

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: P636796

Luminaire Tested: GWS-SA4B-740-U-T3R-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P636796
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA4B-740-U-T3R-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (64) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12690.1 lumens
Efficiency: N/A
Efficacy: 134.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G2

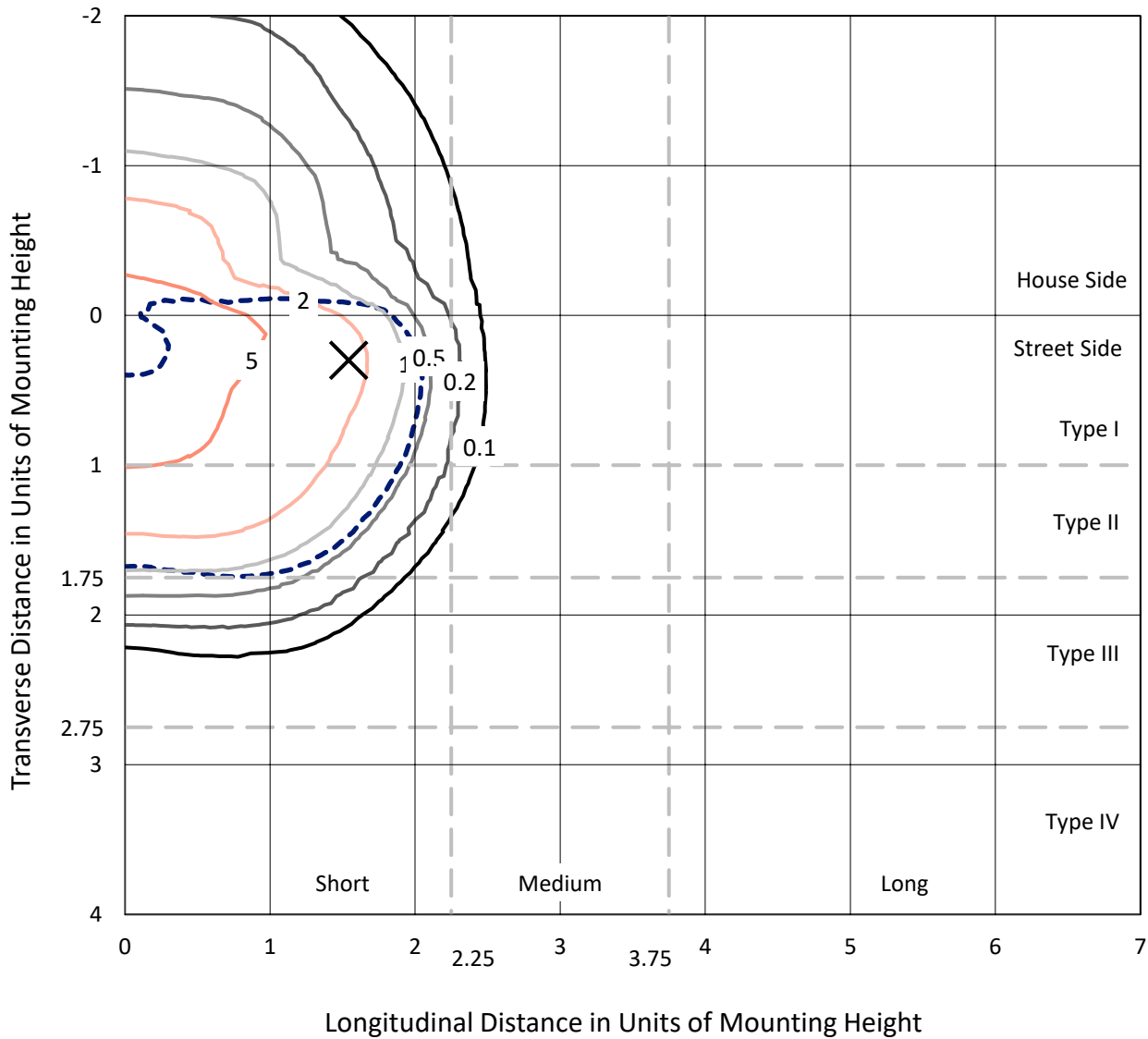
Input Watts (W): 94.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

