

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: P630410

Luminaire Tested: GWS-SA1D-750-U-T2R-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P630410
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-11)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1D-750-U-T2R-W
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: (16) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6324.8 lumens
Efficiency: N/A
Efficacy: 142.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G1

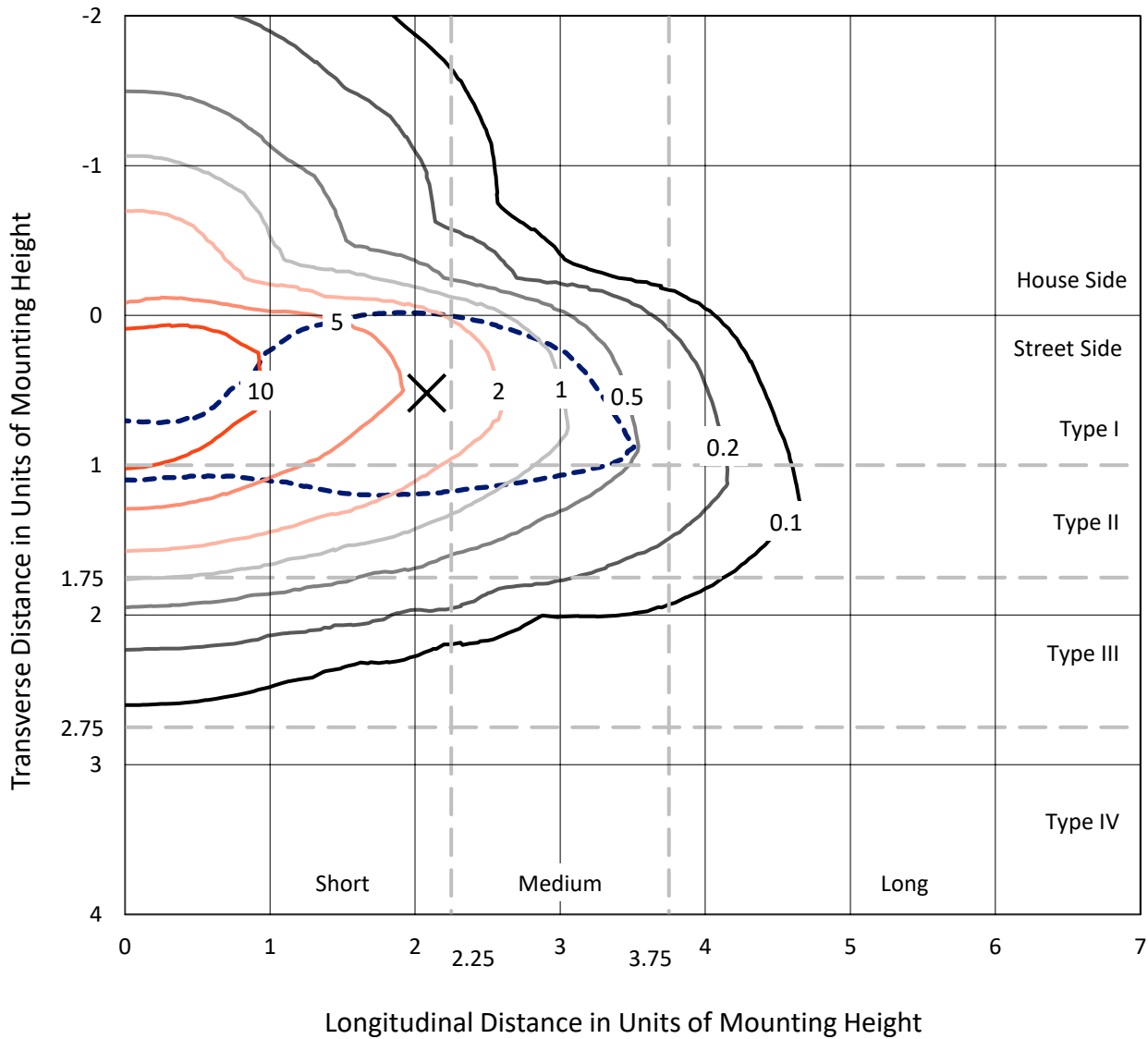
Input Watts (W): 44.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P630410
 CATALOG NUMBER: GWS-SA1D-750-U-T2R-W

