17.1 | 14.2 | 8.5 | 8.5 |
| 65° | 7341.0 | 1311.0 | 76.9 | 44.1 | 31.3 | 24.2 | 17.1 | 12.8 | 8.5 | 4.3 | 1.4 |
| 67.5° | 6496.9 | 932.4 | 64.1 | 35.6 | 22.8 | 17.1 | 12.8 | 8.5 | 1.4 | 0.0 | 0.0 |
| 70° | 4757.3 | 532.4 | 49.8 | 25.6 | 17.1 | 11.4 | 8.5 | 4.3 | 0.0 | 0.0 | 0.0 |
| 72.5° | 2923.9 | 284.7 | 37.0 | 17.1 | 12.8 | 8.5 | 7.1 | 2.8 | 0.0 | 0.0 | 0.0 |
| 75° | 1108.9 | 136.7 | 22.8 | 11.4 | 10.0 | 7.1 | 4.3 | 1.4 | 0.0 | 0.0 | 0.0 |
| 77.5° | 300.4 | 66.9 | 12.8 | 8.5 | 7.1 | 4.3 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 78.3 | 31.3 | 8.5 | 5.7 | 4.3 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 27.0 | 14.2 | 4.3 | 4.3 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 11.4 | 5.7 | 2.8 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 4.3 | 1.4 | 1.4 | 1.4 | 1.4 | 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 |

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: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-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-750-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 4884
 CIE u': 0.2101
 CIE v': 0.4904
 Duv: 0.0037
 CIE x: 0.3493
 CIE y: 0.3624
 CIE z: 0.2884
 Peak Wavelength (nm): 444
 Dominant Wavelength (nm): 571
 Purity: 13.7
 Rf: 74.9
 Rg: 96.3

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.5 | | |
| R1: | 70.5 | R9: | -28.4 |
| R2: | 77.7 | R10: | 48.6 |
| R3: | 84.6 | R11: | 73.2 |
| R4: | 74.7 | R12: | 50.7 |
| R5: | 71.9 | R13: | 71.2 |
| R6: | 70.7 | R14: | 91.4 |
| R7: | 81.2 | | |
| R8: | 56.9 | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-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: SP1-1908-441-4-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-R4

Photopic Flux vs. Wavelength

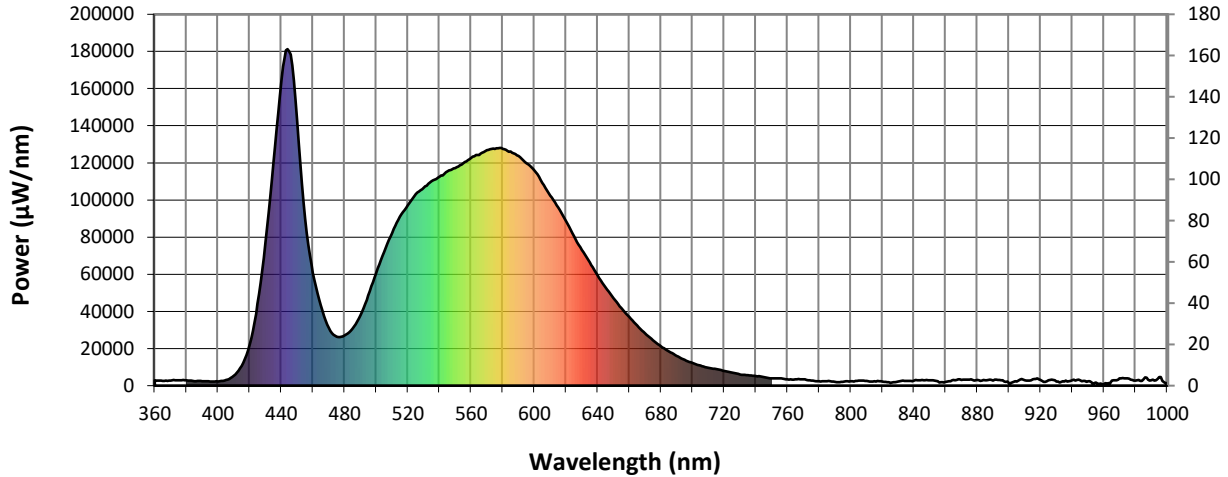


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| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9