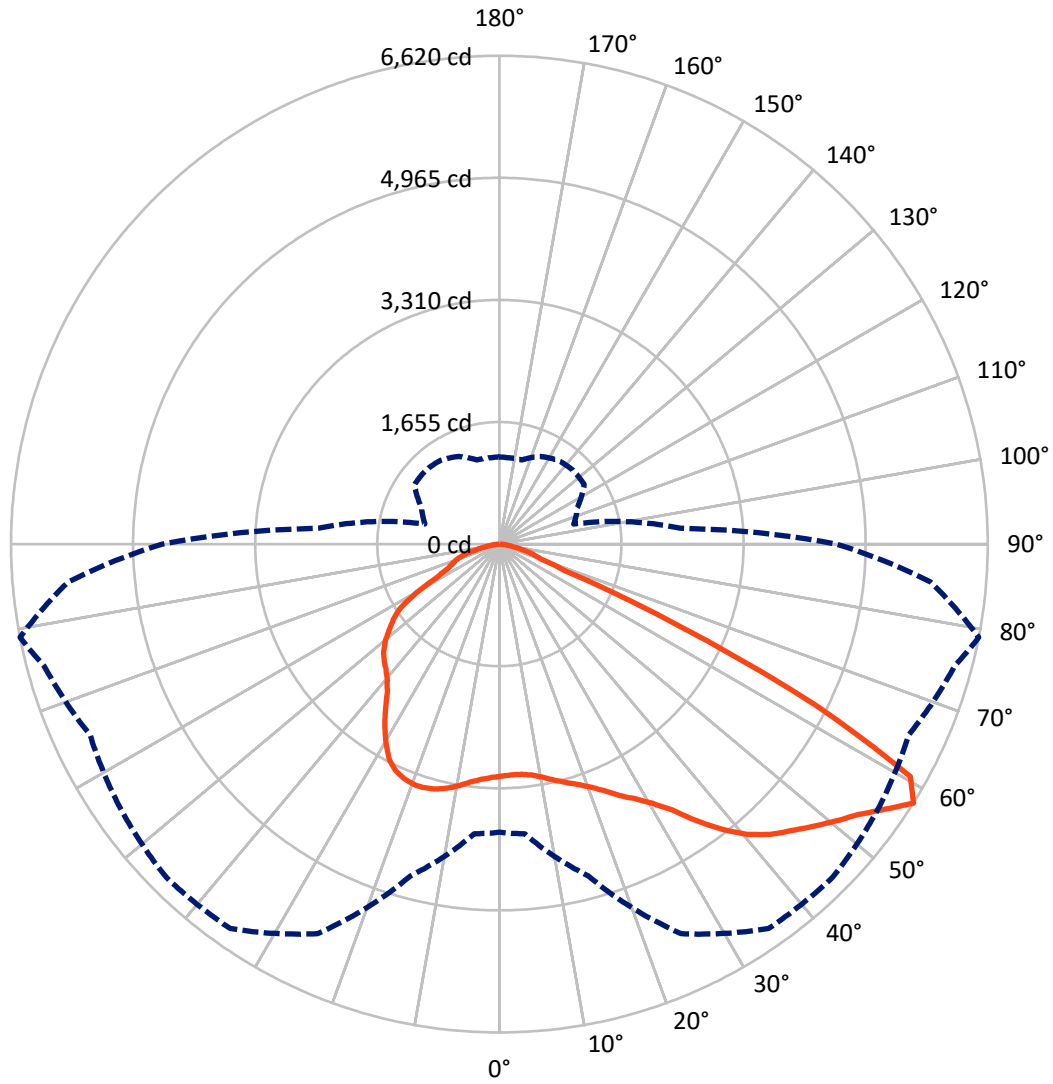
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.9 fc
 Type II - Short - N/A

