

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: P636301

Luminaire Tested: GWS-SA3F-740-U-T3R-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P636301
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3F-740-U-T3R-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (48) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21436.7 lumens
Efficiency: N/A
Efficacy: 117.0 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 183.2
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

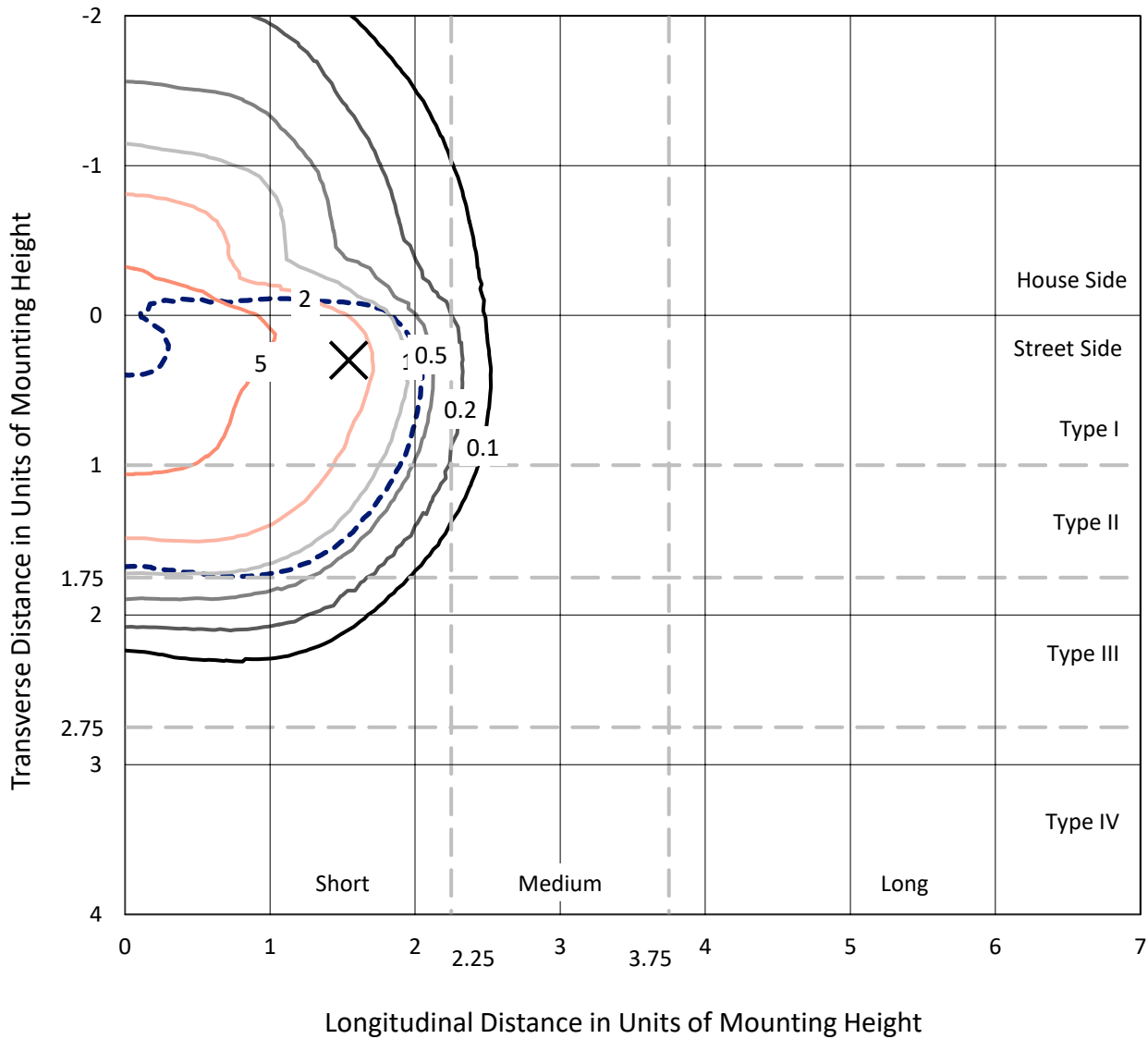


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Iso-Footcandle Lines of Horizontal Illumination

