

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: P642764

Luminaire Tested: GWS-SA6D-750-U-SL3-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P642764
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-33)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA6D-750-U-SL3-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (96) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30686.3 lumens
Efficiency: N/A
Efficacy: 124.9 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B4 - U0 - G3

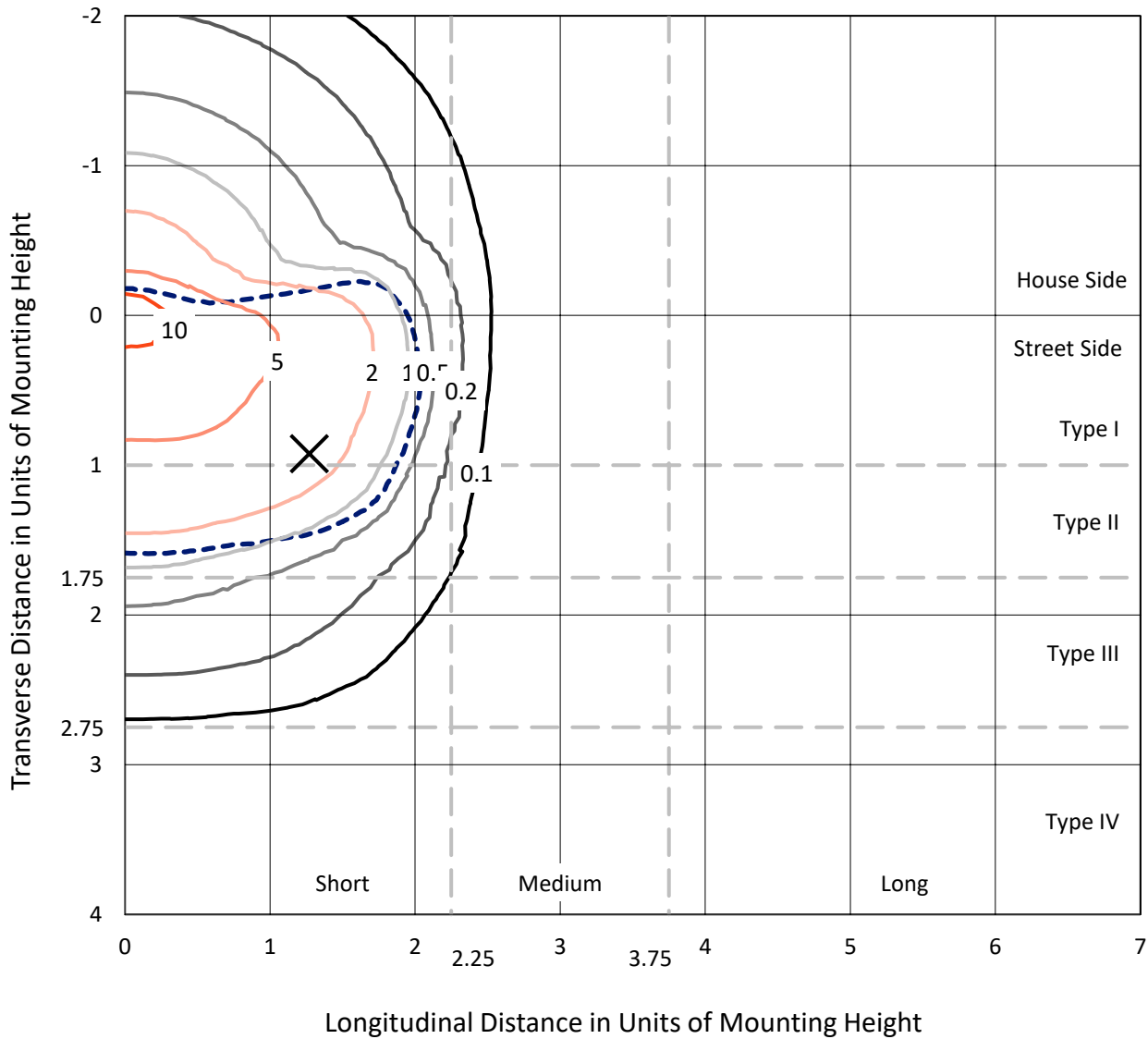
Input Watts (W): 245.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P642764
 CATALOG NUMBER: GWS-SA6D-750-U-SL3-W-GRSWH