Iso-Footcandle Lines of Horizontal Illumination

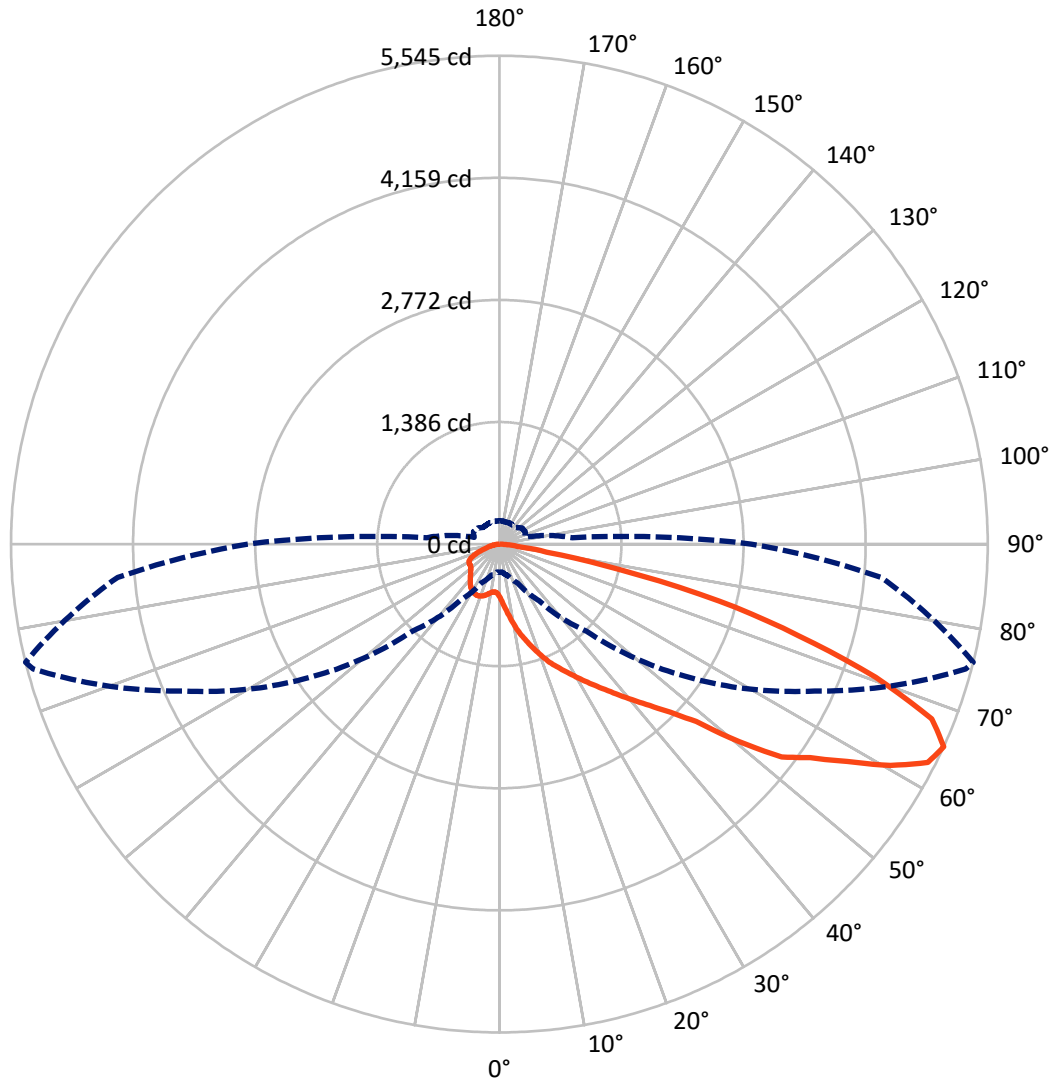
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 15.6 fc
 Type II - Short - N/A

REPORT NUMBER: P630410
CATALOG NUMBER: GWS-SA1D-750-U-T2R-W

Luminous Intensity Polar Plot



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

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CATALOG NUMBER: GWS-SA1D-750-U-T2R-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1057.2 | 0.0 | 1057.2 |
| | % Fixture | 16.7 | 0.0 | 16.7 |
| Street Side | Lumens | 5267.6 | 0.0 | 5267.6 |
| | % Fixture | 83.3 | 0.0 | 83.3 |
| Total | Lumens | 6324.8 | 0.0 | 6324.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 71.2 | 1.1 |
| 10°-20° | 271.0 | 4.3 |
| 20°-30° | 528.2 | 8.4 |
| 30°-40° | 883.4 | 14.0 |
| 40°-50° | 1264.8 | 20.0 |
| 50°-60° | 1497.4 | 23.7 |
| 60°-70° | 1245.1 | 19.7 |
| 70°-80° | 509.5 | 8.1 |
| 80°-90° | 54.2 | 0.9 |
| 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° | 6324.8 | 100.0 |
| 0°-180° | 6324.8 | 100.0 |

