

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: P640179

Luminaire Tested: GWS-SA5D-735-U-SL3-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640179
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-SA5D-735-U-SL3-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (80) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24812.9 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

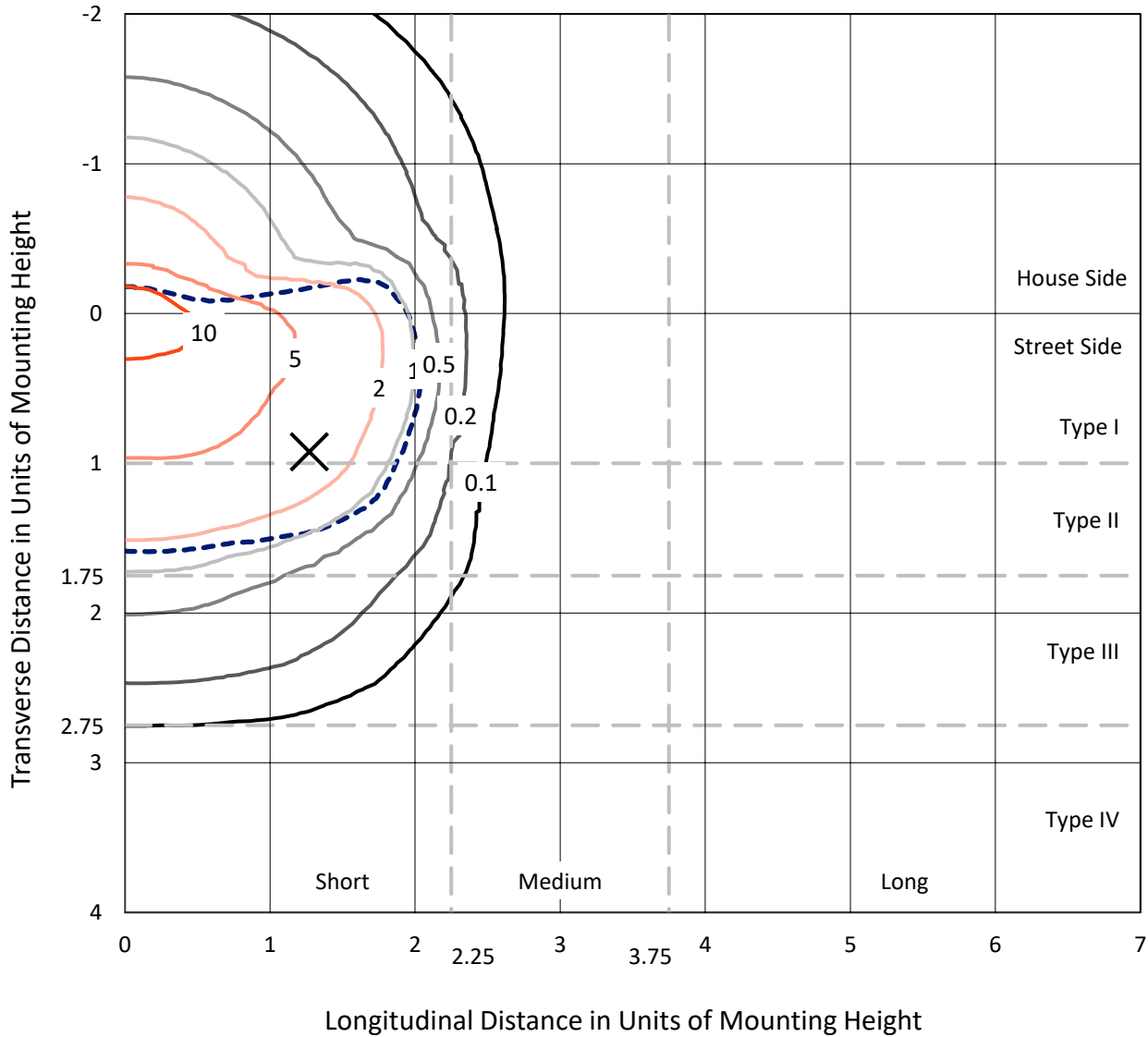
Input Watts (W): 204.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

