

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: P640340

Luminaire Tested: GWS-SA5D-760-U-SL2-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640340
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-29)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5D-760-U-SL2-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (80) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25813.9 lumens
Efficiency: N/A
Efficacy: 126.2 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

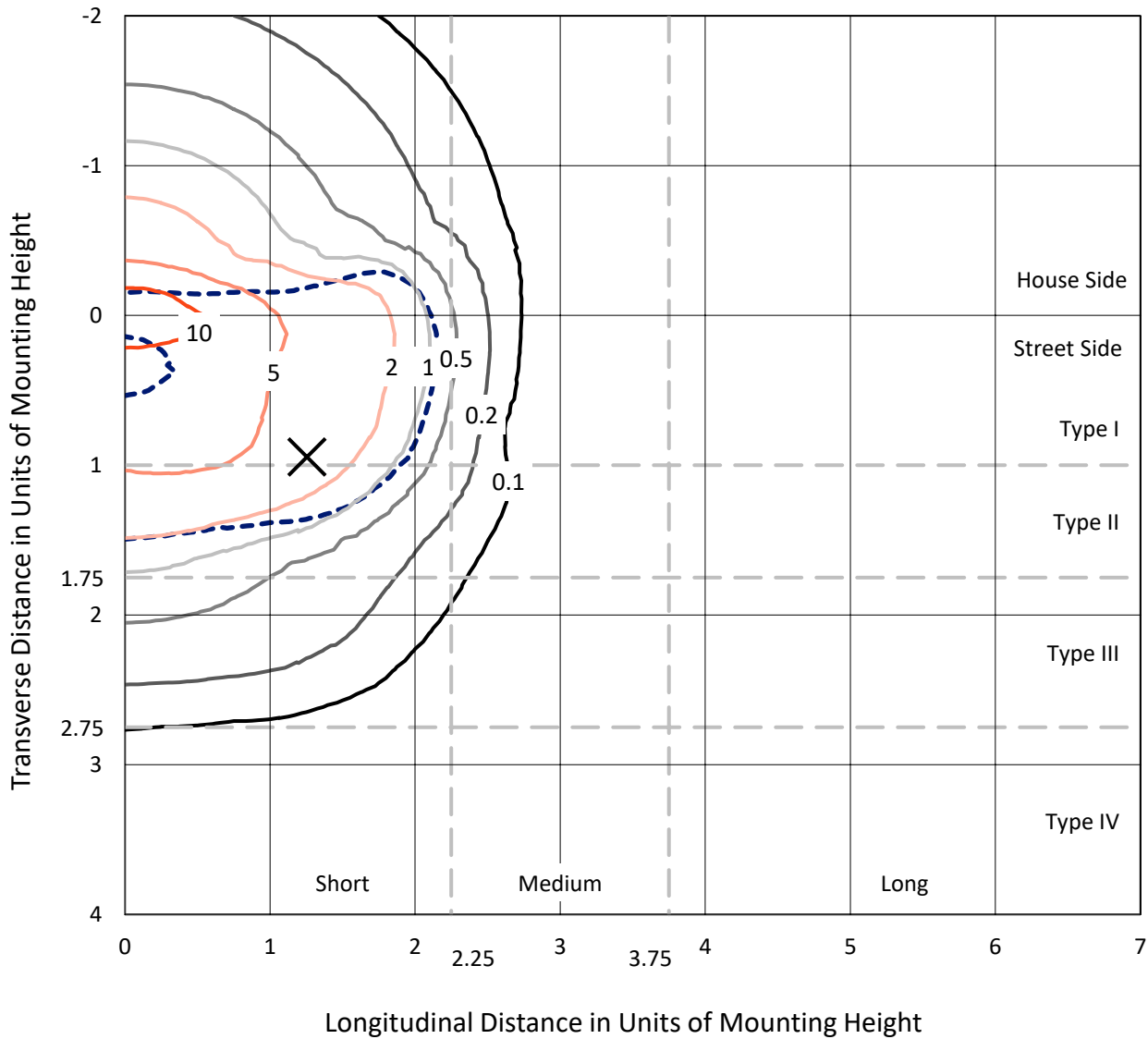
Input Watts (W): 204.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