REPORT NUMBER: P636796
CATALOG NUMBER: GWS-SA4B-740-U-T3R-W-GRSWH

Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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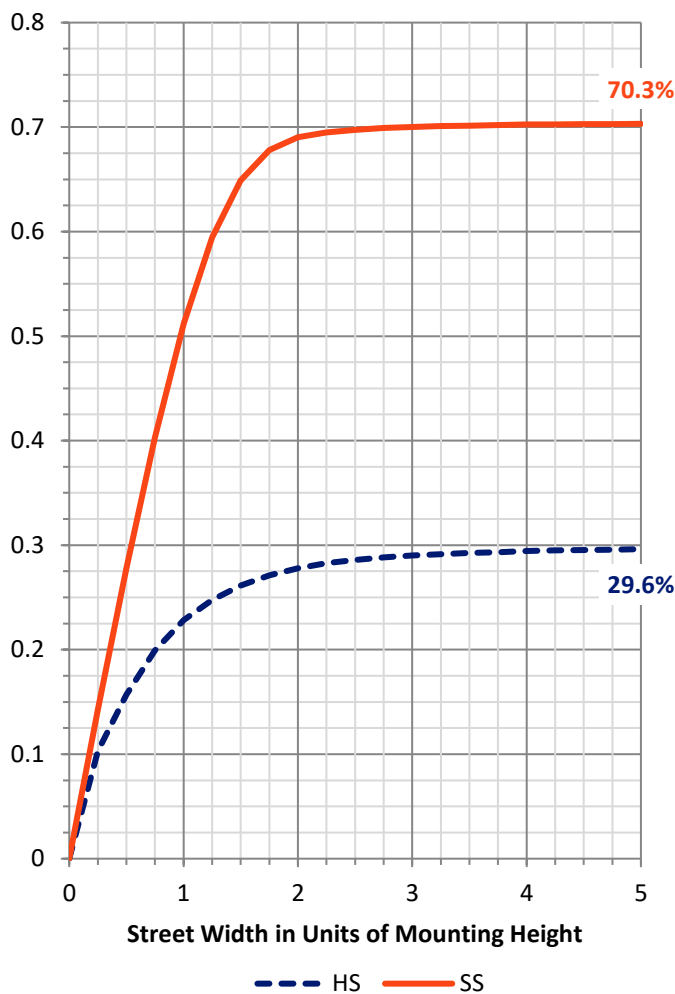
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3772.2 | 0.0 | 3772.2 |
| | % Fixture | 29.7 | 0.0 | 29.7 |
| Street Side | Lumens | 8917.9 | 0.0 | 8917.9 |
| | % Fixture | 70.3 | 0.0 | 70.3 |
| Total | Lumens | 12690.1 | 0.0 | 12690.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 291.2 | 2.3 |
| 10°-20° | 809.4 | 6.4 |
| 20°-30° | 1371.9 | 10.8 |
| 30°-40° | 2099.9 | 16.5 |
| 40°-50° | 2800.0 | 22.1 |
| 50°-60° | 3233.8 | 25.5 |
| 60°-70° | 1680.4 | 13.2 |
| 70°-80° | 357.2 | 2.8 |
| 80°-90° | 46.3 | 0.4 |
| 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° | 12690.1 | 100.0 |
| 0°-180° | 12690.1 | 100.0 |