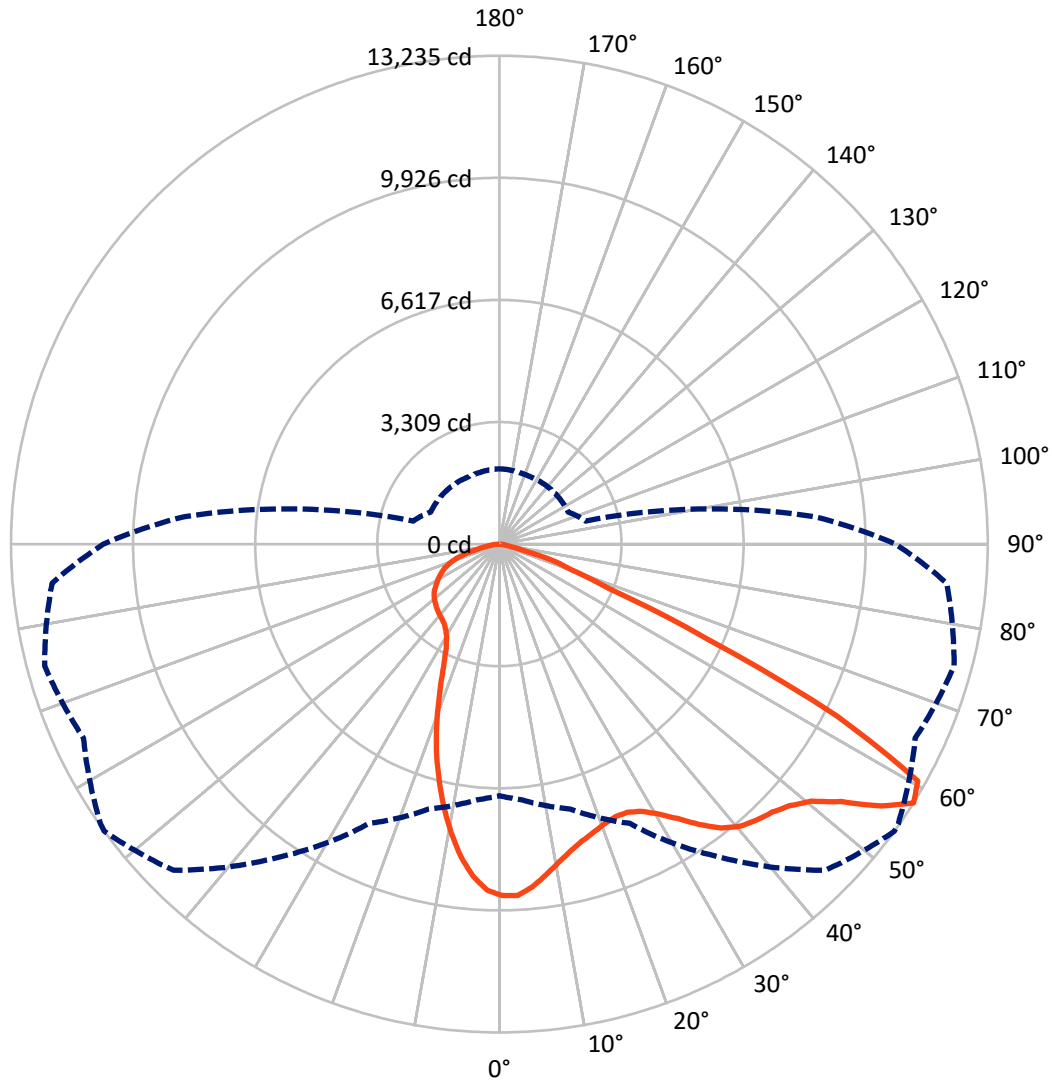
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 15.2 fc
 Type II - Short - N/A

REPORT NUMBER: P640179
CATALOG NUMBER: GWS-SA5D-735-U-SL3-W-GRSWH

Luminous Intensity Polar Plot



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

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CATALOG NUMBER: GWS-SA5D-735-U-SL3-W-GRSWH

