

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: P640223

Luminaire Tested: GWS-SA5D-740-U-AFL-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640223
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-47)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5D-740-U-AFL-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (80) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 27253.1 lumens
Efficiency: N/A
Efficacy: 133.2 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G2

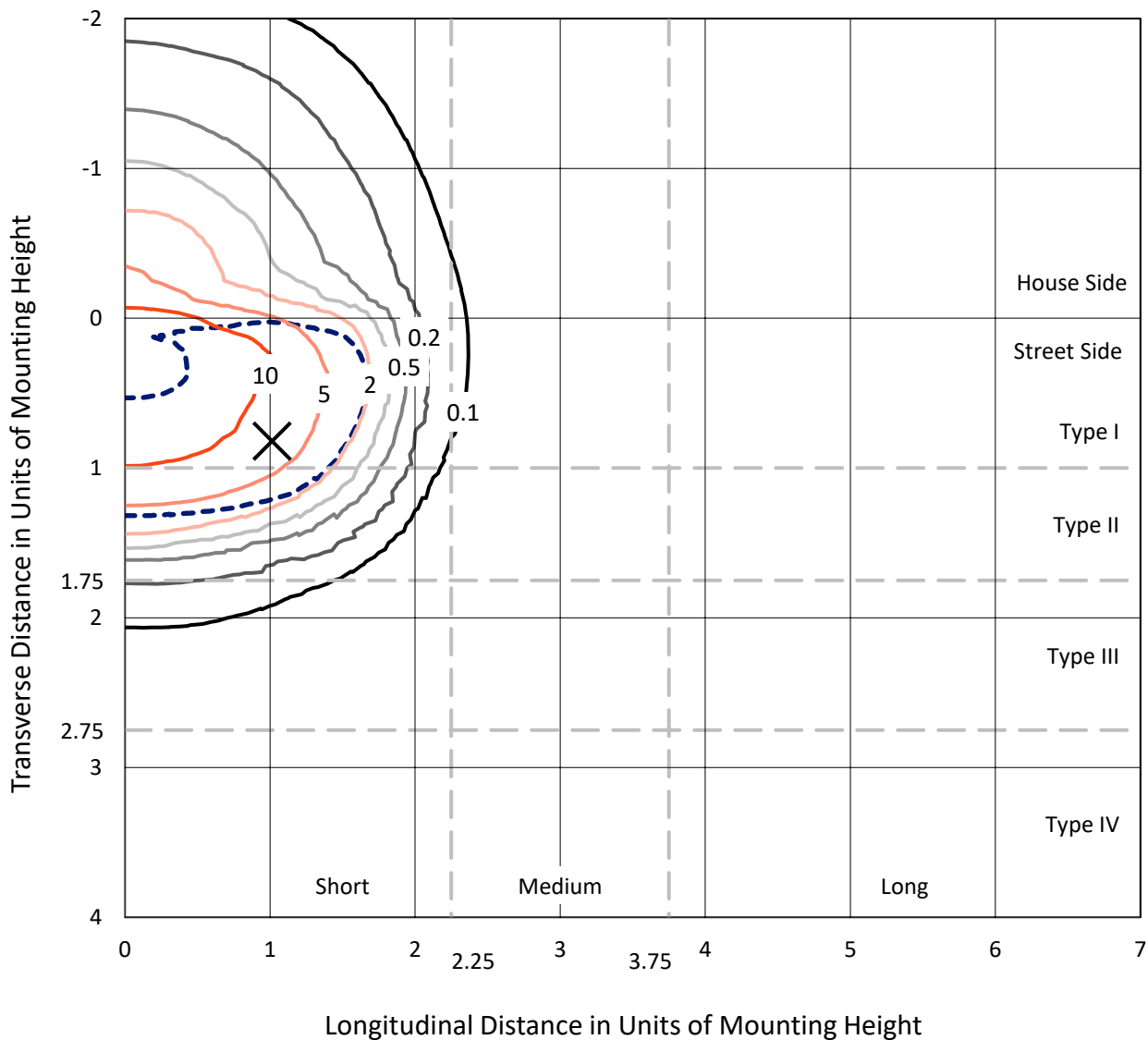
Input Watts (W): 204.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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 CATALOG NUMBER: GWS-SA5D-740-U-AFL-W-GRSWH