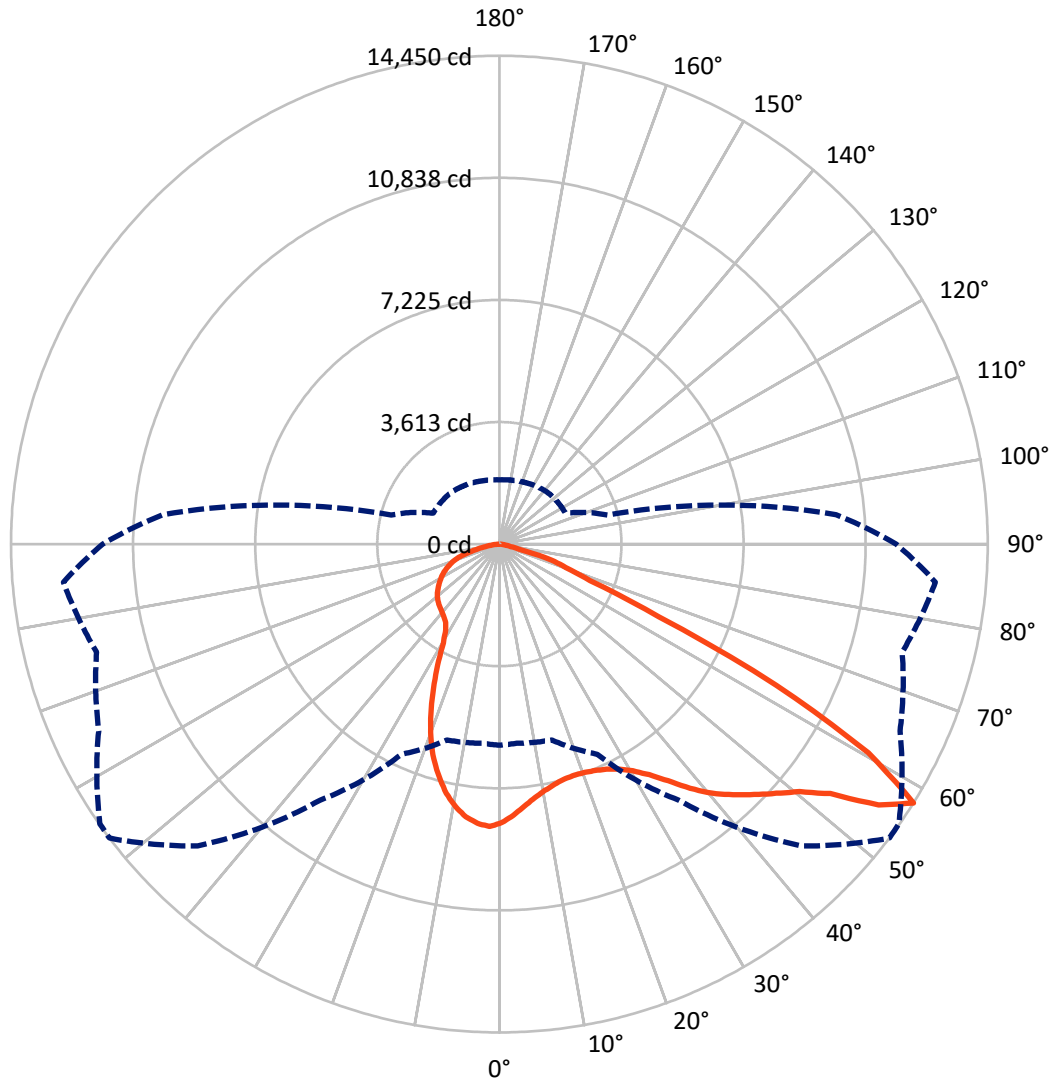
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 13.2 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 53-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical