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7213.4 | 0.0 | 7213.4 |
| | % Fixture | 29.1 | 0.0 | 29.1 |
| Street Side | Lumens | 17599.5 | 0.0 | 17599.5 |
| | % Fixture | 70.9 | 0.0 | 70.9 |
| Total | Lumens | 24812.9 | 0.0 | 24812.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 837.3 | 3.4 |
| 10°-20° | 1998.0 | 8.1 |
| 20°-30° | 2764.9 | 11.1 |
| 30°-40° | 3841.9 | 15.5 |
| 40°-50° | 5074.0 | 20.4 |
| 50°-60° | 6029.7 | 24.3 |
| 60°-70° | 3340.5 | 13.5 |
| 70°-80° | 831.9 | 3.4 |
| 80°-90° | 94.6 | 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° | 24812.9 | 100.0 |
| 0°-180° | 24812.9 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P640179

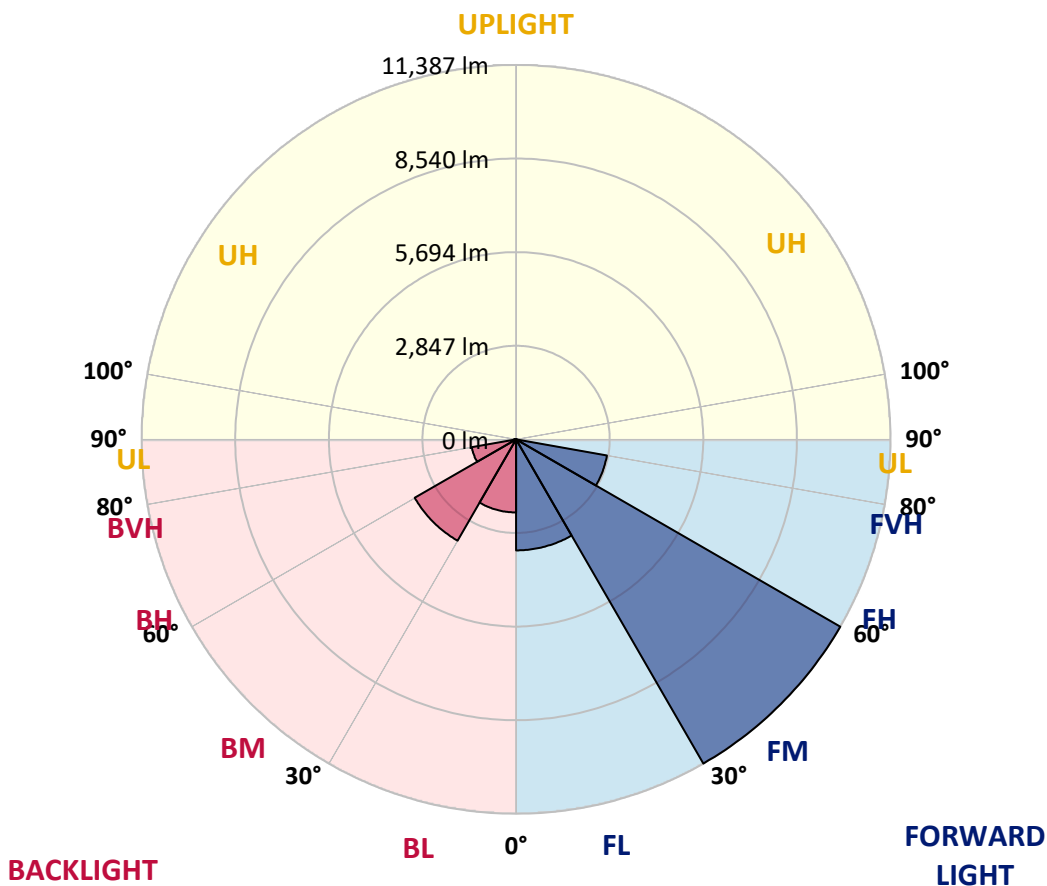
CATALOG NUMBER: GWS-SA5D-735-U-SL3-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3377.4 | 13.6 | | | |
| FM (30°-60°) | 11387.0 | 45.9 | | | |
| FH (60°-80°) | 2805.4 | 11.3 | | | G2/5000 |
| FVH (80°-90°) | 29.6 | 0.1 | | | G1/100 |
| BL (0°-30°) | 2222.9 | 9.0 | B3/2500 | | |
| BM (30°-60°) | 3558.5 | 14.3 | B3/5000 | | |
| BH (60°-80°) | 1367.0 | 5.5 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 65.0 | 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° | 54° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 |
| 2.5° | 9347.8 | 9366.9 | 9379.7 | 9424.3 | 9462.5 | 9496.5 | 9532.6 | 9532.6 | 9530.5 | 9524.1 | 9511.4 |
| 5° | 8978.2 | 8999.5 | 9029.2 | 9090.8 | 9173.6 | 9233.1 | 9330.8 | 9339.3 | 9381.8 | 9398.8 | 9390.3 |
| 7.5° | 8549.2 | 8555.6 | 8593.8 | 8674.5 | 8806.2 | 8912.4 | 9052.6 | 9069.6 | 9171.5 | 9231.0 | 9220.4 |
| 10° | 8079.8 | 8058.5 | 8126.5 | 8245.5 | 8417.5 | 8595.9 | 8776.5 | 8791.3 | 8954.9 | 9067.4 | 9059.0 |