Coefficient of Utilization



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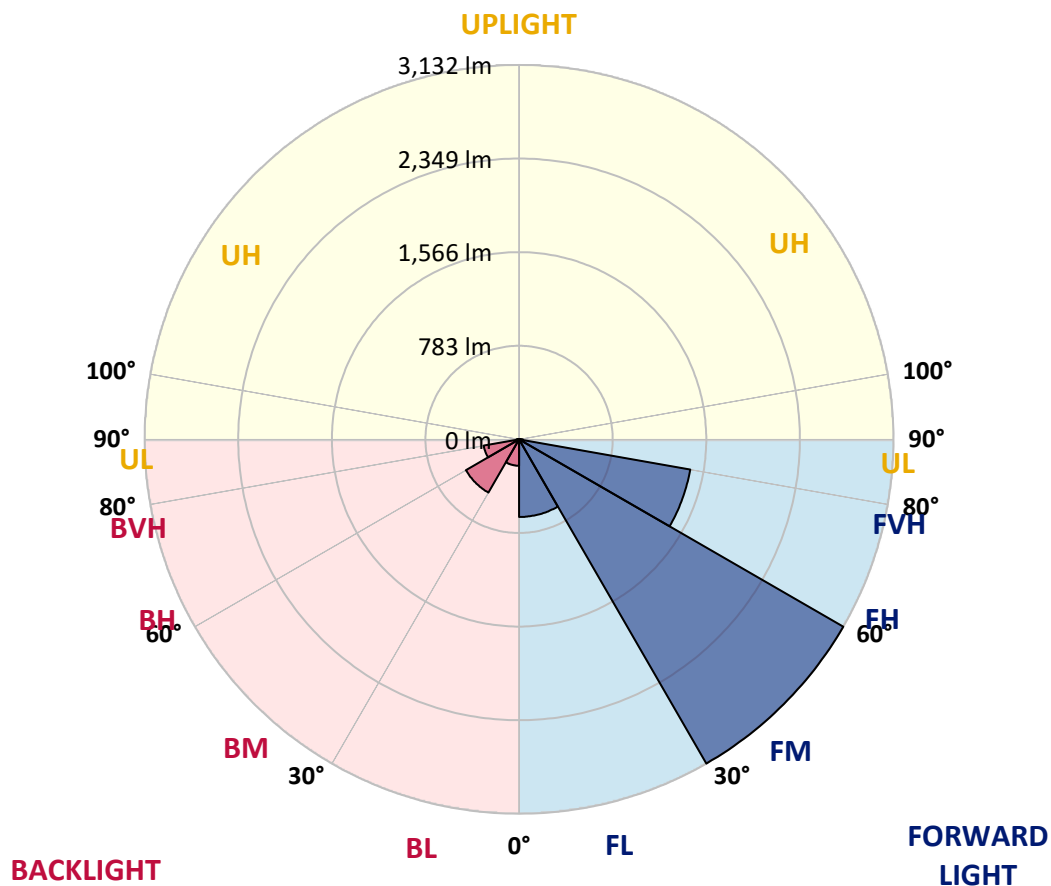
CATALOG NUMBER: GWS-SA1D-750-U-T2R-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 649.2 | 10.3 | | | |
| FM (30°-60°) | 3131.8 | 49.5 | | | |
| FH (60°-80°) | 1454.2 | 23.0 | | | G1/1800 |
| FVH (80°-90°) | 32.4 | 0.5 | | | G1/100 |
| BL (0°-30°) | 221.2 | 3.5 | B1/500 | | |
| BM (30°-60°) | 513.8 | 8.1 | B1/1000 | | |
| BH (60°-80°) | 300.4 | 4.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 21.9 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 |
| 2.5° | 839.5 | 842.6 | 832.4 | 828.8 | 804.8 | 772.3 | 745.2 | 704.3 | 666.5 | 660.7 | 626.9 |
| 5° | 1066.3 | 1052.9 | 1041.4 | 1033.8 | 1000.4 | 963.5 | 906.2 | 829.3 | 748.8 | 739.0 | 666.1 |
| 7.5° | 1201.0 | 1198.8 | 1184.5 | 1180.1 | 1154.3 | 1117.4 | 1058.3 | 962.7 | 845.7 | 829.7 | 719.0 |
| 10° | 1309.0 | 1307.7 | 1300.6 | 1304.6 | 1281.0 | 1245.0 | 1187.6 | 1088.9 | 952.0 | 936.0 | 778.1 |
| 12.5° | 1403.3 | 1405.5 | 1404.2 | 1418.9 | 1406.9 | 1378.8 | 1319.3 | 1210.8 | 1058.3 | 1040.9 | 850.2 |
| 15° | 1472.2 | 1474.0 | 1480.7 | 1512.7 | 1519.3 | 1513.6 | 1453.1 | 1330.4 | 1163.2 | 1138.3 | 924.4 |
| 17.5° | 1491.8 | 1495.3 | 1511.3 | 1562.9 | 1598.9 | 1622.9 | 1578.0 | 1452.2 | 1266.3 | 1239.2 | 1000.0 |
| 20° | 1518.0 | 1522.0 | 1538.0 | 1591.8 | 1644.7 | 1699.4 | 1691.4 | 1575.8 | 1370.4 | 1348.2 | 1076.5 |
| 22.5° | 1639.4 | 1636.3 | 1629.2 | 1655.0 | 1692.8 | 1760.8 | 1780.8 | 1694.5 | 1478.0 | 1456.7 | 1161.0 |
| 25° | 1873.3 | 1867.5 | 1822.2 | 1798.6 | 1786.1 | 1827.5 | 1863.1 | 1802.6 | 1582.9 | 1550.9 | 1239.7 |
| 27.5° | 2131.2 | 2128.1 | 2070.3 | 2014.2 | 1937.8 | 1920.0 | 1940.9 | 1896.9 | 1684.8 | 1652.3 | 1308.1 |
| 30° | 2375.3 | 2365.9 | 2305.5 | 2235.2 | 2133.0 | 2056.5 | 2025.8 | 1989.3 | 1796.4 | 1762.6 | 1388.2 |
| 32.5° | 2593.6 | 2581.6 | 2510.5 | 2432.6 | 2325.5 | 2235.2 | 2143.6 | 2087.6 | 1922.6 | 1883.5 | 1470.0 |