Iso-Footcandle Lines of Horizontal Illumination

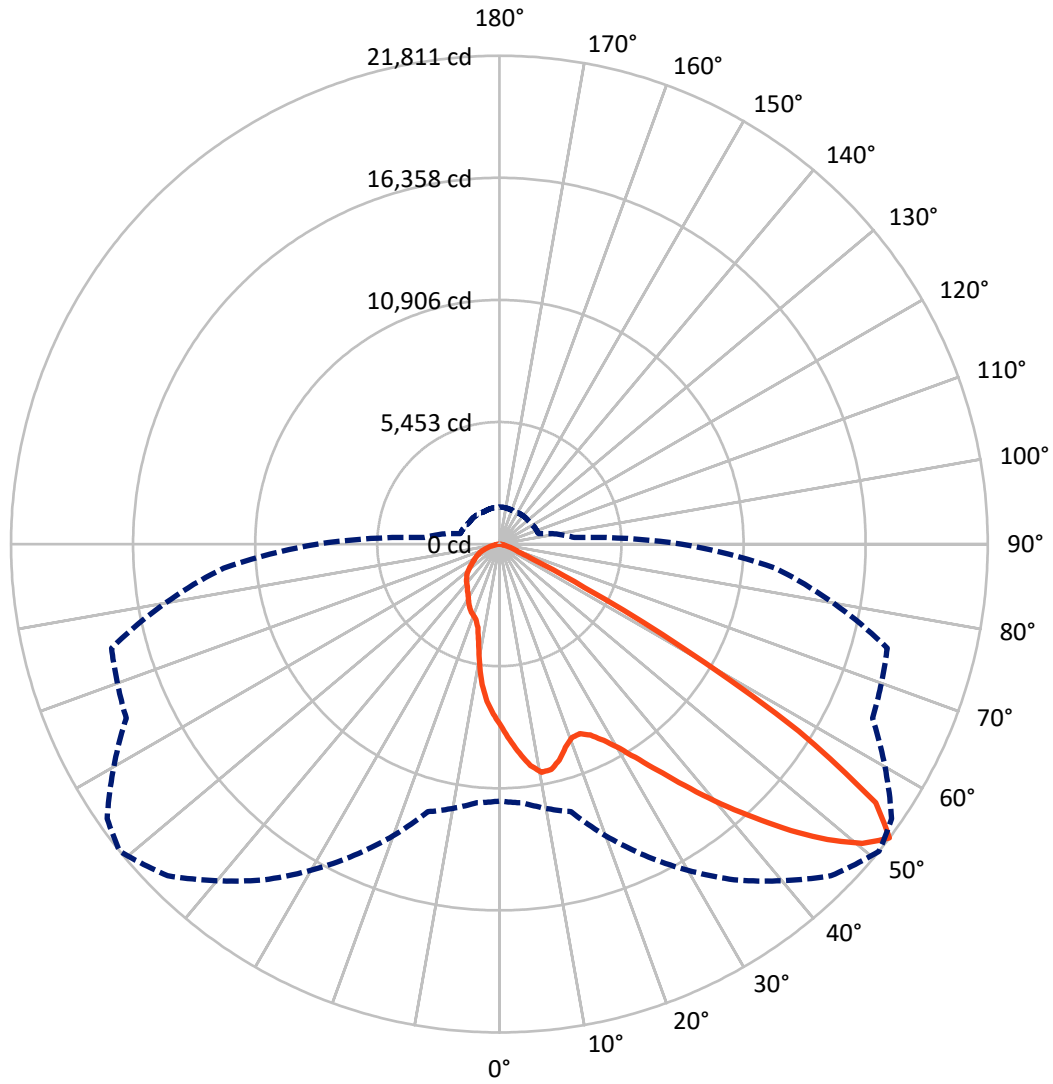
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 15.9 fc
 Type II - Short - N/A

REPORT NUMBER: P640223
CATALOG NUMBER: GWS-SA5D-740-U-AFL-W-GRSWH

Luminous Intensity Polar Plot



— Vertical Plane Through 51-Deg Lateral - - - Horizontal Cone Through 52.5-Deg Vertical