| 12.5° | 7650.7 | 7652.8 | 7720.8 | 7865.3 | 8079.8 | 8300.7 | 8542.8 | 8576.8 | 8778.6 | 8923.0 | 8908.1 |
| 15° | 7291.8 | 7300.3 | 7383.1 | 7546.6 | 7790.9 | 8054.3 | 8355.9 | 8387.8 | 8642.6 | 8833.8 | 8791.3 |
| 17.5° | 7005.0 | 7013.5 | 7085.7 | 7272.6 | 7533.9 | 7852.5 | 8220.0 | 8251.8 | 8568.3 | 8795.6 | 8708.5 |
| 20° | 6807.5 | 6803.2 | 6873.3 | 7051.8 | 7321.5 | 7667.7 | 8101.0 | 8147.7 | 8544.9 | 8810.4 | 8653.3 |
| 22.5° | 6726.8 | 6724.7 | 6775.6 | 6922.2 | 7174.9 | 7525.4 | 8028.8 | 8092.5 | 8570.4 | 8876.3 | 8619.3 |
| 25° | 6767.1 | 6758.6 | 6803.2 | 6911.6 | 7113.3 | 7470.2 | 8050.0 | 8118.0 | 8678.8 | 9012.2 | 8625.7 |
| 27.5° | 6892.4 | 6881.8 | 6920.1 | 7017.8 | 7170.7 | 7527.5 | 8198.7 | 8277.3 | 8908.1 | 9260.7 | 8710.6 |
| 30° | 7083.6 | 7077.2 | 7115.5 | 7208.9 | 7342.7 | 7718.7 | 8483.3 | 8572.6 | 9262.9 | 9647.3 | 8895.4 |
| 32.5° | 7306.6 | 7296.0 | 7364.0 | 7472.3 | 7627.4 | 8067.0 | 8865.7 | 8982.5 | 9683.4 | 10144.3 | 9205.5 |
| 35° | 7557.3 | 7548.8 | 7642.2 | 7799.4 | 8022.4 | 8551.3 | 9328.7 | 9456.1 | 10112.5 | 10707.2 | 9617.6 |
| 37.5° | 7801.5 | 7801.5 | 7982.1 | 8215.7 | 8496.1 | 9078.1 | 9764.1 | 9844.8 | 10409.8 | 11206.3 | 10059.4 |
| 40° | 8018.2 | 8030.9 | 8302.8 | 8653.3 | 9010.1 | 9553.8 | 10050.9 | 10118.8 | 10541.5 | 11550.4 | 10443.8 |
| 42.5° | 8258.2 | 8268.8 | 8585.3 | 9044.1 | 9468.9 | 9938.3 | 10225.0 | 10259.0 | 10567.0 | 11722.5 | 10715.7 |
| 45° | 8449.4 | 8464.2 | 8857.2 | 9347.8 | 9868.2 | 10227.2 | 10363.1 | 10392.8 | 10603.1 | 11815.9 | 10913.2 |
| 47.5° | 8549.2 | 8570.4 | 9020.7 | 9592.1 | 10138.0 | 10486.3 | 10590.4 | 10603.1 | 10751.8 | 11979.5 | 11151.1 |