M/P: 0.71

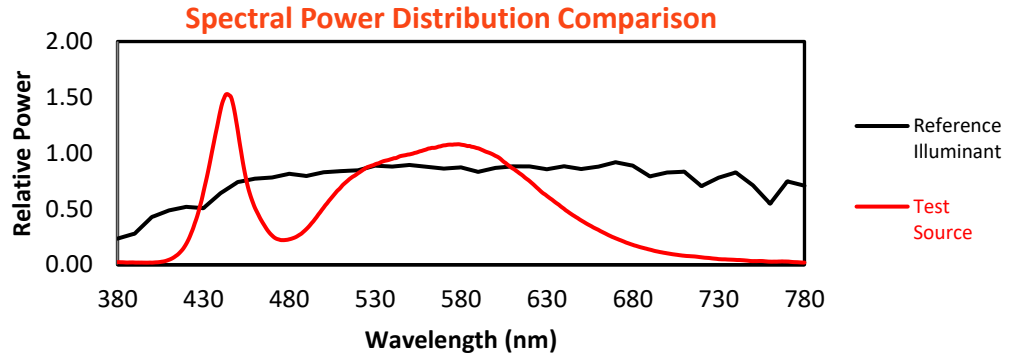
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

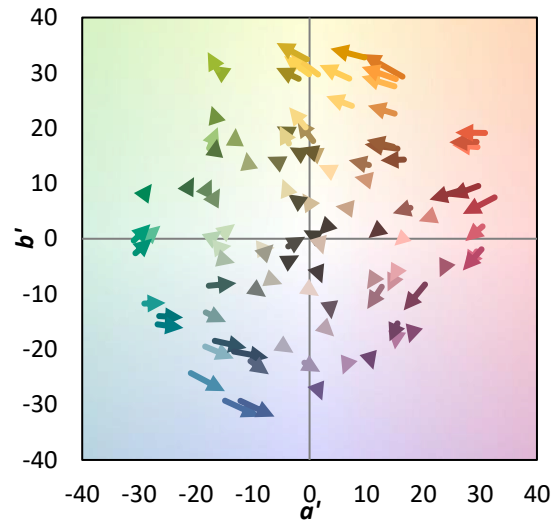
TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-4-R4