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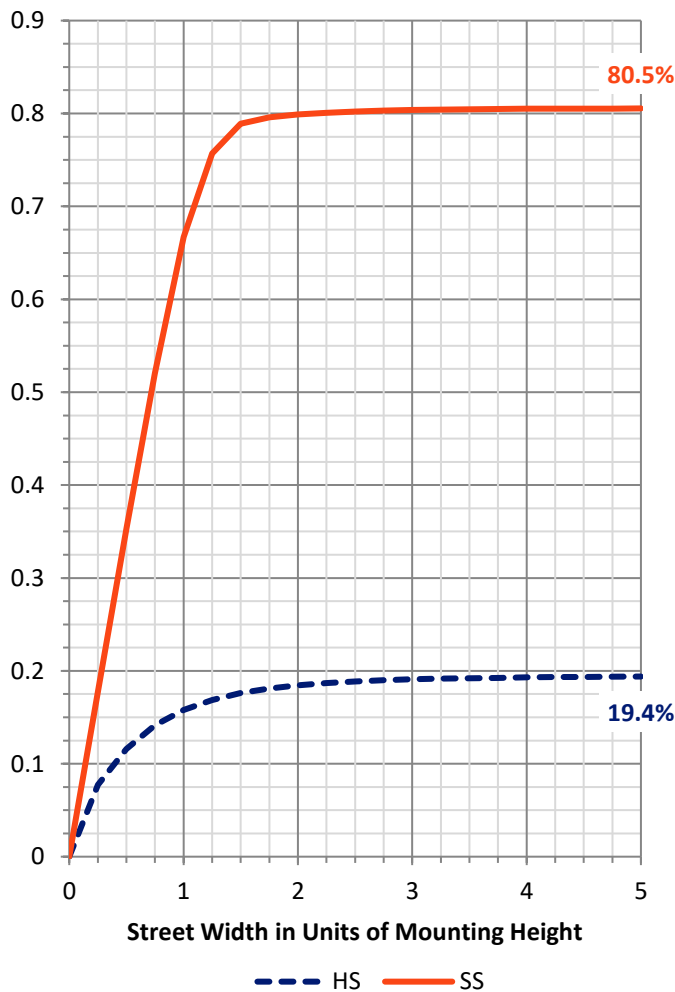
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5310.0 | 0.0 | 5310.0 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| Street Side | Lumens | 21943.1 | 0.0 | 21943.1 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| Total | Lumens | 27253.1 | 0.0 | 27253.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 757.2 | 2.8 |
| 10°-20° | 1967.5 | 7.2 |
| 20°-30° | 3199.0 | 11.7 |
| 30°-40° | 5069.7 | 18.6 |
| 40°-50° | 7646.3 | 28.1 |
| 50°-60° | 6614.6 | 24.3 |
| 60°-70° | 1499.6 | 5.5 |
| 70°-80° | 442.2 | 1.6 |
| 80°-90° | 57.0 | 0.2 |
| 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° | 27253.1 | 100.0 |
| 0°-180° | 27253.1 | 100.0 |