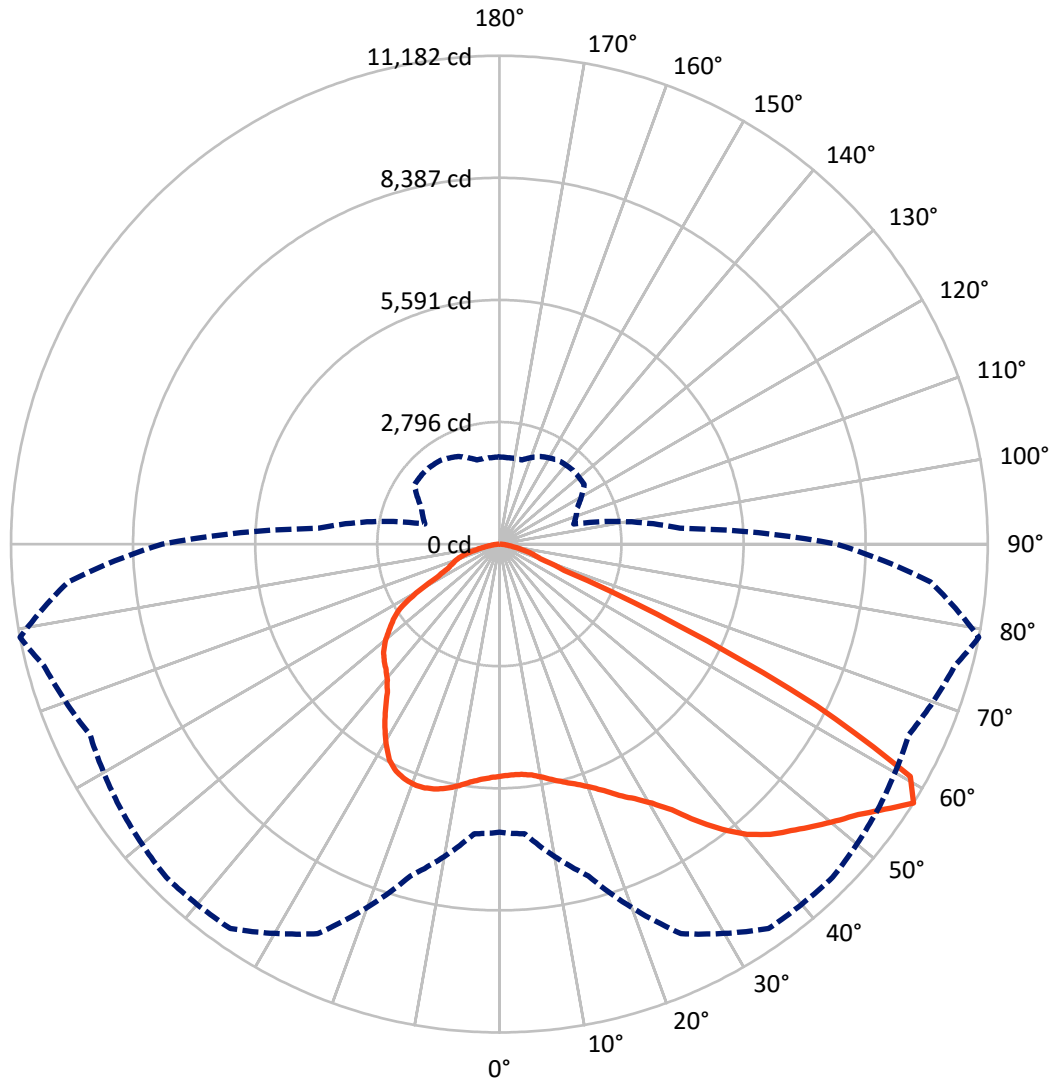
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.6 fc
 Type II - Short - N/A

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CATALOG NUMBER: GWS-SA3F-740-U-T3R-W-GRSWH