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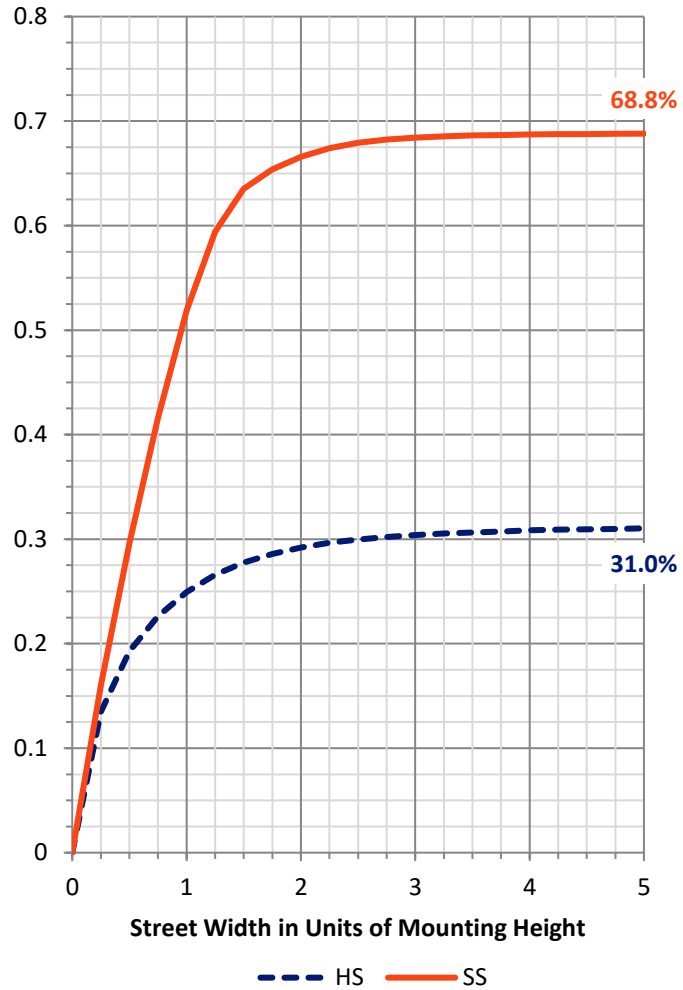
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8071.1 | 0.0 | 8071.1 |
| | % Fixture | 31.3 | 0.0 | 31.3 |
| Street Side | Lumens | 17742.8 | 0.0 | 17742.8 |
| | % Fixture | 68.7 | 0.0 | 68.7 |
| Total | Lumens | 25813.9 | 0.0 | 25813.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 745.4 | 2.9 |
| 10°-20° | 1955.6 | 7.6 |
| 20°-30° | 2881.4 | 11.2 |
| 30°-40° | 4033.1 | 15.6 |
| 40°-50° | 5301.9 | 20.5 |
| 50°-60° | 6216.4 | 24.1 |
| 60°-70° | 3662.2 | 14.2 |
| 70°-80° | 911.0 | 3.5 |
| 80°-90° | 106.9 | 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° | 25813.9 | 100.0 |
| 0°-180° | 25813.9 | 100.0 |