| 35° | 2772.8 | 2760.8 | 2687.9 | 2605.2 | 2487.3 | 2420.6 | 2295.3 | 2194.3 | 2051.1 | 2011.6 | 1566.5 |
| 37.5° | 2911.5 | 2900.4 | 2824.4 | 2743.0 | 2640.3 | 2587.4 | 2478.4 | 2314.4 | 2199.2 | 2157.9 | 1668.7 |
| 40° | 2989.3 | 2981.3 | 2920.4 | 2855.9 | 2769.7 | 2723.9 | 2675.0 | 2466.0 | 2365.1 | 2323.7 | 1789.2 |
| 42.5° | 3012.9 | 3007.6 | 2964.9 | 2931.5 | 2873.3 | 2838.6 | 2866.6 | 2644.3 | 2542.0 | 2506.0 | 1924.9 |
| 45° | 2953.8 | 2953.8 | 2941.3 | 2958.2 | 2960.9 | 2960.4 | 3058.7 | 2845.7 | 2759.5 | 2719.9 | 2116.1 |
| 47.5° | 2802.6 | 2812.4 | 2830.6 | 2913.8 | 3001.3 | 3074.7 | 3283.2 | 3114.3 | 3039.1 | 3006.7 | 2386.8 |
| 50° | 2526.0 | 2552.7 | 2615.0 | 2777.2 | 2963.6 | 3150.3 | 3495.8 | 3511.4 | 3582.9 | 3525.6 | 2785.2 |
| 52.5° | 2121.0 | 2116.9 | 2275.7 | 2506.9 | 2791.0 | 3153.4 | 3612.7 | 3861.7 | 4054.3 | 4014.7 | 3081.4 |
| 55° | 1685.6 | 1679.0 | 1827.0 | 2145.9 | 2526.5 | 3034.2 | 3683.0 | 4022.2 | 4315.7 | 4280.1 | 3347.7 |
| 57.5° | 1290.8 | 1282.4 | 1414.0 | 1701.7 | 2153.0 | 2781.2 | 3669.6 | 4213.4 | 4675.4 | 4657.2 | 3709.7 |
| 60° | 888.4 | 878.2 | 1001.3 | 1253.0 | 1711.0 | 2394.4 | 3522.0 | 4311.7 | 5096.5 | 5102.7 | 4096.9 |
| 62.5° | 533.6 | 527.8 | 617.2 | 812.4 | 1230.8 | 1915.1 | 3176.5 | 4252.1 | 5431.8 | 5459.8 | 4345.9 |
| 65° | 321.9 | 317.9 | 370.4 | 484.7 | 780.8 | 1397.5 | 2643.9 | 3947.5 | 5480.2 | 5544.7 | 4351.7 |
| 67.5° | 234.3 | 234.8 | 249.9 | 295.2 | 455.3 | 902.6 | 1984.0 | 3401.5 | 5227.7 | 5294.4 | 4077.4 |
| 70° | 203.6 | 204.5 | 212.5 | 222.8 | 275.2 | 516.7 | 1289.9 | 2685.2 | 4481.1 | 4532.7 | 3419.8 |
| 72.5° | 181.0 | 181.0 | 186.3 | 191.6 | 215.2 | 314.8 | 691.0 | 1876.8 | 3536.7 | 3550.5 | 2610.1 |
| 75° | 159.2 | 157.8 | 160.5 | 163.2 | 186.8 | 220.1 | 336.2 | 1307.7 | 2612.3 | 2580.3 | 1687.0 |
| 77.5° | 126.7 | 125.4 | 125.8 | 128.5 | 149.8 | 157.4 | 170.3 | 816.8 | 1472.2 | 1389.5 | 745.2 |