| 50° | 8532.2 | 8574.7 | 9082.3 | 9713.1 | 10337.6 | 10747.5 | 10955.7 | 10976.9 | 11055.5 | 12219.5 | 11429.4 |
| 52.5° | 8683.0 | 8702.1 | 9214.0 | 9857.6 | 10622.2 | 11229.7 | 11590.8 | 11620.5 | 11584.4 | 12400.0 | 11595.0 |
| 55° | 8432.4 | 8523.7 | 9050.5 | 9836.3 | 11055.5 | 11975.2 | 12531.7 | 12516.9 | 12064.4 | 12601.8 | 11871.2 |
| 57.5° | 6820.2 | 6954.0 | 7436.2 | 8349.5 | 10341.9 | 12497.7 | 13234.8 | 13198.7 | 12436.1 | 12756.9 | 12170.6 |
| 60° | 4721.7 | 4742.9 | 5178.4 | 5826.2 | 7982.1 | 11040.7 | 13028.7 | 13107.3 | 12504.1 | 12561.5 | 11616.3 |
| 62.5° | 3776.5 | 3770.1 | 3810.5 | 3827.5 | 5076.4 | 7761.2 | 10284.5 | 10571.3 | 10388.6 | 9787.5 | 8232.7 |
| 65° | 3224.3 | 3247.6 | 3366.6 | 3305.0 | 3313.5 | 4371.2 | 6144.8 | 6185.2 | 6057.7 | 5841.1 | 4354.2 |
| 67.5° | 2523.3 | 2563.7 | 2774.0 | 3014.0 | 2937.5 | 2814.3 | 3188.2 | 3169.0 | 2497.8 | 1932.9 | 1597.3 |
| 70° | 1580.3 | 1605.8 | 1830.9 | 2366.2 | 2557.3 | 2310.9 | 2049.7 | 2041.2 | 1338.1 | 1100.2 | 1206.4 |
| 72.5° | 921.8 | 926.1 | 989.8 | 1319.0 | 1697.1 | 1580.3 | 1508.1 | 1452.8 | 860.2 | 877.2 | 962.2 |
| 75° | 507.6 | 507.6 | 505.5 | 569.2 | 669.1 | 592.6 | 573.5 | 558.6 | 575.6 | 652.1 | 715.8 |
| 77.5° | 106.2 | 108.3 | 114.7 | 150.8 | 195.4 | 237.9 | 299.5 | 301.6 | 376.0 | 435.4 | 486.4 |
| 80° | 48.9 | 51.0 | 63.7 | 80.7 | 104.1 | 138.1 | 182.7 | 184.8 | 227.3 | 274.0 | 308.0 |
| 82.5° | 25.5 | 27.6 | 34.0 | 42.5 | 55.2 | 72.2 | 102.0 | 102.0 | 135.9 | 161.4 | 182.7 |
| 85° | 8.5 | 8.5 | 12.7 | 17.0 | 23.4 | 29.7 | 40.4 | 40.4 | 59.5 | 78.6 | 91.3 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 4.2 | 8.5 | 8.5 | 10.6 | 12.7 | 21.2 |
| 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: P640179