Coefficient of Utilization



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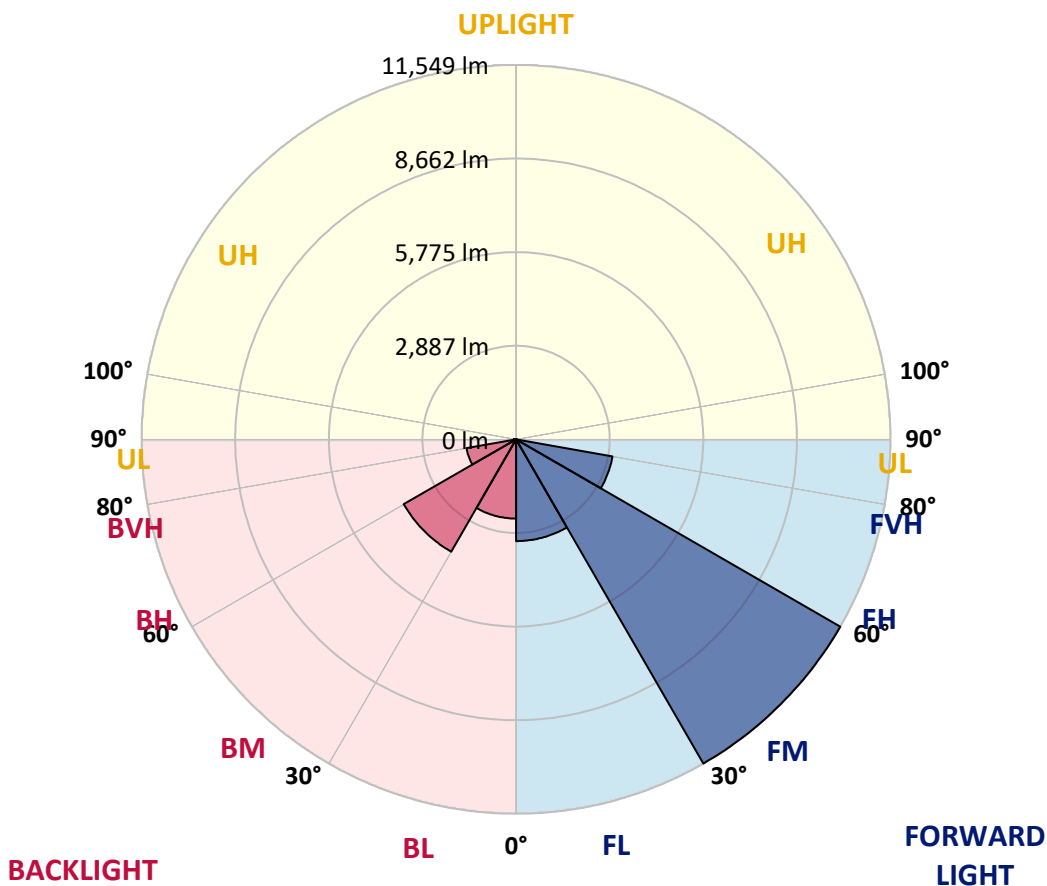
CATALOG NUMBER: GWS-SA5D-760-U-SL2-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3138.5 | 12.2 | | | |
| FM (30°-60°) | 11549.4 | 44.7 | | | |
| FH (60°-80°) | 3019.2 | 11.7 | | | G2/5000 |
| FVH (80°-90°) | 35.8 | 0.1 | | | G1/100 |
| BL (0°-30°) | 2444.0 | 9.5 | B3/2500 | | |
| BM (30°-60°) | 4002.0 | 15.5 | B3/5000 | | |
| BH (60°-80°) | 1553.9 | 6.0 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 71.1 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 53° | 55° | 65° | 75° | 85° |
|-------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 |
| 2.5° | 7769.4 | 7791.2 | 7795.5 | 7862.9 | 7867.2 | 7965.0 | 8030.2 | 8017.1 | 8084.5 | 8167.0 | 8232.2 |
| 5° | 7397.9 | 7400.1 | 7421.8 | 7502.2 | 7545.7 | 7673.8 | 7782.5 | 7782.5 | 7912.8 | 8082.3 | 8227.9 |
| 7.5° | 7091.6 | 7089.4 | 7108.9 | 7198.0 | 7269.7 | 7424.0 | 7571.7 | 7589.1 | 7771.6 | 8019.3 | 8256.1 |
| 10° | 6806.9 | 6822.2 | 6843.9 | 6952.5 | 7043.8 | 7235.0 | 7410.9 | 7439.2 | 7669.5 | 7975.8 | 8295.2 |
| 12.5° | 6624.4 | 6626.6 | 6659.2 | 6780.9 | 6898.2 | 7102.4 | 7287.1 | 7321.9 | 7586.9 | 7934.6 | 8323.5 |
| 15° | 6507.1 | 6509.3 | 6544.1 | 6678.8 | 6815.6 | 7022.0 | 7211.1 | 7250.2 | 7539.1 | 7928.0 | 8377.8 |
| 17.5° | 6455.0 | 6452.8 | 6485.4 | 6620.1 | 6770.0 | 6985.1 | 7187.2 | 7235.0 | 7560.9 | 7978.0 | 8473.4 |
| 20° | 6455.0 | 6457.1 | 6474.5 | 6596.2 | 6748.3 | 6976.4 | 7211.1 | 7269.7 | 7645.6 | 8091.0 | 8621.1 |
| 22.5° | 6546.2 | 6554.9 | 6563.6 | 6646.2 | 6765.7 | 6989.5 | 7274.1 | 7352.3 | 7828.1 | 8280.0 | 8814.5 |
| 25° | 6724.4 | 6726.6 | 6735.2 | 6802.6 | 6856.9 | 7026.4 | 7378.4 | 7495.7 | 8112.7 | 8555.9 | 9057.8 |
| 27.5° | 6963.4 | 6993.8 | 7002.5 | 7045.9 | 7045.9 | 7117.6 | 7541.3 | 7710.8 | 8497.3 | 8953.5 | 9368.5 |
| 30° | 7298.0 | 7308.8 | 7324.0 | 7371.8 | 7319.7 | 7289.3 | 7780.3 | 7997.6 | 8942.7 | 9433.7 | 9742.2 |
| 32.5° | 7591.3 | 7615.2 | 7697.7 | 7776.0 | 7682.5 | 7586.9 | 8132.3 | 8388.6 | 9370.7 | 9933.4 | 10139.8 |
| 35° | 7841.1 | 7899.8 | 8058.4 | 8232.2 | 8167.0 | 8071.4 | 8599.4 | 8866.6 | 9722.7 | 10291.9 | 10491.8 |