| 80° | 90.3 | 89.4 | 94.3 | 100.9 | 110.7 | 96.5 | 106.7 | 395.3 | 583.8 | 543.4 | 289.0 |
| 82.5° | 53.8 | 55.6 | 63.1 | 68.5 | 76.5 | 60.5 | 68.9 | 132.1 | 206.8 | 201.4 | 117.4 |
| 85° | 7.6 | 8.0 | 22.7 | 26.2 | 32.9 | 23.6 | 36.5 | 59.6 | 82.7 | 88.5 | 41.4 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 10.7 | 23.6 | 24.0 | 10.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P630410
 CATALOG NUMBER: GWS-SA1D-750-U-T2R-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 | 598.9 |
| 2.5° | 609.6 | 588.7 | 558.9 | 534.0 | 513.1 | 496.2 | 482.0 | 471.3 | 468.2 | 463.8 | 463.8 |
| 5° | 631.8 | 594.0 | 540.7 | 502.9 | 481.1 | 468.2 | 459.3 | 454.9 | 452.6 | 450.0 | 448.6 |
| 7.5° | 662.5 | 609.6 | 537.6 | 499.3 | 482.4 | 474.4 | 468.7 | 466.0 | 464.2 | 461.5 | 461.5 |
| 10° | 704.8 | 632.7 | 547.4 | 511.8 | 498.4 | 490.4 | 483.8 | 479.3 | 475.3 | 471.3 | 470.4 |
| 12.5° | 750.6 | 663.0 | 565.1 | 528.7 | 514.5 | 504.7 | 495.3 | 488.7 | 483.8 | 478.9 | 477.5 |
| 15° | 801.2 | 694.1 | 584.3 | 545.1 | 527.3 | 514.0 | 502.9 | 492.7 | 486.0 | 478.9 | 478.0 |
| 17.5° | 851.0 | 725.7 | 600.3 | 556.2 | 533.6 | 517.1 | 501.1 | 487.8 | 479.3 | 471.3 | 469.1 |
| 20° | 910.6 | 757.2 | 611.4 | 559.4 | 532.2 | 510.5 | 491.3 | 474.4 | 465.1 | 455.8 | 454.4 |
| 22.5° | 965.3 | 786.6 | 616.7 | 554.9 | 522.0 | 496.2 | 474.0 | 455.8 | 445.5 | 436.2 | 434.4 |
| 25° | 1018.2 | 812.4 | 614.5 | 544.2 | 506.4 | 476.7 | 453.5 | 435.3 | 425.5 | 415.7 | 413.1 |
| 27.5° | 1069.4 | 829.7 | 605.6 | 527.8 | 486.9 | 454.9 | 432.6 | 416.2 | 407.7 | 399.3 | 395.7 |
| 30° | 1119.6 | 845.7 | 591.8 | 506.4 | 462.0 | 432.2 | 414.0 | 402.4 | 394.0 | 385.1 | 382.4 |
| 32.5° | 1170.3 | 857.3 | 570.9 | 481.5 | 436.6 | 412.2 | 401.1 | 392.6 | 383.7 | 374.8 | 372.2 |
| 35° | 1221.4 | 862.2 | 545.6 | 453.1 | 415.3 | 399.3 | 395.3 | 385.5 | 373.5 | 362.8 | 359.3 |
| 37.5° | 1282.4 | 866.6 | 514.0 | 425.1 | 396.6 | 393.1 | 392.2 | 377.5 | 363.3 | 348.6 | 344.6 |