Iso-Footcandle Lines of Horizontal Illumination

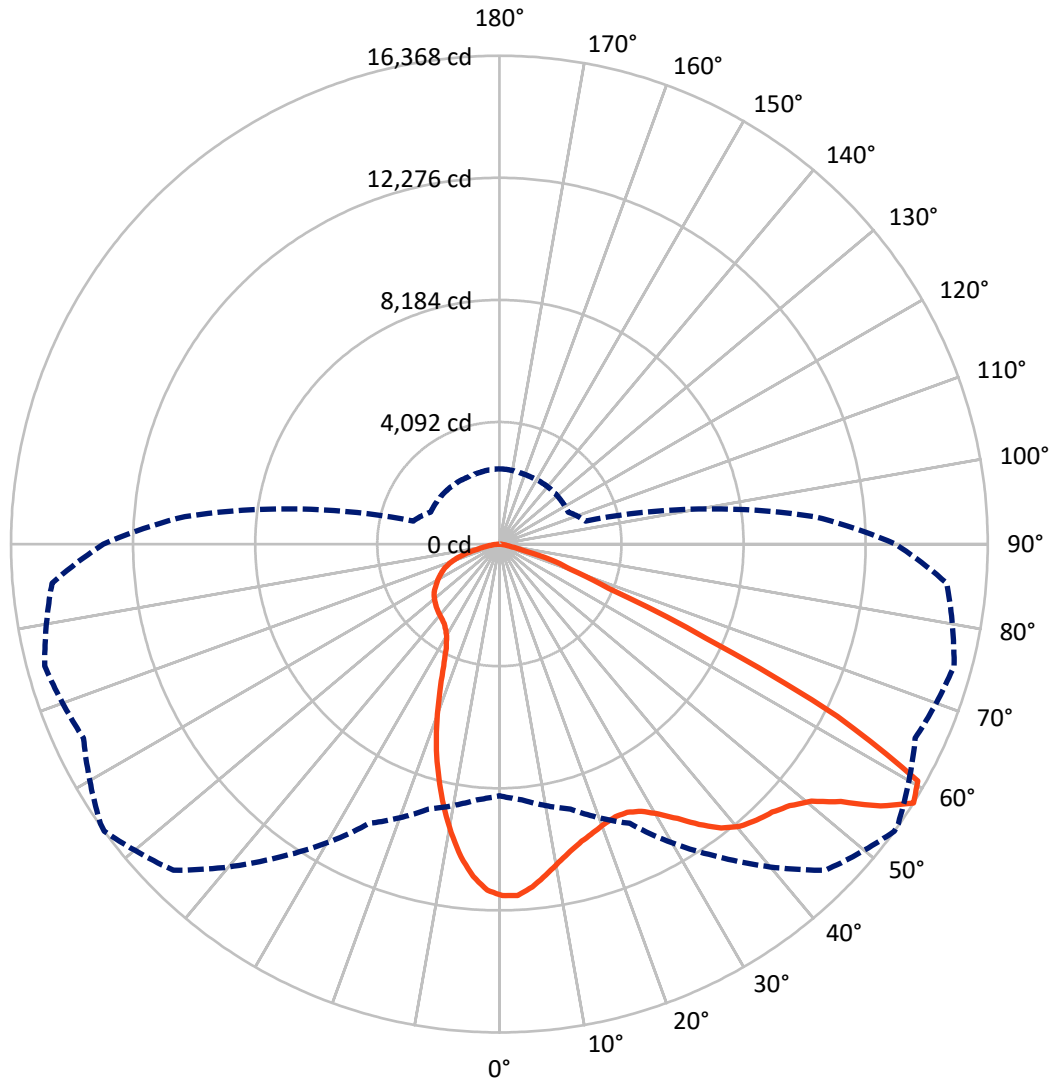
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 13.1 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 54-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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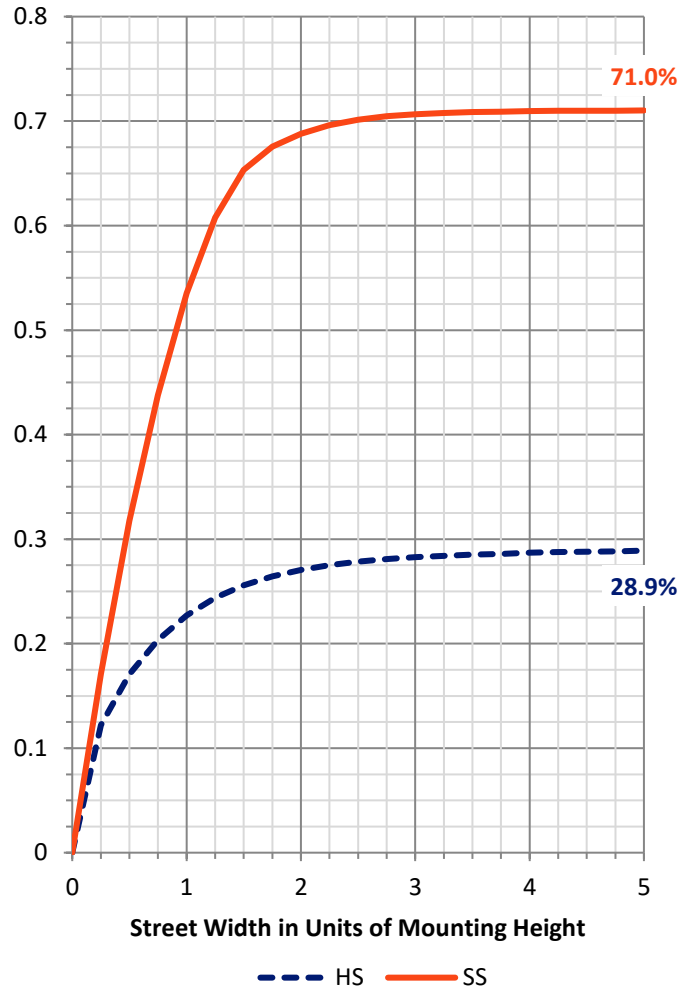
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8920.9 | 0.0 | 8920.9 |
| | % Fixture | 29.1 | 0.0 | 29.1 |
| Street Side | Lumens | 21765.4 | 0.0 | 21765.4 |
| | % Fixture | 70.9 | 0.0 | 70.9 |
| Total | Lumens | 30686.3 | 0.0 | 30686.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1035.5 | 3.4 |
| 10°-20° | 2471.0 | 8.1 |
| 20°-30° | 3419.4 | 11.1 |
| 30°-40° | 4751.3 | 15.5 |
| 40°-50° | 6275.0 | 20.4 |
| 50°-60° | 7457.0 | 24.3 |
| 60°-70° | 4131.3 | 13.5 |
| 70°-80° | 1028.8 | 3.4 |
| 80°-90° | 117.0 | 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° | 30686.3 | 100.0 |
| 0°-180° | 30686.3 | 100.0 |