Coefficient of Utilization



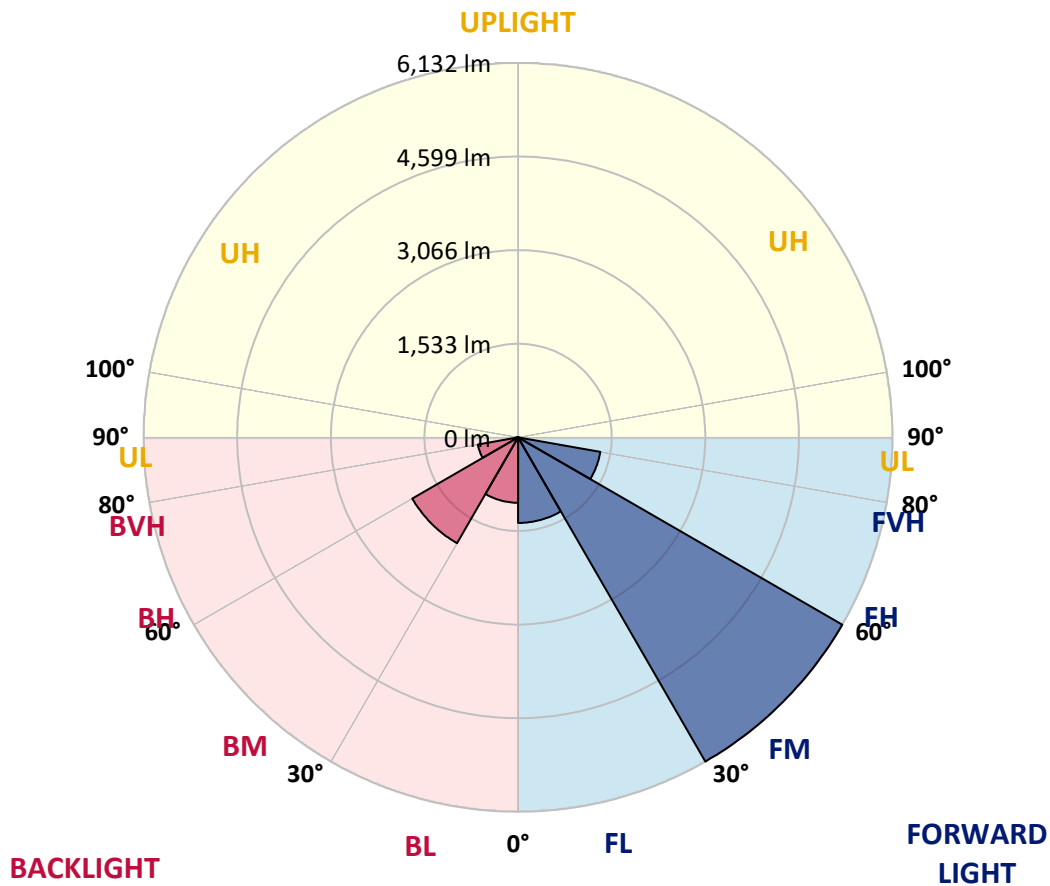
REPORT NUMBER: P636796

CATALOG NUMBER: GWS-SA4B-740-U-T3R-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1401.3 | 11.0 | | | |
| FM (30°-60°) | 6132.2 | 48.3 | | | |
| FH (60°-80°) | 1368.3 | 10.8 | | | G1/1800 |
| FVH (80°-90°) | 16.1 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1071.3 | 8.4 | B3/2500 | | |
| BM (30°-60°) | 2001.5 | 15.8 | B2/2500 | | |
| BH (60°-80°) | 669.3 | 5.3 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 30.1 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G2
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 |
| 2.5° | 3001.7 | 2995.5 | 2997.6 | 3005.9 | 3037.0 | 3059.8 | 3083.7 | 3105.5 | 3126.2 | 3132.4 | 3137.6 |
| 5° | 2894.8 | 2883.4 | 2886.5 | 2900.0 | 2936.3 | 2974.7 | 3017.3 | 3069.2 | 3119.0 | 3135.6 | 3157.4 |
| 7.5° | 2819.1 | 2817.0 | 2822.2 | 2843.0 | 2881.4 | 2917.7 | 2972.7 | 3046.3 | 3132.4 | 3160.5 | 3198.9 |
| 10° | 2718.5 | 2714.3 | 2735.1 | 2777.6 | 2840.9 | 2899.0 | 2964.4 | 3051.5 | 3171.9 | 3213.4 | 3272.5 |
| 12.5° | 2638.6 | 2636.5 | 2658.3 | 2717.4 | 2798.3 | 2890.7 | 2981.0 | 3078.5 | 3224.8 | 3281.9 | 3354.5 |
| 15° | 2685.3 | 2675.9 | 2677.0 | 2718.5 | 2791.1 | 2900.0 | 3022.5 | 3127.3 | 3277.7 | 3350.3 | 3443.7 |
| 17.5° | 2821.2 | 2804.6 | 2792.1 | 2799.4 | 2840.9 | 2954.0 | 3085.8 | 3192.6 | 3338.9 | 3424.0 | 3538.1 |
| 20° | 3009.0 | 2999.6 | 2965.4 | 2942.6 | 2951.9 | 3051.5 | 3185.4 | 3285.0 | 3418.8 | 3514.3 | 3636.7 |
| 22.5° | 3261.1 | 3238.3 | 3191.6 | 3155.3 | 3127.3 | 3205.1 | 3328.6 | 3414.7 | 3529.8 | 3629.4 | 3757.1 |
| 25° | 3573.4 | 3540.2 | 3466.5 | 3409.5 | 3349.3 | 3429.2 | 3539.2 | 3604.5 | 3682.4 | 3774.7 | 3896.1 |
| 27.5° | 3892.0 | 3863.9 | 3782.0 | 3705.2 | 3630.5 | 3680.3 | 3811.0 | 3848.4 | 3840.1 | 3907.5 | 4011.3 |
| 30° | 4231.2 | 4196.0 | 4118.1 | 4035.1 | 3938.6 | 3970.8 | 4088.1 | 4106.7 | 4018.5 | 4074.6 | 4145.1 |
| 32.5° | 4589.2 | 4555.0 | 4487.5 | 4391.0 | 4282.1 | 4294.5 | 4326.7 | 4344.3 | 4260.3 | 4292.5 | 4346.4 |
| 35° | 4953.4 | 4921.2 | 4852.8 | 4757.3 | 4677.4 | 4601.7 | 4520.7 | 4591.3 | 4542.5 | 4604.8 | 4600.6 |