| 40° | 1355.7 | 872.4 | 481.5 | 399.7 | 381.5 | 390.8 | 387.3 | 367.3 | 338.8 | 324.6 | 320.1 |
| 42.5° | 1445.5 | 883.1 | 447.8 | 376.6 | 370.4 | 382.4 | 378.4 | 342.4 | 323.3 | 315.3 | 313.0 |
| 45° | 1577.6 | 922.2 | 414.0 | 358.4 | 361.9 | 370.4 | 364.2 | 327.7 | 320.1 | 314.8 | 312.1 |
| 47.5° | 1812.8 | 982.2 | 384.6 | 344.6 | 355.3 | 359.7 | 335.7 | 323.7 | 317.9 | 310.8 | 307.7 |
| 50° | 2057.4 | 1008.5 | 361.1 | 336.2 | 347.7 | 349.9 | 320.1 | 318.4 | 314.4 | 306.8 | 303.7 |
| 52.5° | 2222.8 | 1004.9 | 346.8 | 333.0 | 341.5 | 333.0 | 313.0 | 312.6 | 309.9 | 301.0 | 297.5 |
| 55° | 2409.5 | 1011.1 | 340.6 | 333.9 | 338.8 | 304.6 | 304.1 | 305.5 | 304.1 | 294.4 | 292.6 |
| 57.5° | 2661.6 | 1030.2 | 337.5 | 337.0 | 337.0 | 290.8 | 295.7 | 297.5 | 294.8 | 290.4 | 289.0 |
| 60° | 2904.0 | 1031.6 | 331.7 | 340.6 | 335.7 | 282.3 | 285.9 | 287.7 | 284.6 | 283.7 | 283.2 |
| 62.5° | 2995.1 | 967.5 | 318.8 | 337.9 | 330.4 | 273.0 | 275.7 | 276.6 | 273.5 | 275.7 | 275.2 |
| 65° | 2859.5 | 831.5 | 297.5 | 325.0 | 313.9 | 264.6 | 262.8 | 265.0 | 259.7 | 265.5 | 265.9 |
| 67.5° | 2538.9 | 660.7 | 265.0 | 300.6 | 290.8 | 255.2 | 251.7 | 251.7 | 242.8 | 251.7 | 251.2 |
| 70° | 2047.1 | 466.9 | 217.4 | 261.5 | 265.5 | 244.1 | 242.3 | 232.1 | 217.9 | 231.2 | 229.9 |
| 72.5° | 1551.8 | 335.3 | 171.2 | 206.8 | 228.5 | 228.5 | 229.0 | 211.7 | 195.2 | 201.4 | 196.1 |
| 75° | 983.1 | 236.1 | 137.0 | 158.3 | 179.2 | 200.5 | 210.8 | 178.7 | 164.1 | 161.4 | 158.7 |
| 77.5° | 442.9 | 155.2 | 106.7 | 121.4 | 127.2 | 158.3 | 192.5 | 153.8 | 133.8 | 128.1 | 126.3 |
| 80° | 185.4 | 96.5 | 76.0 | 85.8 | 78.3 | 132.9 | 169.9 | 119.6 | 98.3 | 90.3 | 84.5 |
| 82.5° | 81.4 | 57.4 | 48.5 | 46.2 | 48.9 | 98.7 | 126.7 | 79.6 | 61.4 | 83.1 | 84.0 |
| 85° | 34.2 | 30.2 | 24.9 | 22.7 | 20.0 | 37.8 | 59.6 | 31.1 | 38.2 | 21.8 | 17.8 |
| 87.5° | 8.0 | 8.9 | 6.7 | 4.4 | 2.7 | 0.4 | 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 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