Luminous Intensity Polar Plot



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

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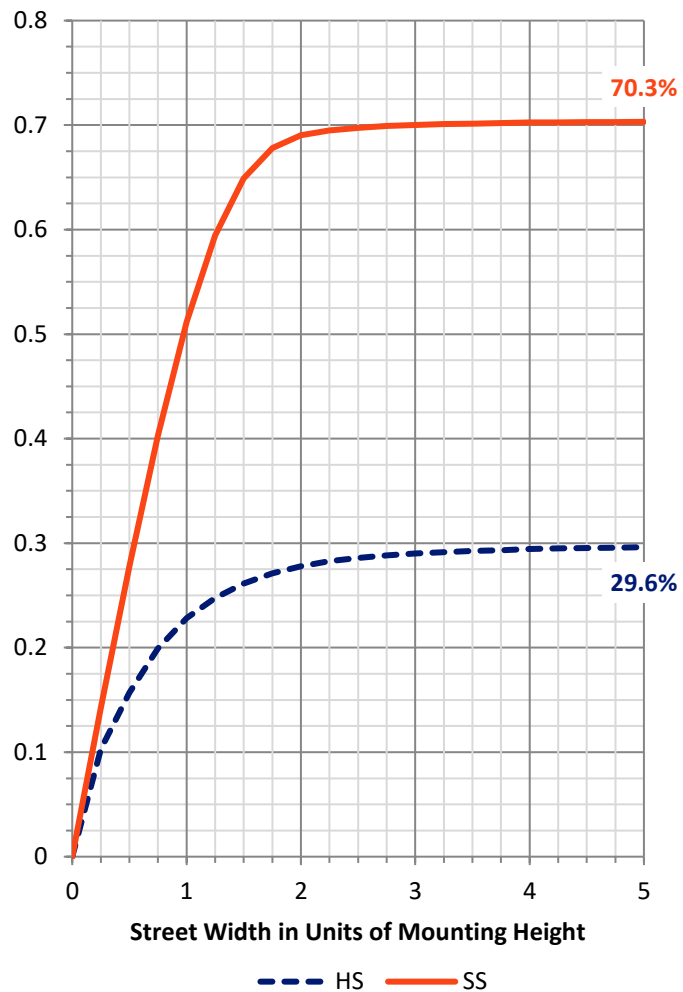
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6372.1 | 0.0 | 6372.1 |
| | % Fixture | 29.7 | 0.0 | 29.7 |
| Street Side | Lumens | 15064.6 | 0.0 | 15064.6 |
| | % Fixture | 70.3 | 0.0 | 70.3 |
| Total | Lumens | 21436.7 | 0.0 | 21436.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 492.0 | 2.3 |
| 10°-20° | 1367.2 | 6.4 |
| 20°-30° | 2317.5 | 10.8 |
| 30°-40° | 3547.2 | 16.5 |
| 40°-50° | 4729.9 | 22.1 |
| 50°-60° | 5462.7 | 25.5 |
| 60°-70° | 2838.6 | 13.2 |
| 70°-80° | 603.4 | 2.8 |
| 80°-90° | 78.2 | 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° | 21436.7 | 100.0 |
| 0°-180° | 21436.7 | 100.0 |