| 37.5° | 5286.5 | 5254.3 | 5211.8 | 5138.1 | 5001.1 | 4851.7 | 4665.0 | 4752.1 | 4827.9 | 4906.7 | 4893.2 |
| 40° | 5511.6 | 5489.8 | 5500.2 | 5488.8 | 5312.4 | 5016.7 | 4735.5 | 4831.0 | 5037.4 | 5172.3 | 5165.1 |
| 42.5° | 5705.6 | 5683.9 | 5744.0 | 5787.6 | 5580.1 | 5169.2 | 4769.7 | 4861.1 | 5171.3 | 5381.9 | 5371.5 |
| 45° | 5791.8 | 5785.5 | 5885.1 | 6023.1 | 5825.0 | 5331.1 | 4857.9 | 4923.3 | 5273.0 | 5542.7 | 5503.3 |
| 47.5° | 5689.0 | 5710.8 | 5906.9 | 6140.4 | 6028.3 | 5523.0 | 5038.5 | 5055.1 | 5405.8 | 5717.1 | 5606.0 |
| 50° | 5484.6 | 5532.4 | 5797.0 | 6143.5 | 6176.7 | 5739.9 | 5288.5 | 5247.0 | 5584.2 | 5902.8 | 5660.0 |
| 52.5° | 5186.9 | 5236.7 | 5668.3 | 6119.6 | 6261.8 | 5991.0 | 5621.6 | 5562.5 | 5809.4 | 6088.5 | 5669.3 |
| 55° | 4503.1 | 4570.5 | 5373.6 | 6065.7 | 6344.8 | 6219.2 | 5997.2 | 5876.8 | 6099.9 | 6343.8 | 5761.7 |
| 57.5° | 3906.5 | 3941.8 | 4655.6 | 5826.0 | 6361.4 | 6387.3 | 6264.9 | 6121.7 | 6388.4 | 6619.8 | 5865.4 |
| 60° | 2866.8 | 2875.1 | 3517.4 | 4820.6 | 5851.9 | 6289.8 | 6243.1 | 6030.4 | 6251.4 | 6398.7 | 5390.2 |
| 62.5° | 1619.7 | 1620.7 | 2133.3 | 3217.5 | 4371.3 | 5126.7 | 5155.7 | 4967.9 | 4782.2 | 4825.8 | 3751.9 |
| 65° | 608.0 | 665.1 | 974.3 | 1581.3 | 2520.3 | 3026.6 | 3147.0 | 3190.6 | 2881.4 | 2689.4 | 2011.9 |
| 67.5° | 406.7 | 420.2 | 568.6 | 813.5 | 1121.6 | 1294.9 | 1448.5 | 1452.6 | 1062.5 | 947.3 | 792.7 |
| 70° | 310.2 | 323.7 | 447.2 | 582.1 | 568.6 | 525.0 | 567.6 | 552.0 | 570.7 | 586.2 | 602.8 |
| 72.5° | 231.4 | 244.9 | 346.6 | 410.9 | 341.4 | 336.2 | 380.8 | 423.3 | 462.8 | 479.4 | 505.3 |
| 75° | 153.6 | 163.9 | 233.5 | 220.0 | 188.8 | 223.1 | 278.1 | 320.6 | 343.4 | 363.2 | 382.9 |
| 77.5° | 97.5 | 104.8 | 124.5 | 100.6 | 104.8 | 130.7 | 161.9 | 200.3 | 222.0 | 241.8 | 252.1 |
| 80° | 44.6 | 43.6 | 42.5 | 47.7 | 59.1 | 76.8 | 97.5 | 120.4 | 137.0 | 145.3 | 151.5 |
| 82.5° | 17.6 | 19.7 | 21.8 | 25.9 | 32.2 | 41.5 | 55.0 | 70.6 | 84.0 | 86.1 | 91.3 |
| 85° | 7.3 | 8.3 | 9.3 | 11.4 | 14.5 | 18.7 | 22.8 | 32.2 | 40.5 | 43.6 | 46.7 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 2.1 | 3.1 | 5.2 | 9.3 | 10.4 | 11.4 |
| 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: P636796