Coefficient of Utilization



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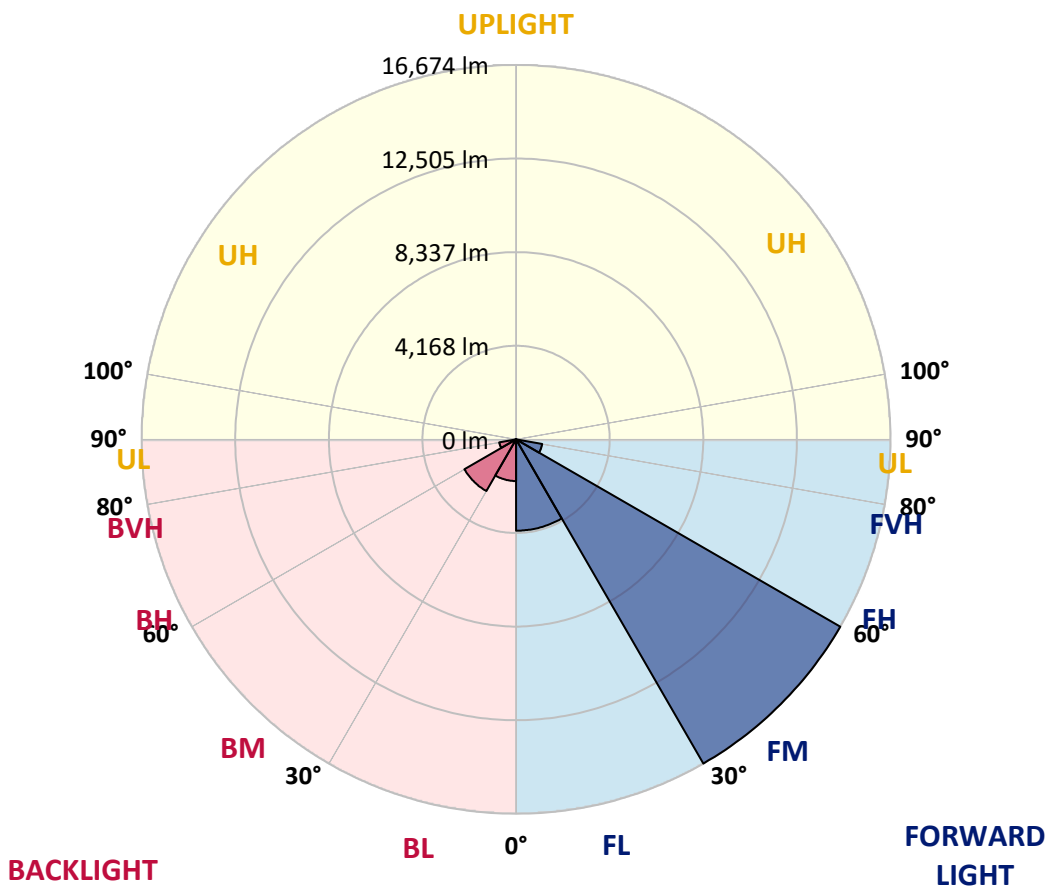
CATALOG NUMBER: GWS-SA5D-740-U-AFL-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 4067.6 | 14.9 | | | |
| FM (30°-60°) | 16673.8 | 61.2 | | | |
| FH (60°-80°) | 1180.2 | 4.3 | | | G1/1800 |
| FVH (80°-90°) | 21.5 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1856.2 | 6.8 | B3/2500 | | |
| BM (30°-60°) | 2656.8 | 9.7 | B3/5000 | | |
| BH (60°-80°) | 761.6 | 2.8 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 35.5 | 0.1 | | | 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° | 51° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 |
| 2.5° | 9042.8 | 9094.5 | 9014.8 | 8984.6 | 8935.1 | 8849.0 | 8749.9 | 8721.9 | 8508.7 | 8368.7 | 8211.5 |
| 5° | 9951.6 | 9979.6 | 9915.0 | 9850.4 | 9727.6 | 9574.7 | 9383.1 | 9342.1 | 8954.5 | 8633.6 | 8299.8 |
| 7.5° | 10154.0 | 10143.3 | 10199.3 | 10235.9 | 10220.8 | 10160.5 | 9990.4 | 9910.7 | 9447.7 | 8939.4 | 8446.3 |
| 10° | 9352.9 | 9292.6 | 9499.3 | 9744.9 | 10039.9 | 10380.2 | 10360.8 | 10354.3 | 9951.6 | 9350.8 | 8633.6 |
| 12.5° | 8291.2 | 8261.0 | 8429.0 | 8737.0 | 9294.8 | 10048.5 | 10330.6 | 10550.3 | 10406.0 | 9742.7 | 8842.5 |
| 15° | 7683.9 | 7673.1 | 7787.3 | 8009.1 | 8452.7 | 9404.6 | 10007.6 | 10442.6 | 10795.8 | 10162.6 | 9064.3 |
| 17.5° | 7574.1 | 7580.5 | 7619.3 | 7746.3 | 8065.1 | 8849.0 | 9546.7 | 10154.0 | 11099.4 | 10623.5 | 9342.1 |
| 20° | 7894.9 | 7938.0 | 7871.3 | 7890.6 | 8062.9 | 8648.7 | 9232.3 | 9863.3 | 11293.3 | 11086.5 | 9641.5 |
| 22.5° | 8607.8 | 8592.7 | 8446.3 | 8360.1 | 8362.3 | 8771.4 | 9197.8 | 9727.6 | 11420.3 | 11536.6 | 9912.8 |
| 25° | 9415.4 | 9398.1 | 9223.7 | 9032.0 | 8911.4 | 9105.2 | 9445.5 | 9871.9 | 11534.5 | 11947.9 | 10130.3 |
| 27.5° | 10369.4 | 10315.5 | 10121.7 | 9876.2 | 9609.2 | 9693.2 | 9923.6 | 10261.7 | 11711.0 | 12352.8 | 10274.6 |
| 30° | 11293.3 | 11355.7 | 11077.9 | 10787.2 | 10505.1 | 10453.4 | 10586.9 | 10892.7 | 12070.7 | 12826.6 | 10446.9 |
| 32.5° | 12518.6 | 12497.1 | 12189.1 | 11810.1 | 11407.4 | 11368.6 | 11474.2 | 11754.1 | 12716.8 | 13481.3 | 10709.6 |
| 35° | 14002.4 | 14006.7 | 13569.6 | 13057.0 | 12484.2 | 12380.8 | 12557.4 | 12828.7 | 13679.4 | 14368.5 | 11125.3 |