Coefficient of Utilization



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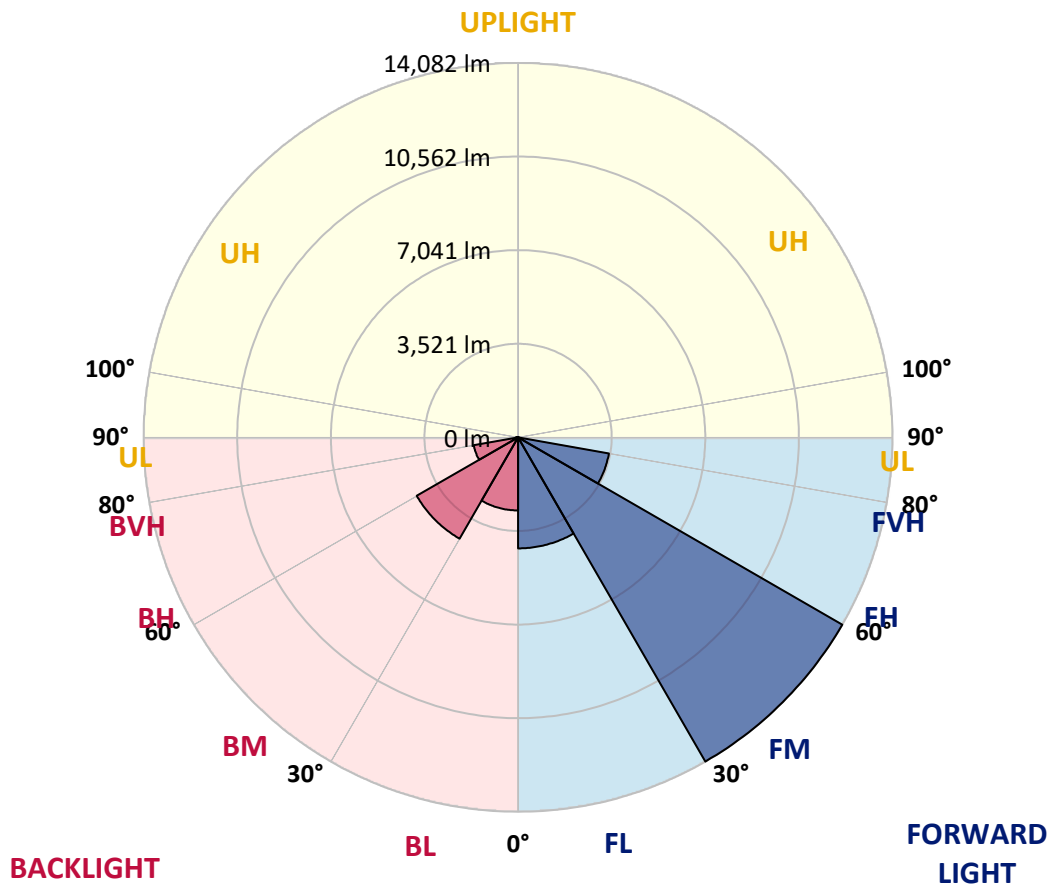
CATALOG NUMBER: GWS-SA6D-750-U-SL3-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 4176.9 | 13.6 | | | |
| FM (30°-60°) | 14082.4 | 45.9 | | | |
| FH (60°-80°) | 3469.5 | 11.3 | | | G2/5000 |
| FVH (80°-90°) | 36.6 | 0.1 | | | G1/100 |
| BL (0°-30°) | 2749.0 | 9.0 | B4/5000 | | |
| BM (30°-60°) | 4400.9 | 14.3 | B3/5000 | | |
| BH (60°-80°) | 1690.6 | 5.5 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 80.4 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 54° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 |
| 2.5° | 11560.5 | 11584.2 | 11599.9 | 11655.1 | 11702.4 | 11744.4 | 11789.0 | 11789.0 | 11786.4 | 11778.5 | 11762.8 |
| 5° | 11103.5 | 11129.7 | 11166.5 | 11242.7 | 11345.1 | 11418.7 | 11539.5 | 11550.0 | 11602.5 | 11623.6 | 11613.1 |
| 7.5° | 10572.8 | 10580.7 | 10628.0 | 10727.8 | 10890.7 | 11022.0 | 11195.4 | 11216.4 | 11342.5 | 11416.0 | 11402.9 |
| 10° | 9992.3 | 9966.1 | 10050.1 | 10197.2 | 10410.0 | 10630.6 | 10853.9 | 10872.3 | 11074.6 | 11213.8 | 11203.3 |
| 12.5° | 9461.7 | 9464.3 | 9548.4 | 9727.0 | 9992.3 | 10265.5 | 10565.0 | 10607.0 | 10856.5 | 11035.2 | 11016.8 |
| 15° | 9017.8 | 9028.3 | 9130.7 | 9333.0 | 9635.1 | 9960.8 | 10333.8 | 10373.2 | 10688.4 | 10924.8 | 10872.3 |
| 17.5° | 8663.2 | 8673.7 | 8763.0 | 8994.1 | 9317.2 | 9711.3 | 10165.7 | 10205.1 | 10596.5 | 10877.6 | 10769.9 |
| 20° | 8418.9 | 8413.6 | 8500.3 | 8721.0 | 9054.6 | 9482.7 | 10018.6 | 10076.4 | 10567.6 | 10895.9 | 10701.6 |
| 22.5° | 8319.1 | 8316.4 | 8379.5 | 8560.7 | 8873.3 | 9306.7 | 9929.3 | 10008.1 | 10599.1 | 10977.4 | 10659.5 |
| 25° | 8369.0 | 8358.5 | 8413.6 | 8547.6 | 8797.1 | 9238.4 | 9955.5 | 10039.6 | 10733.1 | 11145.5 | 10667.4 |
| 27.5° | 8523.9 | 8510.8 | 8558.1 | 8678.9 | 8868.1 | 9309.4 | 10139.4 | 10236.6 | 11016.8 | 11452.8 | 10772.5 |
| 30° | 8760.4 | 8752.5 | 8799.8 | 8915.3 | 9080.8 | 9545.8 | 10491.4 | 10601.7 | 11455.4 | 11930.9 | 11001.0 |
| 32.5° | 9036.2 | 9023.0 | 9107.1 | 9241.1 | 9432.8 | 9976.6 | 10964.2 | 11108.7 | 11975.6 | 12545.6 | 11384.5 |
| 35° | 9346.1 | 9335.6 | 9451.2 | 9645.6 | 9921.4 | 10575.5 | 11536.9 | 11694.5 | 12506.2 | 13241.7 | 11894.1 |