CATALOG NUMBER: GWS-SA4B-740-U-T3R-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 | 3144.9 |
| 2.5° | 3165.7 | 3152.2 | 3175.0 | 3190.6 | 3205.1 | 3189.5 | 3184.3 | 3170.8 | 3168.8 | 3168.8 | 3176.0 |
| 5° | 3194.7 | 3185.4 | 3209.2 | 3218.6 | 3217.5 | 3183.3 | 3162.5 | 3135.6 | 3122.1 | 3122.1 | 3124.1 |
| 7.5° | 3246.6 | 3241.4 | 3254.9 | 3240.4 | 3207.2 | 3137.6 | 3069.2 | 3012.1 | 2973.7 | 2954.0 | 2960.2 |
| 10° | 3332.7 | 3326.5 | 3315.1 | 3261.1 | 3165.7 | 3021.4 | 2881.4 | 2777.6 | 2715.3 | 2680.1 | 2682.1 |
| 12.5° | 3416.7 | 3406.4 | 3365.9 | 3246.6 | 3050.5 | 2821.2 | 2637.5 | 2521.3 | 2452.8 | 2411.3 | 2402.0 |
| 15° | 3509.1 | 3482.1 | 3395.0 | 3171.9 | 2862.7 | 2576.3 | 2384.4 | 2258.8 | 2185.1 | 2160.2 | 2159.2 |
| 17.5° | 3597.3 | 3549.6 | 3391.8 | 3039.1 | 2637.5 | 2320.0 | 2127.0 | 2049.2 | 2036.8 | 2048.2 | 2051.3 |
| 20° | 3686.5 | 3609.7 | 3357.6 | 2855.4 | 2369.8 | 2064.8 | 1965.2 | 1997.3 | 2044.0 | 2075.2 | 2082.4 |
| 22.5° | 3778.9 | 3659.5 | 3279.8 | 2618.8 | 2087.6 | 1892.5 | 1934.0 | 2004.6 | 2062.7 | 2104.2 | 2108.4 |
| 25° | 3882.6 | 3706.2 | 3163.6 | 2329.4 | 1861.4 | 1844.8 | 1926.8 | 2001.5 | 2063.7 | 2111.5 | 2119.8 |
| 27.5° | 3941.8 | 3707.3 | 3000.7 | 2031.6 | 1757.7 | 1826.1 | 1909.1 | 1979.7 | 2042.0 | 2093.8 | 2103.2 |
| 30° | 3999.9 | 3679.3 | 2742.3 | 1789.8 | 1727.6 | 1804.3 | 1879.1 | 1944.4 | 2003.6 | 2054.4 | 2065.8 |
| 32.5° | 4081.8 | 3653.3 | 2444.5 | 1650.8 | 1709.9 | 1783.6 | 1844.8 | 1902.9 | 1948.6 | 1971.4 | 1977.6 |
| 35° | 4183.5 | 3620.1 | 2128.1 | 1590.6 | 1698.5 | 1767.0 | 1821.0 | 1852.1 | 1792.9 | 1780.5 | 1794.0 |
| 37.5° | 4325.7 | 3589.0 | 1812.6 | 1564.7 | 1691.3 | 1760.8 | 1808.5 | 1728.6 | 1656.0 | 1626.9 | 1637.3 |
| 40° | 4479.2 | 3571.3 | 1598.9 | 1543.9 | 1694.4 | 1767.0 | 1756.6 | 1638.3 | 1533.5 | 1472.3 | 1470.2 |
| 42.5° | 4610.0 | 3544.4 | 1461.9 | 1530.4 | 1702.7 | 1790.9 | 1686.1 | 1558.4 | 1402.8 | 1366.5 | 1367.5 |
| 45° | 4698.2 | 3475.9 | 1389.3 | 1515.9 | 1709.9 | 1796.0 | 1652.9 | 1448.5 | 1337.4 | 1314.6 | 1313.6 |
| 47.5° | 4734.5 | 3351.4 | 1342.6 | 1493.1 | 1708.9 | 1753.5 | 1585.4 | 1402.8 | 1291.8 | 1285.6 | 1289.7 |
| 50° | 4710.6 | 3147.0 | 1294.9 | 1448.5 | 1684.0 | 1708.9 | 1507.6 | 1362.3 | 1260.7 | 1294.9 | 1319.8 |
| 52.5° | 4622.4 | 2882.4 | 1237.8 | 1387.2 | 1639.4 | 1658.1 | 1468.2 | 1337.4 | 1237.8 | 1283.5 | 1303.2 |
| 55° | 4599.6 | 2667.6 | 1165.2 | 1307.3 | 1573.0 | 1567.8 | 1426.7 | 1325.0 | 1222.3 | 1204.6 | 1207.7 |
| 57.5° | 4569.5 | 2458.0 | 1044.8 | 1164.2 | 1404.9 | 1413.2 | 1387.2 | 1310.5 | 1181.8 | 1176.6 | 1181.8 |
| 60° | 3969.8 | 1884.2 | 931.7 | 1004.4 | 1153.8 | 1198.4 | 1342.6 | 1283.5 | 1116.4 | 1094.6 | 1093.6 |
| 62.5° | 2592.9 | 1141.3 | 829.0 | 875.7 | 940.0 | 991.9 | 1224.3 | 1205.7 | 1044.8 | 1031.4 | 1040.7 |
| 65° | 1394.5 | 813.5 | 754.3 | 782.3 | 817.6 | 857.0 | 1014.8 | 1073.9 | 944.2 | 896.5 | 897.5 |
| 67.5° | 712.8 | 692.1 | 698.3 | 718.0 | 745.0 | 764.7 | 818.6 | 870.5 | 805.2 | 764.7 | 763.7 |
| 70° | 610.1 | 626.7 | 636.0 | 647.4 | 665.1 | 662.0 | 667.2 | 676.5 | 671.3 | 651.6 | 650.6 |
| 72.5° | 519.8 | 545.8 | 547.8 | 549.9 | 556.1 | 541.6 | 532.3 | 516.7 | 517.8 | 520.9 | 521.9 |
| 75° | 395.3 | 420.2 | 426.4 | 423.3 | 429.6 | 410.9 | 398.4 | 382.9 | 364.2 | 361.1 | 363.2 |
| 77.5° | 257.3 | 277.0 | 286.4 | 284.3 | 287.4 | 272.9 | 266.7 | 250.1 | 228.3 | 220.0 | 220.0 |
| 80° | 155.6 | 167.1 | 174.3 | 176.4 | 179.5 | 169.1 | 158.7 | 144.2 | 134.9 | 125.5 | 125.5 |
| 82.5° | 94.4 | 101.7 | 106.9 | 106.9 | 110.0 | 98.6 | 90.3 | 79.9 | 75.7 | 67.4 | 67.4 |
| 85° | 47.7 | 52.9 | 55.0 | 54.0 | 51.9 | 42.5 | 39.4 | 34.2 | 32.2 | 28.0 | 28.0 |
| 87.5° | 11.4 | 14.5 | 14.5 | 10.4 | 10.4 | 5.2 | 3.1 | 1.0 | 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-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