CATALOG NUMBER: GWS-SA5D-735-U-SL3-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 | 9526.2 |
| 2.5° | 9483.8 | 9417.9 | 9420.0 | 9432.8 | 9392.4 | 9330.8 | 9290.5 | 9239.5 | 9207.6 | 9201.3 | 9224.6 |
| 5° | 9347.8 | 9271.4 | 9218.3 | 9163.0 | 9048.3 | 8912.4 | 8806.2 | 8719.1 | 8661.8 | 8640.5 | 8615.0 |
| 7.5° | 9160.9 | 9061.1 | 8927.3 | 8772.2 | 8564.1 | 8321.9 | 8152.0 | 7992.7 | 7882.2 | 7850.4 | 7835.5 |
| 10° | 8974.0 | 8829.6 | 8591.7 | 8302.8 | 7956.6 | 7629.5 | 7321.5 | 7085.7 | 6898.8 | 6792.6 | 6826.6 |
| 12.5° | 8780.7 | 8602.3 | 8230.6 | 7786.7 | 7304.5 | 6811.7 | 6408.2 | 6017.4 | 5715.7 | 5564.9 | 5520.3 |
| 15° | 8610.8 | 8368.6 | 7850.4 | 7249.3 | 6607.8 | 5987.6 | 5403.5 | 4817.3 | 4435.0 | 4226.8 | 4169.5 |
| 17.5° | 8466.3 | 8152.0 | 7448.9 | 6701.3 | 5934.5 | 5050.9 | 4333.0 | 3789.3 | 3528.0 | 3413.3 | 3404.8 |
| 20° | 8324.0 | 7939.6 | 7051.8 | 6110.8 | 5157.1 | 4167.3 | 3525.9 | 3271.0 | 3177.5 | 3137.2 | 3135.1 |
| 22.5° | 8196.6 | 7716.6 | 6633.3 | 5520.3 | 4384.0 | 3502.5 | 3149.9 | 3039.5 | 3014.0 | 3014.0 | 3009.7 |
| 25° | 8088.3 | 7493.5 | 6204.3 | 4893.7 | 3685.2 | 3118.1 | 2954.5 | 2907.8 | 2918.4 | 2937.5 | 2939.6 |
| 27.5° | 8043.7 | 7319.4 | 5790.1 | 4250.2 | 3203.0 | 2895.0 | 2820.7 | 2814.3 | 2844.1 | 2873.8 | 2878.0 |
| 30° | 8090.4 | 7200.4 | 5365.3 | 3634.2 | 2914.2 | 2759.1 | 2725.1 | 2737.9 | 2774.0 | 2803.7 | 2803.7 |
| 32.5° | 8234.8 | 7141.0 | 4932.0 | 3183.9 | 2746.4 | 2663.5 | 2652.9 | 2665.6 | 2693.3 | 2710.3 | 2712.4 |
| 35° | 8479.1 | 7164.3 | 4483.8 | 2880.2 | 2638.0 | 2593.4 | 2591.3 | 2599.8 | 2610.4 | 2621.0 | 2623.2 |
| 37.5° | 8787.1 | 7268.4 | 4003.8 | 2703.9 | 2567.9 | 2542.5 | 2538.2 | 2536.1 | 2538.2 | 2538.2 | 2540.3 |
| 40° | 9088.7 | 7425.6 | 3574.7 | 2599.8 | 2519.1 | 2497.8 | 2487.2 | 2472.4 | 2470.2 | 2466.0 | 2463.9 |
| 42.5° | 9311.7 | 7546.6 | 3232.8 | 2525.5 | 2474.5 | 2449.0 | 2436.3 | 2412.9 | 2410.8 | 2408.6 | 2406.5 |