| 37.5° | 8143.1 | 8188.8 | 8406.0 | 8688.5 | 8747.1 | 8701.5 | 9168.6 | 9359.8 | 9957.3 | 10383.1 | 10683.0 |
| 40° | 8449.5 | 8519.0 | 8799.3 | 9190.4 | 9414.1 | 9446.7 | 9694.4 | 9822.6 | 10037.7 | 10205.0 | 10646.0 |
| 42.5° | 8762.3 | 8881.8 | 9266.4 | 9722.7 | 10120.3 | 10194.1 | 10137.6 | 10192.0 | 10011.6 | 9959.5 | 10474.4 |
| 45° | 9144.7 | 9286.0 | 9720.5 | 10302.8 | 10826.4 | 10941.5 | 10572.2 | 10522.2 | 10007.3 | 9866.1 | 10367.9 |
| 47.5° | 9596.6 | 9737.9 | 10152.8 | 10830.7 | 11499.9 | 11584.6 | 11017.6 | 10926.3 | 10159.4 | 10009.4 | 10511.3 |
| 50° | 9996.4 | 10094.2 | 10465.7 | 11224.0 | 12127.8 | 12177.8 | 11508.6 | 11397.8 | 10537.4 | 10407.0 | 10958.9 |
| 52.5° | 9590.1 | 9579.3 | 9970.3 | 10904.6 | 12453.7 | 13055.5 | 12264.7 | 12158.2 | 11267.4 | 11067.5 | 11652.0 |
| 55° | 8136.6 | 8012.8 | 8362.6 | 9281.6 | 11543.3 | 13835.5 | 13620.4 | 13407.5 | 12240.8 | 11732.4 | 12301.6 |
| 57.5° | 5948.7 | 5914.0 | 5998.7 | 6861.3 | 9246.8 | 12627.5 | 14450.4 | 14430.8 | 13081.6 | 12340.7 | 12949.1 |
| 60° | 4651.7 | 4599.5 | 4373.6 | 4397.5 | 6302.9 | 9863.9 | 12540.6 | 13116.4 | 13603.0 | 12705.7 | 13401.0 |
| 62.5° | 4130.2 | 4091.1 | 3973.8 | 3650.1 | 3754.4 | 6613.6 | 9192.5 | 9720.5 | 11886.6 | 11221.8 | 11510.8 |
| 65° | 3419.8 | 3408.9 | 3506.7 | 3493.6 | 3146.0 | 3652.2 | 5188.3 | 5720.6 | 7474.0 | 7567.4 | 7474.0 |
| 67.5° | 2485.5 | 2466.0 | 2713.7 | 3202.5 | 3028.7 | 2757.1 | 2891.8 | 3076.5 | 3832.6 | 3441.5 | 3098.2 |
| 70° | 1616.5 | 1588.2 | 1731.6 | 2313.9 | 2711.5 | 2403.0 | 2083.6 | 2053.2 | 2107.5 | 1310.1 | 1416.6 |
| 72.5° | 1084.2 | 1051.6 | 1049.4 | 1273.2 | 1638.2 | 1618.6 | 1614.3 | 1599.1 | 1427.4 | 1034.2 | 1147.2 |
| 75° | 604.0 | 577.9 | 571.4 | 549.7 | 586.6 | 597.5 | 636.6 | 658.3 | 712.6 | 784.3 | 869.1 |
| 77.5° | 102.1 | 99.9 | 126.0 | 160.8 | 221.6 | 284.6 | 352.0 | 371.5 | 458.4 | 543.2 | 597.5 |
| 80° | 56.5 | 58.7 | 76.0 | 93.4 | 123.8 | 169.5 | 217.3 | 230.3 | 282.4 | 328.1 | 371.5 |
| 82.5° | 30.4 | 30.4 | 39.1 | 50.0 | 67.4 | 89.1 | 117.3 | 128.2 | 162.9 | 191.2 | 221.6 |
| 85° | 10.9 | 10.9 | 15.2 | 19.6 | 28.2 | 36.9 | 45.6 | 52.1 | 71.7 | 97.8 | 110.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 4.3 | 8.7 | 8.7 | 10.9 | 19.6 | 28.2 |
| 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: P640340