| | | | | | |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K): | 3905 | CRI (Ra): | 71.2 | R9: | -29.7 |
| CIE u': | 0.2273 | R1: | 68.9 | R10: | 46.2 |
| CIE v': | 0.5024 | R2: | 77.0 | R11: | 68.8 |
| Duv: | -0.0008 | R3: | 84.0 | R12: | 45.6 |
| CIE x: | 0.3841 | R4: | 71.6 | R13: | 69.5 |
| CIE y: | 0.3774 | R5: | 68.9 | R14: | 90.7 |
| CIE z: | 0.2385 | R6: | 68.3 | | |
| Peak Wavelength (nm): | 443 | R7: | 78.7 | | |
| Dominant Wavelength (nm): | 579 | R8: | 52.2 | | |
| Purity: | 28.7 | | | | |
| Rf: | 71.7 | | | | |
| Rg: | 96.9 | | | | |



Test Conditions

Stabilization Time: 211M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.8/312%
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | IN0071 | 12/1/2020 | 12/1/2021 |
| AC Power Source | IN0063 | 12/1/2020 | 12/1/2021 |
| DC Power Source | IN0208 | 12/1/2020 | 12/1/2021 |
| Sphere Thermometer | IN0085 | 12/1/2020 | 12/1/2021 |
| Room Thermometer | IN0046 | 12/1/2020 | 12/1/2021 |