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 |

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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 5000K 4-step quadrangle

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

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Scotopic Flux vs. Wavelength

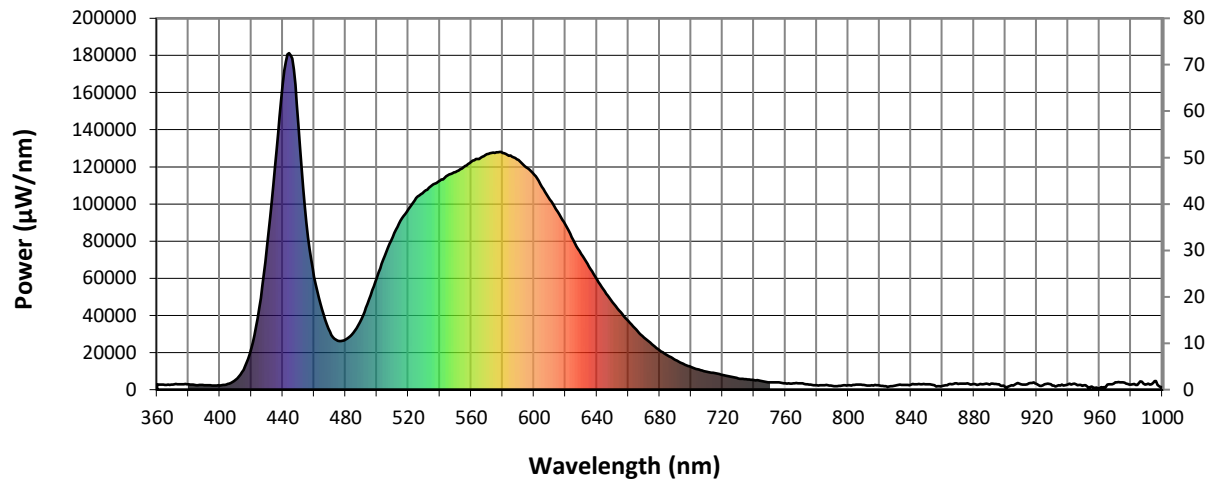


Scotopic Lumens: 13493.5 S/P: 1.77

| 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 | | | |

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Summary

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



Color Vector Graphics



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

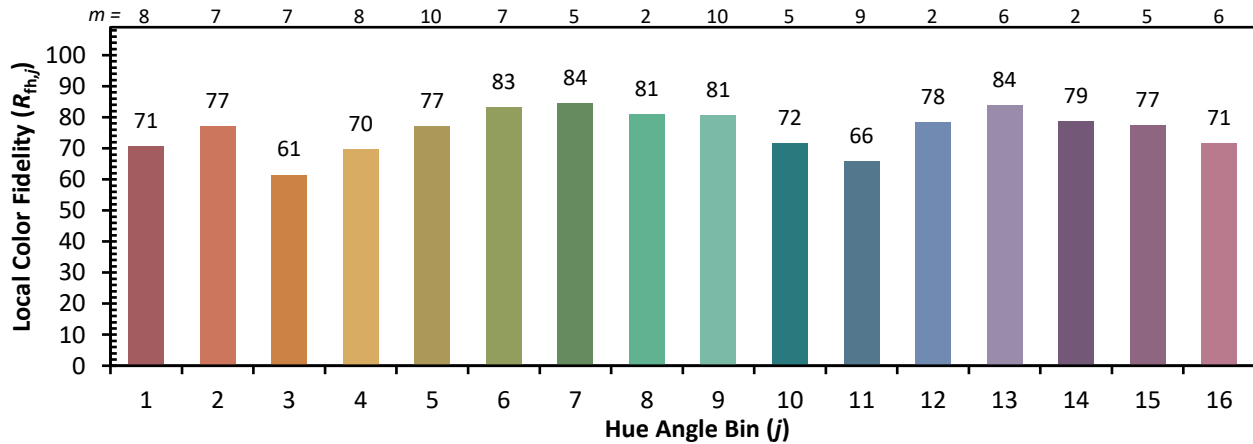
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 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 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)