CATALOG NUMBER: GWS-SA5D-760-U-SL2-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 | 8243.1 |
| 2.5° | 8286.5 | 8227.9 | 8308.3 | 8345.2 | 8358.2 | 8366.9 | 8310.4 | 8271.3 | 8258.3 | 8217.0 | 8193.1 |
| 5° | 8316.9 | 8277.8 | 8353.9 | 8353.9 | 8299.6 | 8243.1 | 8127.9 | 8047.5 | 7991.0 | 7923.7 | 7912.8 |
| 7.5° | 8369.1 | 8340.8 | 8382.1 | 8297.4 | 8160.5 | 8008.4 | 7808.5 | 7652.1 | 7526.1 | 7443.5 | 7445.7 |
| 10° | 8438.6 | 8403.9 | 8371.3 | 8182.2 | 7932.4 | 7652.1 | 7345.8 | 7117.6 | 6909.1 | 6813.5 | 6761.3 |
| 12.5° | 8484.2 | 8434.3 | 8297.4 | 7984.5 | 7617.3 | 7241.5 | 6809.1 | 6470.2 | 6168.2 | 6031.3 | 6020.4 |
| 15° | 8540.7 | 8449.5 | 8175.7 | 7728.2 | 7217.6 | 6704.8 | 6148.6 | 5677.2 | 5268.7 | 5055.8 | 5044.9 |
| 17.5° | 8614.6 | 8464.7 | 8030.2 | 7434.8 | 6796.1 | 6040.0 | 5340.4 | 4747.3 | 4312.7 | 4147.6 | 4175.9 |
| 20° | 8718.9 | 8482.1 | 7865.0 | 7108.9 | 6272.5 | 5283.9 | 4412.7 | 3867.3 | 3700.0 | 3689.2 | 3667.5 |
| 22.5° | 8836.2 | 8492.9 | 7682.5 | 6743.9 | 5638.1 | 4477.9 | 3645.7 | 3413.3 | 3411.1 | 3465.4 | 3478.4 |
| 25° | 8968.7 | 8501.6 | 7476.1 | 6318.1 | 4951.5 | 3674.0 | 3224.2 | 3154.7 | 3209.0 | 3311.1 | 3324.2 |
| 27.5° | 9138.2 | 8519.0 | 7226.3 | 5851.0 | 4221.5 | 3174.3 | 2991.8 | 2974.4 | 3039.6 | 3135.1 | 3130.8 |
| 30° | 9388.1 | 8582.0 | 6961.2 | 5314.3 | 3471.9 | 2937.4 | 2850.5 | 2852.7 | 2878.8 | 2924.4 | 2930.9 |
| 32.5° | 9642.3 | 8679.8 | 6702.7 | 4710.3 | 3041.7 | 2802.7 | 2763.6 | 2759.3 | 2759.3 | 2778.8 | 2783.2 |
| 35° | 9883.4 | 8790.6 | 6422.4 | 4080.3 | 2833.1 | 2724.5 | 2698.4 | 2685.4 | 2678.9 | 2674.5 | 2668.0 |
| 37.5° | 10018.1 | 8844.9 | 6148.6 | 3458.9 | 2722.3 | 2672.4 | 2646.3 | 2628.9 | 2605.0 | 2587.6 | 2583.3 |
| 40° | 9959.5 | 8781.9 | 5831.4 | 2993.9 | 2655.0 | 2622.4 | 2592.0 | 2568.1 | 2535.5 | 2520.3 | 2511.6 |
| 42.5° | 9763.9 | 8586.4 | 5486.0 | 2774.5 | 2600.7 | 2568.1 | 2531.2 | 2492.0 | 2470.3 | 2457.3 | 2455.1 |