| 37.5° | 9648.2 | 9648.2 | 9871.5 | 10160.4 | 10507.2 | 11226.9 | 12075.4 | 12175.2 | 12873.9 | 13859.0 | 12440.5 |
| 40° | 9916.1 | 9931.9 | 10268.1 | 10701.6 | 11142.9 | 11815.3 | 12430.0 | 12514.0 | 13036.8 | 14284.5 | 12915.9 |
| 42.5° | 10213.0 | 10226.1 | 10617.5 | 11184.9 | 11710.2 | 12290.8 | 12645.4 | 12687.4 | 13068.3 | 14497.3 | 13252.2 |
| 45° | 10449.4 | 10467.8 | 10953.7 | 11560.5 | 12204.1 | 12648.0 | 12816.1 | 12852.9 | 13113.0 | 14612.9 | 13496.5 |
| 47.5° | 10572.8 | 10599.1 | 11156.0 | 11862.6 | 12537.7 | 12968.5 | 13097.2 | 13113.0 | 13296.8 | 14815.1 | 13790.7 |
| 50° | 10551.8 | 10604.4 | 11232.2 | 12012.3 | 12784.6 | 13291.6 | 13549.0 | 13575.3 | 13672.5 | 15111.9 | 14134.8 |
| 52.5° | 10738.3 | 10762.0 | 11395.0 | 12190.9 | 13136.6 | 13887.9 | 14334.4 | 14371.2 | 14326.5 | 15335.2 | 14339.7 |
| 55° | 10428.4 | 10541.3 | 11192.8 | 12164.7 | 13672.5 | 14809.9 | 15498.1 | 15479.7 | 14920.2 | 15584.8 | 14681.1 |
| 57.5° | 8434.6 | 8600.1 | 9196.4 | 10325.9 | 12789.9 | 15456.1 | 16367.5 | 16322.9 | 15379.9 | 15776.5 | 15051.5 |
| 60° | 5839.4 | 5865.6 | 6404.1 | 7205.3 | 9871.5 | 13654.1 | 16112.7 | 16209.9 | 15463.9 | 15534.9 | 14365.9 |
| 62.5° | 4670.4 | 4662.6 | 4712.5 | 4733.5 | 6278.0 | 9598.3 | 12718.9 | 13073.5 | 12847.6 | 12104.3 | 10181.5 |
| 65° | 3987.5 | 4016.4 | 4163.5 | 4087.3 | 4097.8 | 5405.9 | 7599.3 | 7649.2 | 7491.6 | 7223.7 | 5384.9 |
| 67.5° | 3120.6 | 3170.5 | 3430.6 | 3727.4 | 3632.9 | 3480.5 | 3942.8 | 3919.2 | 3089.1 | 2390.4 | 1975.3 |
| 70° | 1954.3 | 1985.9 | 2264.3 | 2926.2 | 3162.7 | 2858.0 | 2534.9 | 2524.3 | 1654.9 | 1360.7 | 1492.0 |
| 72.5° | 1140.0 | 1145.3 | 1224.1 | 1631.2 | 2098.8 | 1954.3 | 1865.0 | 1796.7 | 1063.9 | 1084.9 | 1189.9 |
| 75° | 627.8 | 627.8 | 625.2 | 704.0 | 827.4 | 732.9 | 709.2 | 690.8 | 711.9 | 806.4 | 885.2 |
| 77.5° | 131.3 | 134.0 | 141.8 | 186.5 | 241.7 | 294.2 | 370.4 | 373.0 | 464.9 | 538.5 | 601.5 |
| 80° | 60.4 | 63.0 | 78.8 | 99.8 | 128.7 | 170.7 | 225.9 | 228.5 | 281.1 | 338.9 | 380.9 |
| 82.5° | 31.5 | 34.1 | 42.0 | 52.5 | 68.3 | 89.3 | 126.1 | 126.1 | 168.1 | 199.6 | 225.9 |
| 85° | 10.5 | 10.5 | 15.8 | 21.0 | 28.9 | 36.8 | 49.9 | 49.9 | 73.6 | 97.2 | 113.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 5.3 | 10.5 | 10.5 | 13.1 | 15.8 | 26.3 |
| 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: P642764