| 45° | 9479.5 | 7648.6 | 2948.1 | 2453.2 | 2427.8 | 2404.4 | 2376.8 | 2355.5 | 2359.8 | 2364.0 | 2364.0 |
| 47.5° | 9668.5 | 7737.8 | 2740.0 | 2385.3 | 2370.4 | 2347.0 | 2313.1 | 2298.2 | 2313.1 | 2327.9 | 2327.9 |
| 50° | 9897.9 | 7863.1 | 2570.1 | 2317.3 | 2310.9 | 2283.3 | 2253.6 | 2247.2 | 2264.2 | 2285.4 | 2285.4 |
| 52.5° | 10065.7 | 7971.5 | 2449.0 | 2249.3 | 2249.3 | 2213.2 | 2187.7 | 2185.6 | 2204.7 | 2226.0 | 2228.1 |
| 55° | 10380.1 | 8224.2 | 2406.5 | 2170.7 | 2162.3 | 2134.6 | 2115.5 | 2100.7 | 2124.0 | 2143.1 | 2143.1 |
| 57.5° | 10734.8 | 8559.8 | 2417.1 | 2058.2 | 2047.6 | 2039.1 | 2024.2 | 2007.2 | 2013.6 | 2034.8 | 2036.9 |
| 60° | 9982.9 | 7909.9 | 2300.3 | 1945.6 | 1939.2 | 1935.0 | 1915.9 | 1886.1 | 1894.6 | 1911.6 | 1913.7 |
| 62.5° | 6973.2 | 5257.0 | 1860.6 | 1805.4 | 1826.7 | 1824.5 | 1799.0 | 1765.1 | 1767.2 | 1790.6 | 1790.6 |
| 65° | 3619.3 | 2844.1 | 1633.4 | 1678.0 | 1709.8 | 1697.1 | 1654.6 | 1624.9 | 1620.6 | 1650.4 | 1644.0 |
| 67.5° | 1561.2 | 1552.7 | 1486.8 | 1544.2 | 1578.1 | 1550.5 | 1505.9 | 1457.1 | 1461.3 | 1471.9 | 1463.5 |
| 70° | 1257.4 | 1295.7 | 1323.3 | 1384.9 | 1412.5 | 1361.5 | 1312.6 | 1285.0 | 1261.7 | 1259.5 | 1244.7 |
| 72.5° | 1004.7 | 1057.8 | 1119.4 | 1183.1 | 1191.6 | 1140.6 | 1079.0 | 1053.5 | 1017.4 | 1015.3 | 1000.4 |
| 75° | 756.2 | 800.8 | 849.6 | 900.6 | 900.6 | 851.7 | 811.4 | 798.6 | 756.2 | 743.4 | 730.7 |
| 77.5° | 516.1 | 543.7 | 582.0 | 594.7 | 607.5 | 588.4 | 548.0 | 526.8 | 477.9 | 465.2 | 448.2 |
| 80° | 325.0 | 344.1 | 367.5 | 376.0 | 388.7 | 365.3 | 333.5 | 310.1 | 276.1 | 265.5 | 257.0 |
| 82.5° | 195.4 | 208.2 | 223.0 | 227.3 | 237.9 | 220.9 | 191.2 | 174.2 | 155.1 | 146.6 | 140.2 |
| 85° | 99.8 | 106.2 | 114.7 | 116.8 | 114.7 | 97.7 | 87.1 | 78.6 | 65.8 | 63.7 | 59.5 |
| 87.5° | 25.5 | 29.7 | 31.9 | 29.7 | 27.6 | 21.2 | 14.9 | 10.6 | 4.2 | 4.2 | 2.1 |
| 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