| 45° | 9557.5 | 8349.5 | 5068.8 | 2646.3 | 2548.5 | 2509.4 | 2466.0 | 2422.5 | 2398.6 | 2392.1 | 2389.9 |
| 47.5° | 9551.0 | 8232.2 | 4625.6 | 2544.2 | 2485.5 | 2446.4 | 2392.1 | 2348.6 | 2322.6 | 2313.9 | 2305.2 |
| 50° | 9837.8 | 8351.7 | 4125.9 | 2455.1 | 2420.3 | 2379.1 | 2318.2 | 2270.4 | 2237.8 | 2227.0 | 2224.8 |
| 52.5° | 10433.1 | 8801.4 | 3678.3 | 2366.0 | 2333.4 | 2285.6 | 2235.7 | 2187.9 | 2148.8 | 2129.2 | 2127.0 |
| 55° | 11076.2 | 9372.9 | 3400.2 | 2274.8 | 2231.3 | 2190.0 | 2144.4 | 2092.3 | 2048.8 | 2018.4 | 2014.1 |
| 57.5° | 11741.1 | 9996.4 | 3315.5 | 2159.6 | 2127.0 | 2098.8 | 2044.5 | 1988.0 | 1938.0 | 1909.8 | 1903.3 |
| 60° | 12288.6 | 10533.1 | 3474.1 | 2038.0 | 2020.6 | 1983.6 | 1933.7 | 1879.4 | 1844.6 | 1822.9 | 1818.5 |
| 62.5° | 10287.5 | 8575.5 | 2804.9 | 1905.4 | 1905.4 | 1866.3 | 1809.8 | 1770.7 | 1746.8 | 1731.6 | 1727.3 |
| 65° | 6528.8 | 5310.0 | 1914.1 | 1772.9 | 1770.7 | 1718.6 | 1670.8 | 1644.7 | 1633.8 | 1609.9 | 1605.6 |
| 67.5° | 2844.0 | 2426.9 | 1636.0 | 1638.2 | 1629.5 | 1573.0 | 1525.2 | 1505.7 | 1483.9 | 1457.9 | 1455.7 |
| 70° | 1475.2 | 1503.5 | 1464.4 | 1488.3 | 1473.1 | 1405.7 | 1360.1 | 1329.7 | 1284.0 | 1258.0 | 1260.1 |
| 72.5° | 1190.6 | 1221.0 | 1264.5 | 1301.4 | 1268.8 | 1214.5 | 1142.8 | 1105.9 | 1047.2 | 1019.0 | 1021.2 |
| 75° | 908.2 | 940.8 | 982.0 | 1021.2 | 995.1 | 927.7 | 882.1 | 845.2 | 777.8 | 745.2 | 751.7 |
| 77.5° | 625.7 | 643.1 | 693.1 | 690.9 | 682.2 | 662.7 | 595.3 | 551.9 | 482.3 | 443.2 | 447.6 |
| 80° | 388.9 | 399.8 | 423.7 | 434.5 | 430.2 | 404.1 | 349.8 | 317.2 | 275.9 | 252.0 | 254.2 |
| 82.5° | 234.6 | 241.2 | 262.9 | 265.1 | 262.9 | 243.3 | 202.1 | 178.2 | 152.1 | 139.1 | 139.1 |
| 85° | 119.5 | 123.8 | 136.9 | 136.9 | 123.8 | 104.3 | 93.4 | 82.6 | 67.4 | 60.8 | 60.8 |
| 87.5° | 32.6 | 32.6 | 41.3 | 34.8 | 28.2 | 26.1 | 13.0 | 10.9 | 4.3 | 2.2 | 2.2 |
| 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: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