CATALOG NUMBER: GWS-SA6D-750-U-SL3-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 | 11781.2 |
| 2.5° | 11728.6 | 11647.2 | 11649.8 | 11665.6 | 11615.7 | 11539.5 | 11489.6 | 11426.6 | 11387.1 | 11379.3 | 11408.2 |
| 5° | 11560.5 | 11466.0 | 11400.3 | 11332.0 | 11190.1 | 11022.0 | 10890.7 | 10783.0 | 10712.1 | 10685.8 | 10654.3 |
| 7.5° | 11329.4 | 11205.9 | 11040.4 | 10848.7 | 10591.2 | 10291.8 | 10081.6 | 9884.6 | 9748.0 | 9708.6 | 9690.2 |
| 10° | 11098.2 | 10919.6 | 10625.4 | 10268.1 | 9840.0 | 9435.4 | 9054.6 | 8763.0 | 8531.8 | 8400.5 | 8442.5 |
| 12.5° | 10859.2 | 10638.5 | 10178.8 | 9629.8 | 9033.5 | 8424.1 | 7925.0 | 7441.7 | 7068.7 | 6882.2 | 6827.0 |
| 15° | 10649.0 | 10349.6 | 9708.6 | 8965.2 | 8172.0 | 7404.9 | 6682.6 | 5957.6 | 5484.7 | 5227.3 | 5156.4 |
| 17.5° | 10470.4 | 10081.6 | 9212.2 | 8287.5 | 7339.3 | 6246.5 | 5358.7 | 4686.2 | 4363.1 | 4221.3 | 4210.7 |
| 20° | 10294.4 | 9819.0 | 8721.0 | 7557.3 | 6377.9 | 5153.8 | 4360.5 | 4045.3 | 3929.7 | 3879.8 | 3877.1 |
| 22.5° | 10136.8 | 9543.1 | 8203.5 | 6827.0 | 5421.7 | 4331.6 | 3895.5 | 3758.9 | 3727.4 | 3727.4 | 3722.2 |
| 25° | 10002.8 | 9267.3 | 7672.9 | 6052.1 | 4557.5 | 3856.1 | 3653.9 | 3596.1 | 3609.2 | 3632.9 | 3635.5 |
| 27.5° | 9947.7 | 9051.9 | 7160.6 | 5256.2 | 3961.2 | 3580.3 | 3488.4 | 3480.5 | 3517.3 | 3554.1 | 3559.3 |
| 30° | 10005.5 | 8904.8 | 6635.3 | 4494.4 | 3604.0 | 3412.2 | 3370.2 | 3385.9 | 3430.6 | 3467.4 | 3467.4 |
| 32.5° | 10184.1 | 8831.3 | 6099.4 | 3937.6 | 3396.4 | 3294.0 | 3280.9 | 3296.6 | 3330.8 | 3351.8 | 3354.4 |
| 35° | 10486.2 | 8860.2 | 5545.2 | 3561.9 | 3262.5 | 3207.3 | 3204.7 | 3215.2 | 3228.3 | 3241.5 | 3244.1 |
| 37.5° | 10867.0 | 8988.9 | 4951.5 | 3343.9 | 3175.8 | 3144.3 | 3139.0 | 3136.4 | 3139.0 | 3139.0 | 3141.6 |
| 40° | 11240.0 | 9183.3 | 4420.9 | 3215.2 | 3115.4 | 3089.1 | 3076.0 | 3057.6 | 3055.0 | 3049.7 | 3047.1 |
| 42.5° | 11515.9 | 9333.0 | 3998.0 | 3123.3 | 3060.2 | 3028.7 | 3012.9 | 2984.0 | 2981.4 | 2978.8 | 2976.2 |
| 45° | 11723.4 | 9459.1 | 3646.0 | 3033.9 | 3002.4 | 2973.5 | 2939.4 | 2913.1 | 2918.4 | 2923.6 | 2923.6 |
| 47.5° | 11957.2 | 9569.4 | 3388.6 | 2949.9 | 2931.5 | 2902.6 | 2860.6 | 2842.2 | 2860.6 | 2879.0 | 2879.0 |