Coefficient of Utilization



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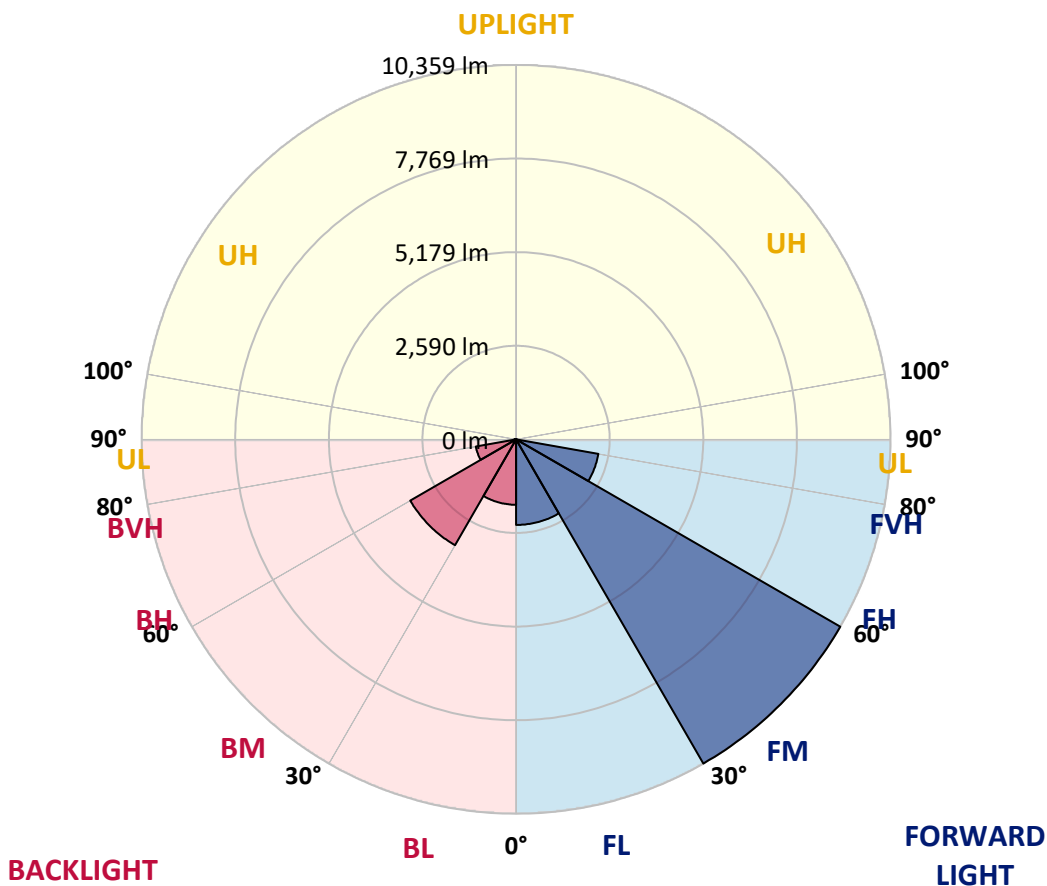
CATALOG NUMBER: GWS-SA3F-740-U-T3R-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2367.1 | 11.0 | | | |
| FM (30°-60°) | 10358.8 | 48.3 | | | |
| FH (60°-80°) | 2311.4 | 10.8 | | | G2/5000 |
| FVH (80°-90°) | 27.2 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1809.6 | 8.4 | B3/2500 | | |
| BM (30°-60°) | 3381.0 | 15.8 | B3/5000 | | |
| BH (60°-80°) | 1130.6 | 5.3 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 50.9 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 |
| 2.5° | 5070.6 | 5060.1 | 5063.6 | 5077.6 | 5130.2 | 5168.8 | 5209.1 | 5245.9 | 5281.0 | 5291.5 | 5300.2 |
| 5° | 4890.1 | 4870.8 | 4876.1 | 4898.9 | 4960.2 | 5025.1 | 5096.9 | 5184.6 | 5268.7 | 5296.7 | 5333.5 |
| 7.5° | 4762.2 | 4758.6 | 4767.4 | 4802.5 | 4867.3 | 4928.7 | 5021.6 | 5146.0 | 5291.5 | 5338.8 | 5403.7 |
| 10° | 4592.1 | 4585.1 | 4620.2 | 4692.0 | 4799.0 | 4897.1 | 5007.5 | 5154.8 | 5358.1 | 5428.2 | 5528.1 |
| 12.5° | 4457.2 | 4453.7 | 4490.5 | 4590.4 | 4727.1 | 4883.1 | 5035.6 | 5200.3 | 5447.5 | 5543.9 | 5666.6 |
| 15° | 4536.1 | 4520.3 | 4522.0 | 4592.1 | 4714.8 | 4898.9 | 5105.7 | 5282.7 | 5536.9 | 5659.5 | 5817.3 |
| 17.5° | 4765.7 | 4737.6 | 4716.6 | 4728.9 | 4799.0 | 4990.0 | 5212.6 | 5393.1 | 5640.3 | 5784.0 | 5976.8 |
| 20° | 5082.9 | 5067.1 | 5009.3 | 4970.7 | 4986.5 | 5154.8 | 5380.9 | 5549.1 | 5775.2 | 5936.5 | 6143.3 |
| 22.5° | 5508.8 | 5470.3 | 5391.4 | 5330.0 | 5282.7 | 5414.2 | 5622.7 | 5768.2 | 5962.8 | 6131.0 | 6346.6 |
| 25° | 6036.4 | 5980.3 | 5855.9 | 5759.5 | 5657.8 | 5792.8 | 5978.5 | 6089.0 | 6220.4 | 6376.4 | 6581.5 |
| 27.5° | 6574.5 | 6527.1 | 6388.7 | 6259.0 | 6132.8 | 6216.9 | 6437.8 | 6500.9 | 6486.8 | 6600.8 | 6776.0 |
| 30° | 7147.6 | 7088.0 | 6956.6 | 6816.3 | 6653.3 | 6707.7 | 6905.7 | 6937.3 | 6788.3 | 6883.0 | 7002.1 |
| 32.5° | 7752.3 | 7694.5 | 7580.5 | 7417.5 | 7233.5 | 7254.5 | 7308.9 | 7338.7 | 7196.7 | 7251.0 | 7342.2 |
| 35° | 8367.5 | 8313.2 | 8197.5 | 8036.2 | 7901.3 | 7773.3 | 7636.6 | 7755.8 | 7673.4 | 7778.6 | 7771.6 |
| 37.5° | 8930.1 | 8875.8 | 8803.9 | 8679.5 | 8448.1 | 8195.7 | 7880.3 | 8027.5 | 8155.4 | 8288.6 | 8265.9 |