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

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-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-760-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

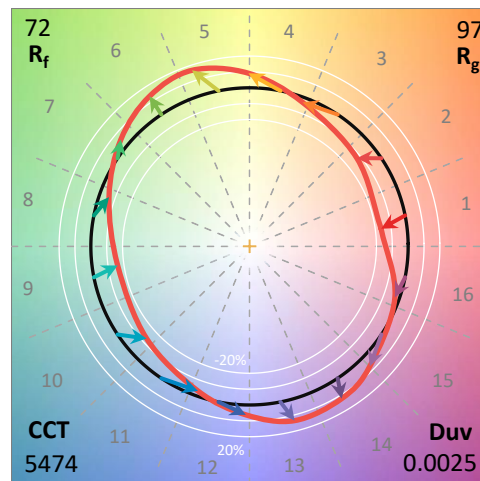
THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 5474
 CIE u': 0.2052
 CIE v': 0.4804
 Duv: 0.0025
 CIE x: 0.3330
 CIE y: 0.3466
 CIE z: 0.3204
 Peak Wavelength (nm): 442
 Dominant Wavelength (nm): 554
 Purity: 4.1

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 70.6 | R9: | -27.1 |
| R2: | 74.6 | R10: | 40.8 |
| R3: | 78.3 | R11: | 74.6 |
| R4: | 73.8 | R12: | 50.4 |
| R5: | 72.4 | R13: | 70.0 |
| R6: | 67.5 | R14: | 87.8 |
| R7: | 77.5 | | |
| R8: | 58.9 | | |

Rf: 72.1
 Rg: 97.2



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

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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 5700K 4-step quadrangle

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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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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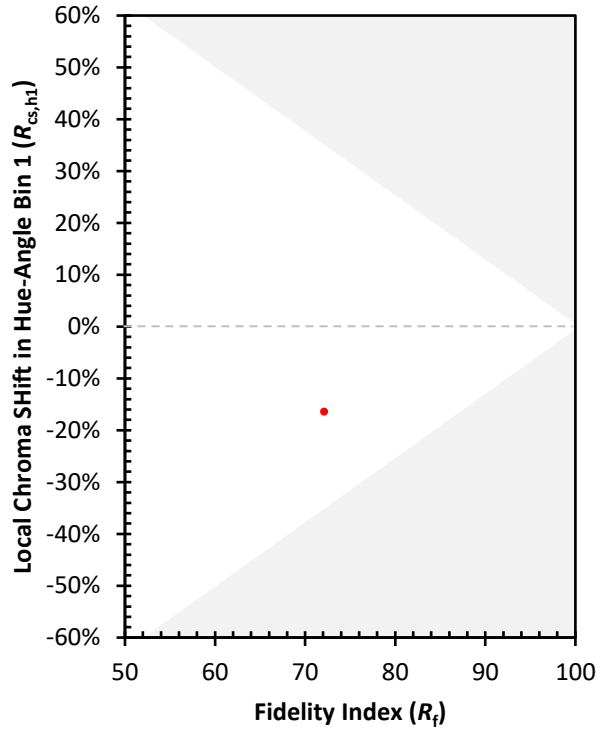
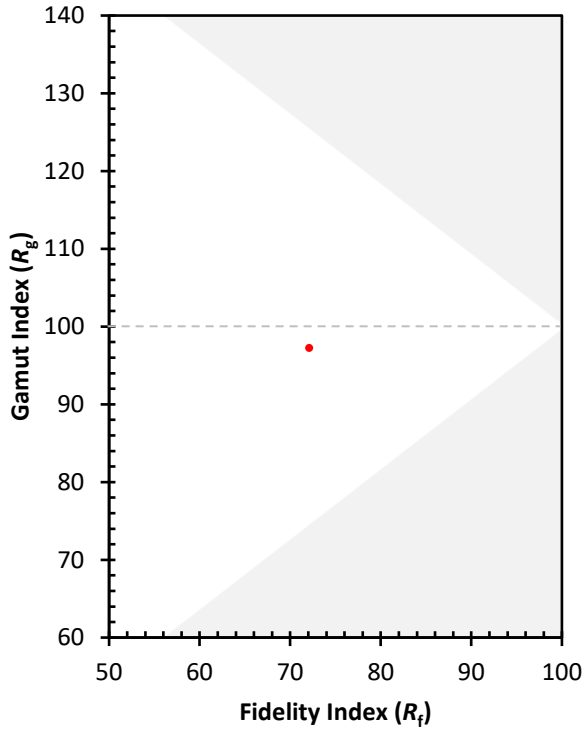
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)