| 37.5° | 15544.4 | 15537.9 | 15156.7 | 14575.3 | 13793.5 | 13647.1 | 13849.5 | 14052.0 | 14883.2 | 15576.7 | 11771.3 |
| 40° | 16625.5 | 16668.5 | 16489.8 | 16184.0 | 15443.2 | 15085.7 | 15264.4 | 15404.4 | 16192.6 | 16998.0 | 12622.0 |
| 42.5° | 17239.2 | 17303.8 | 17342.6 | 17525.7 | 17135.9 | 16754.7 | 16690.1 | 16763.3 | 17362.0 | 18318.2 | 13421.0 |
| 45° | 17370.6 | 17456.7 | 17738.9 | 18417.2 | 18568.0 | 18460.3 | 18249.3 | 18072.7 | 18234.2 | 19255.0 | 13944.3 |
| 47.5° | 16791.3 | 16942.0 | 17545.0 | 18731.6 | 19612.5 | 19950.6 | 19715.8 | 19446.6 | 18738.1 | 19496.2 | 13890.5 |
| 50° | 14495.6 | 14672.2 | 16031.1 | 18089.9 | 19761.1 | 20992.9 | 21014.4 | 20616.0 | 18677.8 | 18800.6 | 13214.2 |
| 52.5° | 11476.3 | 11596.9 | 12374.3 | 15335.5 | 18303.1 | 20949.8 | 21811.2 | 21384.8 | 18387.1 | 17930.5 | 12367.9 |
| 55° | 6859.1 | 7052.9 | 7778.7 | 10117.4 | 14258.7 | 18568.0 | 20402.8 | 20609.6 | 18244.9 | 17200.5 | 11790.7 |
| 57.5° | 2315.1 | 2409.8 | 3103.3 | 4468.6 | 8403.2 | 13595.4 | 15764.0 | 16603.9 | 16563.0 | 16084.9 | 10664.4 |
| 60° | 1102.6 | 1124.2 | 1264.1 | 1694.9 | 3363.9 | 7104.6 | 9331.4 | 10300.5 | 11183.4 | 11271.7 | 6635.1 |
| 62.5° | 839.9 | 852.8 | 923.9 | 1016.5 | 1352.4 | 2993.4 | 4277.0 | 5017.8 | 5360.2 | 4600.0 | 2416.3 |
| 65° | 702.1 | 712.8 | 766.7 | 824.8 | 919.6 | 1296.4 | 1641.0 | 1893.0 | 1705.6 | 1328.7 | 1152.2 |
| 67.5° | 585.8 | 594.4 | 635.3 | 697.8 | 762.4 | 867.9 | 911.0 | 936.8 | 982.0 | 1102.6 | 1059.6 |
| 70° | 458.7 | 467.3 | 510.4 | 564.2 | 626.7 | 652.5 | 693.4 | 719.3 | 809.7 | 964.8 | 960.5 |
| 72.5° | 353.2 | 364.0 | 387.6 | 422.1 | 473.8 | 499.6 | 544.9 | 575.0 | 626.7 | 751.6 | 803.3 |
| 75° | 258.4 | 264.9 | 286.4 | 297.2 | 303.7 | 297.2 | 342.4 | 376.9 | 445.8 | 493.2 | 506.1 |
| 77.5° | 105.5 | 118.4 | 114.1 | 114.1 | 135.7 | 163.7 | 187.4 | 208.9 | 256.3 | 284.3 | 286.4 |
| 80° | 43.1 | 47.4 | 56.0 | 62.5 | 75.4 | 96.9 | 112.0 | 120.6 | 142.1 | 159.4 | 172.3 |
| 82.5° | 25.8 | 28.0 | 32.3 | 34.5 | 43.1 | 56.0 | 64.6 | 71.1 | 88.3 | 105.5 | 112.0 |
| 85° | 12.9 | 12.9 | 15.1 | 17.2 | 21.5 | 25.8 | 30.1 | 34.5 | 45.2 | 56.0 | 62.5 |
| 87.5° | 2.2 | 2.2 | 2.2 | 4.3 | 6.5 | 8.6 | 10.8 | 12.9 | 15.1 | 17.2 | 21.5 |
| 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: P640223