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-7
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/04/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-735-U-T2**
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 3388 | CRI (Ra): | 73.1 | R9: | -34.6 |
| CIE u': | 0.2371 | R1: | 68.9 | R10: | 57.8 |
| CIE v': | 0.5177 | R2: | 81.1 | R11: | 68.6 |
| Duv: | 0.0032 | R3: | 93.1 | R12: | 53.9 |
| CIE x: | 0.4153 | R4: | 71.6 | R13: | 70.9 |
| CIE y: | 0.4030 | R5: | 69.4 | R14: | 96.2 |
| CIE z: | 0.1817 | R6: | 75.0 | | |
| Peak Wavelength (nm): | 590 | R7: | 79.5 | | |
| Dominant Wavelength (nm): | 580 | R8: | 46.4 | | |
| Purity: | 45.7 | | | | |
| Rf: | 76.9 | | | | |
| Rg: | 94.4 | | | | |



Test Conditions

Stabilization Time: 81M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0/30%
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-7

| 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: SP1-2101-121-7

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

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 | 2672 | 0.0 | 490 | 34553 | 4.9 | 620 | 136720 | 35.6 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 8.0 | 625 | 126308 | 27.9 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 12.1 | 630 | 114625 | 20.7 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 18.1 | 635 | 103216 | 15.5 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 25.4 | 640 | 92605 | 11.1 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 33.9 | 645 | 83234 | 8.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 43.0 | 650 | 73263 | 5.4 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 50.1 | 655 | 64627 | 3.7 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 57.9 | 660 | 56614 | 2.4 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 64.0 | 665 | 49537 | 1.6 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.0 | 540 | 107316 | 69.9 | 670 | 42866 | 0.9 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.0 | 545 | 113101 | 75.3 | 675 | 36708 | 0.6 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 0.0 | 550 | 120690 | 82.0 | 680 | 31814 | 0.4 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 0.1 | 555 | 128583 | 87.8 | 685 | 27485 | 0.2 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 0.3 | 560 | 137796 | 93.6 | 690 | 23698 | 0.1 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 0.8 | 565 | 146577 | 97.5 | 695 | 20309 | 0.1 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 1.6 | 570 | 154581 | 100.5 | 700 | 17890 | 0.1 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 2.4 | 575 | 162633 | 101.2 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 2.5 | 580 | 168101 | 99.9 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 2.1 | 585 | 173145 | 96.2 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 1.8 | 590 | 174675 | 90.3 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 1.7 | 595 | 173724 | 82.3 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 1.5 | 600 | 171241 | 73.8 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 1.7 | 605 | 165134 | 64.0 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 2.2 | 610 | 156652 | 53.8 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 3.3 | 615 | 147879 | 44.6 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Scotopic Flux vs. Wavelength



Scotopic Lumens: 12126

S/P: 1.36

| 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 | 2672 | 0.0 | 490 | 34553 | 53.2 | 620 | 136720 | 1.7 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 71.7 | 625 | 126308 | 1.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 91.4 | 630 | 114625 | 0.6 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 110.0 | 635 | 103216 | 0.4 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 125.1 | 640 | 92605 | 0.2 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 135.7 | 645 | 83234 | 0.1 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 140.8 | 650 | 73263 | 0.1 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 139.6 | 655 | 64627 | 0.1 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 135.7 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.1 | 535 | 103269 | 128.7 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.2 | 540 | 107316 | 118.6 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.6 | 545 | 113101 | 108.4 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 2.0 | 550 | 120690 | 98.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 5.9 | 555 | 128583 | 87.9 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 14.3 | 560 | 137796 | 77.0 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 30.5 | 565 | 146577 | 65.8 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 55.5 | 570 | 154581 | 54.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 77.4 | 575 | 162633 | 44.3 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 73.6 | 580 | 168101 | 34.6 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 53.7 | 585 | 173145 | 26.5 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 41.9 | 590 | 174675 | 19.5 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 34.3 | 595 | 173724 | 13.9 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 27.9 | 600 | 171241 | 9.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 27.1 | 605 | 165134 | 6.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 31.3 | 610 | 156652 | 4.2 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 40.0 | 615 | 147879 | 2.7 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: 4490.7 M/P: 0.5

| 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 | 2672 | 0.0 | 490 | 34553 | 28.8 | 620 | 136720 | 0.1 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 36.6 | 625 | 126308 | 0.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 43.9 | 630 | 114625 | 0.0 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 49.6 | 635 | 103216 | 0.0 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 53.0 | 640 | 92605 | 0.0 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 53.5 | 645 | 83234 | 0.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 51.6 | 650 | 73263 | 0.0 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 47.3 | 655 | 64627 | 0.0 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 42.5 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 37.2 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.1 | 540 | 107316 | 31.4 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.4 | 545 | 113101 | 26.3 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 1.4 | 550 | 120690 | 21.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 3.7 | 555 | 128583 | 17.3 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 8.9 | 560 | 137796 | 13.6 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 18.2 | 565 | 146577 | 10.3 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 33.2 | 570 | 154581 | 7.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 45.6 | 575 | 162633 | 5.4 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 43.8 | 580 | 168101 | 3.8 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 32.2 | 585 | 173145 | 2.6 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 25.6 | 590 | 174675 | 1.7 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 21.2 | 595 | 173724 | 1.1 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 17.4 | 600 | 171241 | 0.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 16.6 | 605 | 165134 | 0.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 18.6 | 610 | 156652 | 0.3 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 22.7 | 615 | 147879 | 0.2 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

Summary

$R_f = 76.9$
 $R_g = 94.4$
 $CIE R_a = 73.1$
 $R_g = -34.6$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)