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



CCT = 3905K
 CIE x = 0.3841
 CIE y = 0.3774
 Duv = -0.0008

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

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 | 2304 | 0.0 | 490 | 19043 | 2.7 | 620 | 97577 | 25.4 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 4.8 | 625 | 90158 | 19.9 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 8.0 | 630 | 82240 | 14.9 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 13.3 | 635 | 74361 | 11.2 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 20.2 | 640 | 66994 | 8.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 28.5 | 645 | 60405 | 5.8 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 37.4 | 650 | 53806 | 3.9 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 44.9 | 655 | 47610 | 2.7 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 52.6 | 660 | 42018 | 1.8 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 58.4 | 665 | 36742 | 1.2 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.0 | 540 | 96845 | 63.1 | 670 | 32105 | 0.7 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.0 | 545 | 100829 | 67.1 | 675 | 27946 | 0.5 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 0.1 | 550 | 105648 | 71.8 | 680 | 24146 | 0.3 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 0.2 | 555 | 110017 | 75.1 | 685 | 21191 | 0.2 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 0.5 | 560 | 114586 | 77.9 | 690 | 18544 | 0.1 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 1.2 | 565 | 118987 | 79.1 | 695 | 16058 | 0.1 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 2.1 | 570 | 122326 | 79.5 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 2.9 | 575 | 125968 | 78.4 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 2.7 | 580 | 127613 | 75.8 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 2.0 | 585 | 129466 | 71.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 1.5 | 590 | 128813 | 66.6 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 1.3 | 595 | 126387 | 59.9 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 1.0 | 600 | 123477 | 53.2 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 1.1 | 605 | 118718 | 46.0 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 1.2 | 610 | 112091 | 38.5 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 1.7 | 615 | 105039 | 31.7 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| 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 | 2304 | 0.0 | 490 | 19043 | 29.3 | 620 | 97577 | 1.2 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 43.0 | 625 | 90158 | 0.8 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 60.8 | 630 | 82240 | 0.5 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 81.1 | 635 | 74361 | 0.3 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 99.6 | 640 | 66994 | 0.2 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 113.9 | 645 | 60405 | 0.1 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 122.6 | 650 | 53806 | 0.1 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 125.0 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 123.1 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.1 | 535 | 94097 | 117.3 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 107.0 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.9 | 545 | 100829 | 96.7 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 3.0 | 550 | 105648 | 86.4 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 9.3 | 555 | 110017 | 75.2 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 23.0 | 560 | 114586 | 64.0 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 45.7 | 565 | 118987 | 53.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 75.5 | 570 | 122326 | 43.2 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 93.8 | 575 | 125968 | 34.3 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 79.3 | 580 | 127613 | 26.3 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 51.3 | 585 | 129466 | 19.8 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 35.6 | 590 | 128813 | 14.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 26.0 | 595 | 126387 | 10.1 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 19.3 | 600 | 123477 | 7.0 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 16.8 | 605 | 118718 | 4.7 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 17.7 | 610 | 112091 | 3.0 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 21.4 | 615 | 105039 | 1.9 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

| 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 | 2304 | 0.0 | 490 | 19043 | 15.8 | 620 | 97577 | 0.1 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 22.0 | 625 | 90158 | 0.0 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 29.2 | 630 | 82240 | 0.0 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 36.6 | 635 | 74361 | 0.0 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 42.2 | 640 | 66994 | 0.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 44.9 | 645 | 60405 | 0.0 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 44.9 | 650 | 53806 | 0.0 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 42.4 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 38.6 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 33.9 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 28.3 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.6 | 545 | 100829 | 23.4 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 2.1 | 550 | 105648 | 19.0 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 5.9 | 555 | 110017 | 14.8 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 14.3 | 560 | 114586 | 11.3 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 27.3 | 565 | 118987 | 8.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 45.1 | 570 | 122326 | 6.0 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 55.3 | 575 | 125968 | 4.2 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 47.2 | 580 | 127613 | 2.9 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 30.8 | 585 | 129466 | 1.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 21.7 | 590 | 128813 | 1.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 16.1 | 595 | 126387 | 0.8 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 12.0 | 600 | 123477 | 0.5 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 10.3 | 605 | 118718 | 0.3 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 10.5 | 610 | 112091 | 0.2 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 12.1 | 615 | 105039 | 0.1 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$



Color Vector Graphics



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

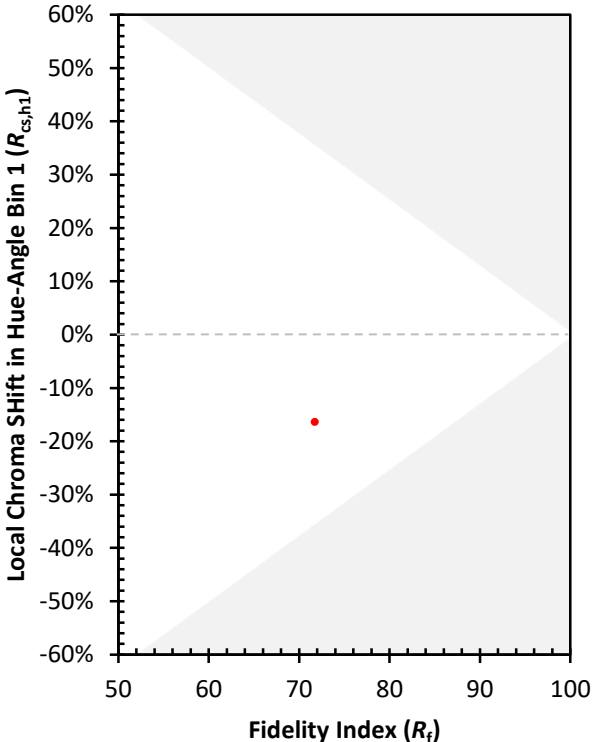
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)