CATALOG NUMBER: GWS-SA5D-740-U-AFL-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 | 8114.6 |
| 2.5° | 8118.9 | 8002.6 | 7866.9 | 7759.3 | 7634.4 | 7541.8 | 7410.4 | 7328.6 | 7251.0 | 7186.4 | 7139.0 |
| 5° | 8127.5 | 7931.6 | 7649.4 | 7399.6 | 7141.2 | 6895.7 | 6643.7 | 6439.1 | 6256.1 | 6103.2 | 6090.3 |
| 7.5° | 8177.1 | 7894.9 | 7453.5 | 7016.3 | 6512.4 | 6025.7 | 5539.0 | 5142.7 | 4841.2 | 4684.0 | 4651.7 |
| 10° | 8261.0 | 7890.6 | 7253.2 | 6555.4 | 5696.2 | 4912.3 | 4335.1 | 4033.6 | 3859.2 | 3796.7 | 3775.2 |
| 12.5° | 8349.3 | 7879.9 | 6996.9 | 5905.1 | 4712.0 | 4025.0 | 3708.4 | 3671.8 | 3704.1 | 3708.4 | 3706.3 |
| 15° | 8457.0 | 7873.4 | 6673.9 | 5142.7 | 3992.7 | 3613.7 | 3635.2 | 3712.7 | 3788.1 | 3805.3 | 3805.3 |
| 17.5° | 8588.4 | 7858.3 | 6234.6 | 4397.6 | 3542.6 | 3534.0 | 3648.1 | 3751.5 | 3822.6 | 3835.5 | 3835.5 |
| 20° | 8726.2 | 7819.6 | 5694.0 | 3790.3 | 3359.6 | 3484.5 | 3607.2 | 3686.9 | 3736.4 | 3753.7 | 3755.8 |
| 22.5° | 8821.0 | 7716.2 | 5071.6 | 3340.2 | 3245.4 | 3389.7 | 3478.0 | 3559.8 | 3559.8 | 3516.8 | 3503.8 |
| 25° | 8840.4 | 7494.4 | 4397.6 | 3032.2 | 3109.7 | 3243.3 | 3333.7 | 3286.3 | 3198.0 | 3163.6 | 3161.4 |
| 27.5° | 8769.3 | 7171.3 | 3732.1 | 2812.5 | 2946.1 | 3079.6 | 3064.5 | 2995.6 | 2956.8 | 2922.4 | 2935.3 |
| 30° | 8683.1 | 6783.7 | 3155.0 | 2631.6 | 2756.6 | 2887.9 | 2836.2 | 2812.5 | 2784.6 | 2745.8 | 2754.4 |
| 32.5° | 8625.0 | 6350.8 | 2711.3 | 2491.7 | 2629.5 | 2651.0 | 2687.6 | 2685.5 | 2659.6 | 2586.4 | 2582.1 |
| 35° | 8642.2 | 5913.7 | 2414.1 | 2377.5 | 2524.0 | 2515.4 | 2584.3 | 2571.3 | 2392.6 | 2291.4 | 2284.9 |
| 37.5° | 8780.1 | 5493.7 | 2239.7 | 2287.1 | 2356.0 | 2409.8 | 2470.1 | 2315.1 | 2252.6 | 2188.0 | 2192.3 |
| 40° | 9042.8 | 5103.9 | 2144.9 | 2237.5 | 2254.8 | 2334.5 | 2194.5 | 2192.3 | 2164.3 | 2106.2 | 2104.0 |
| 42.5° | 9340.0 | 4774.4 | 2080.3 | 2213.9 | 2190.2 | 2205.2 | 2056.6 | 2073.9 | 2071.7 | 2035.1 | 2024.3 |