TM-30-18

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

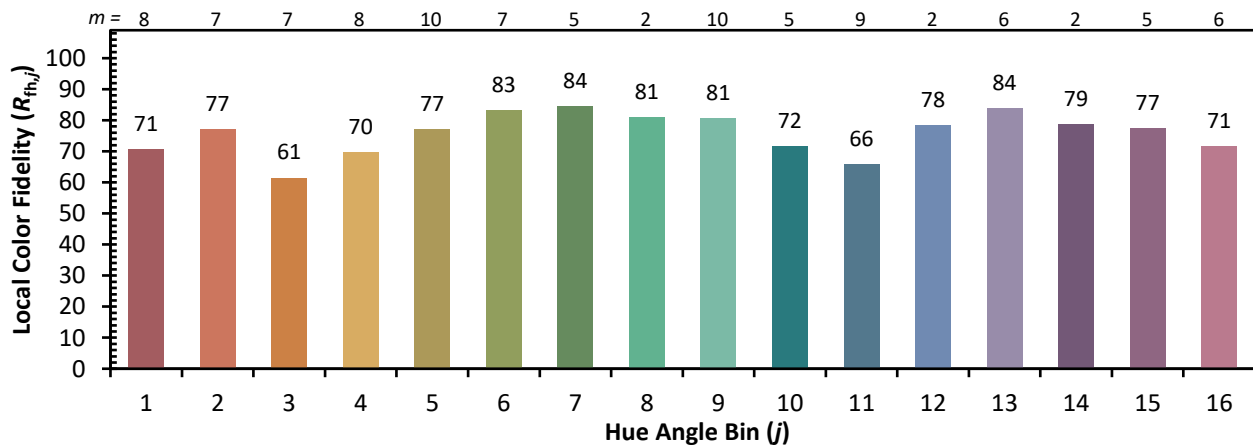
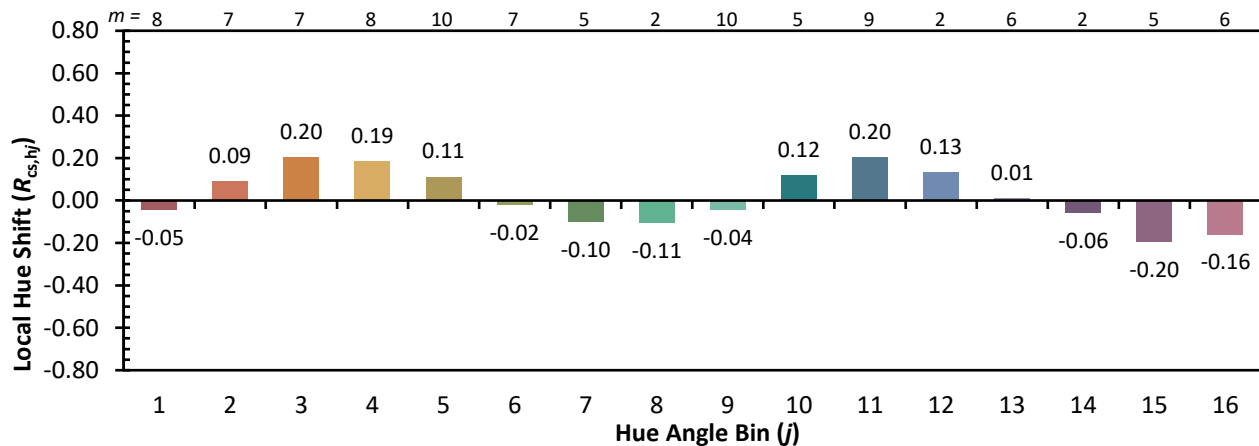
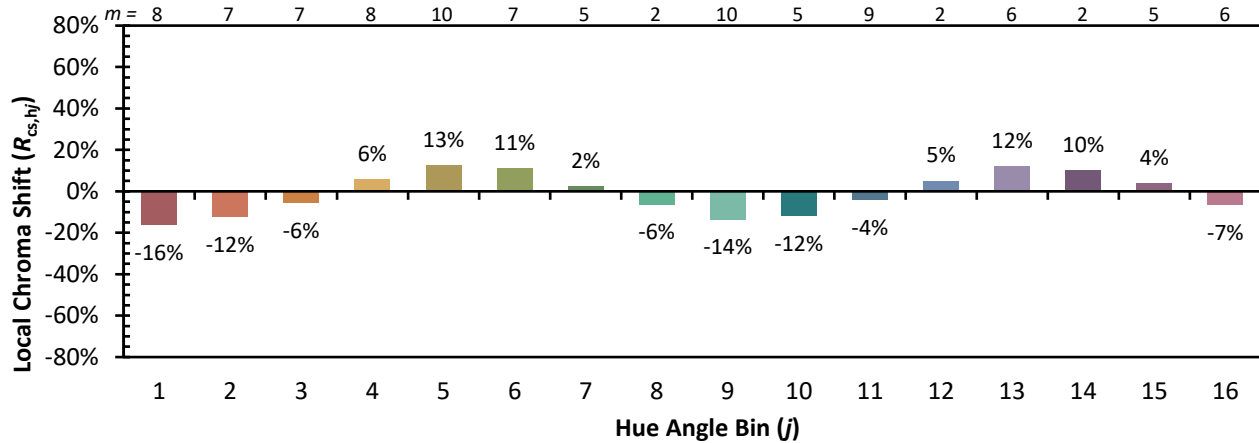
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



REPORT NUMBER: SP1-1908-441-4-R4

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-1908-441-4-R4

TM-30-18

Measure Comparisons



(END OF REPORT)