| 50° | 12240.9 | 9724.4 | 3178.4 | 2865.8 | 2858.0 | 2823.8 | 2787.0 | 2779.1 | 2800.2 | 2826.4 | 2826.4 |
| 52.5° | 12448.4 | 9858.4 | 3028.7 | 2781.8 | 2781.8 | 2737.1 | 2705.6 | 2703.0 | 2726.6 | 2752.9 | 2755.5 |
| 55° | 12837.1 | 10170.9 | 2976.2 | 2684.6 | 2674.1 | 2639.9 | 2616.3 | 2597.9 | 2626.8 | 2650.4 | 2650.4 |
| 57.5° | 13275.8 | 10586.0 | 2989.3 | 2545.4 | 2532.2 | 2521.7 | 2503.3 | 2482.3 | 2490.2 | 2516.5 | 2519.1 |
| 60° | 12345.9 | 9782.2 | 2844.8 | 2406.1 | 2398.3 | 2393.0 | 2369.4 | 2332.6 | 2343.1 | 2364.1 | 2366.7 |
| 62.5° | 8623.8 | 6501.3 | 2301.1 | 2232.8 | 2259.0 | 2256.4 | 2224.9 | 2182.9 | 2185.5 | 2214.4 | 2214.4 |
| 65° | 4476.1 | 3517.3 | 2020.0 | 2075.2 | 2114.6 | 2098.8 | 2046.3 | 2009.5 | 2004.2 | 2041.0 | 2033.1 |
| 67.5° | 1930.7 | 1920.2 | 1838.8 | 1909.7 | 1951.7 | 1917.6 | 1862.4 | 1802.0 | 1807.2 | 1820.4 | 1809.9 |
| 70° | 1555.1 | 1602.3 | 1636.5 | 1712.7 | 1746.8 | 1683.8 | 1623.4 | 1589.2 | 1560.3 | 1557.7 | 1539.3 |
| 72.5° | 1242.5 | 1308.1 | 1384.3 | 1463.1 | 1473.6 | 1410.6 | 1334.4 | 1302.9 | 1258.2 | 1255.6 | 1237.2 |
| 75° | 935.1 | 990.3 | 1050.7 | 1113.8 | 1113.8 | 1053.3 | 1003.4 | 987.7 | 935.1 | 919.4 | 903.6 |
| 77.5° | 638.3 | 672.5 | 719.7 | 735.5 | 751.3 | 727.6 | 677.7 | 651.4 | 591.0 | 575.3 | 554.3 |
| 80° | 401.9 | 425.5 | 454.4 | 464.9 | 480.7 | 451.8 | 412.4 | 383.5 | 341.5 | 328.3 | 317.8 |
| 82.5° | 241.7 | 257.4 | 275.8 | 281.1 | 294.2 | 273.2 | 236.4 | 215.4 | 191.8 | 181.2 | 173.4 |
| 85° | 123.5 | 131.3 | 141.8 | 144.5 | 141.8 | 120.8 | 107.7 | 97.2 | 81.4 | 78.8 | 73.6 |
| 87.5° | 31.5 | 36.8 | 39.4 | 36.8 | 34.1 | 26.3 | 18.4 | 13.1 | 5.3 | 5.3 | 2.6 |
| 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

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| 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

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Photopic Flux vs. Wavelength



#####

| 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 | 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



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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)