| 45° | 9520.9 | 4470.8 | 2028.7 | 2125.6 | 2132.0 | 1981.3 | 1936.0 | 1955.4 | 1966.2 | 1946.8 | 1944.7 |
| 47.5° | 9333.5 | 4121.9 | 1974.8 | 1989.9 | 2045.9 | 1880.1 | 1824.1 | 1826.2 | 1845.6 | 1847.8 | 1839.1 |
| 50° | 8808.1 | 3732.1 | 1910.2 | 1873.6 | 1837.0 | 1774.5 | 1722.8 | 1712.1 | 1731.5 | 1750.8 | 1757.3 |
| 52.5° | 8129.7 | 3359.6 | 1802.5 | 1746.5 | 1660.4 | 1660.4 | 1636.7 | 1602.2 | 1628.1 | 1653.9 | 1662.5 |
| 55° | 7632.2 | 3083.9 | 1649.6 | 1587.2 | 1492.4 | 1524.7 | 1520.4 | 1490.3 | 1524.7 | 1544.1 | 1550.6 |
| 57.5° | 6613.6 | 2478.7 | 1451.5 | 1432.1 | 1352.4 | 1391.2 | 1399.8 | 1361.0 | 1343.8 | 1348.1 | 1354.6 |
| 60° | 3925.9 | 1600.1 | 1309.4 | 1307.2 | 1236.1 | 1281.4 | 1307.2 | 1268.4 | 1216.8 | 1223.2 | 1231.8 |
| 62.5° | 1761.6 | 1223.2 | 1130.6 | 1122.0 | 1119.9 | 1178.0 | 1206.0 | 1169.4 | 1096.2 | 1102.6 | 1111.2 |
| 65° | 1109.1 | 1057.4 | 982.0 | 982.0 | 1016.5 | 1066.0 | 1087.5 | 1057.4 | 973.4 | 962.6 | 971.3 |
| 67.5° | 1029.4 | 984.2 | 906.6 | 891.6 | 908.8 | 949.7 | 951.9 | 893.7 | 844.2 | 835.6 | 835.6 |
| 70° | 923.9 | 889.4 | 814.0 | 783.9 | 777.4 | 775.3 | 768.8 | 753.7 | 721.4 | 712.8 | 717.1 |
| 72.5° | 764.5 | 740.8 | 693.4 | 661.1 | 643.9 | 641.8 | 615.9 | 603.0 | 575.0 | 570.7 | 568.5 |
| 75° | 506.1 | 512.5 | 512.5 | 508.2 | 493.2 | 486.7 | 458.7 | 445.8 | 413.5 | 400.6 | 398.4 |
| 77.5° | 299.3 | 305.8 | 314.4 | 316.6 | 314.4 | 314.4 | 288.6 | 273.5 | 241.2 | 224.0 | 219.7 |
| 80° | 183.1 | 187.4 | 191.7 | 198.1 | 189.5 | 183.1 | 159.4 | 144.3 | 129.2 | 118.4 | 116.3 |
| 82.5° | 118.4 | 122.8 | 124.9 | 129.2 | 124.9 | 116.3 | 96.9 | 88.3 | 77.5 | 68.9 | 66.8 |
| 85° | 66.8 | 68.9 | 73.2 | 73.2 | 66.8 | 60.3 | 49.5 | 43.1 | 36.6 | 32.3 | 32.3 |
| 87.5° | 23.7 | 23.7 | 23.7 | 25.8 | 21.5 | 19.4 | 12.9 | 8.6 | 6.5 | 6.5 | 6.5 |
| 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



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)