| 40° | 9310.5 | 9273.7 | 9291.2 | 9271.9 | 8974.0 | 8474.4 | 7999.4 | 8160.7 | 8509.5 | 8737.3 | 8725.1 |
| 42.5° | 9638.2 | 9601.4 | 9703.1 | 9776.7 | 9426.2 | 8732.1 | 8057.3 | 8211.5 | 8735.6 | 9091.4 | 9073.9 |
| 45° | 9783.7 | 9773.2 | 9941.5 | 10174.6 | 9839.8 | 9005.5 | 8206.3 | 8316.7 | 8907.3 | 9363.1 | 9296.5 |
| 47.5° | 9610.2 | 9647.0 | 9978.3 | 10372.6 | 10183.3 | 9329.8 | 8511.2 | 8539.3 | 9131.7 | 9657.5 | 9470.0 |
| 50° | 9264.9 | 9345.5 | 9792.5 | 10377.9 | 10434.0 | 9696.1 | 8933.6 | 8863.5 | 9433.2 | 9971.3 | 9561.1 |
| 52.5° | 8761.9 | 8846.0 | 9575.1 | 10337.6 | 10577.7 | 10120.2 | 9496.3 | 9396.4 | 9813.5 | 10285.0 | 9576.9 |
| 55° | 7606.8 | 7720.8 | 9077.4 | 10246.4 | 10717.9 | 10505.8 | 10130.8 | 9927.4 | 10304.3 | 10716.2 | 9732.9 |
| 57.5° | 6599.0 | 6658.6 | 7864.5 | 9841.6 | 10746.0 | 10789.8 | 10583.0 | 10341.1 | 10791.5 | 11182.4 | 9908.2 |
| 60° | 4842.8 | 4856.8 | 5941.7 | 8143.2 | 9885.4 | 10625.0 | 10546.1 | 10186.8 | 10560.2 | 10809.1 | 9105.4 |
| 62.5° | 2736.0 | 2737.8 | 3603.6 | 5435.2 | 7384.2 | 8660.2 | 8709.3 | 8392.0 | 8078.3 | 8151.9 | 6337.9 |
| 65° | 1027.1 | 1123.5 | 1645.8 | 2671.2 | 4257.4 | 5112.7 | 5316.0 | 5389.6 | 4867.3 | 4543.1 | 3398.5 |
| 67.5° | 687.1 | 709.9 | 960.5 | 1374.1 | 1894.7 | 2187.4 | 2446.8 | 2453.8 | 1794.8 | 1600.2 | 1339.1 |
| 70° | 524.1 | 546.9 | 755.4 | 983.3 | 960.5 | 886.9 | 958.7 | 932.4 | 964.0 | 990.3 | 1018.3 |
| 72.5° | 390.9 | 413.6 | 585.4 | 694.1 | 576.6 | 567.9 | 643.3 | 715.1 | 781.7 | 809.8 | 853.6 |
| 75° | 259.4 | 276.9 | 394.4 | 371.6 | 319.0 | 376.8 | 469.7 | 541.6 | 580.2 | 613.5 | 646.8 |
| 77.5° | 164.8 | 177.0 | 210.3 | 170.0 | 177.0 | 220.8 | 273.4 | 338.3 | 375.1 | 408.4 | 425.9 |
| 80° | 75.4 | 73.6 | 71.9 | 80.6 | 99.9 | 129.7 | 164.8 | 203.3 | 231.4 | 245.4 | 255.9 |
| 82.5° | 29.8 | 33.3 | 36.8 | 43.8 | 54.3 | 70.1 | 92.9 | 119.2 | 142.0 | 145.5 | 154.2 |
| 85° | 12.3 | 14.0 | 15.8 | 19.3 | 24.5 | 31.5 | 38.6 | 54.3 | 68.4 | 73.6 | 78.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 3.5 | 5.3 | 8.8 | 15.8 | 17.5 | 19.3 |
| 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: P636301

CATALOG NUMBER: GWS-SA3F-740-U-T3R-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 | 5312.5 |
| 2.5° | 5347.6 | 5324.8 | 5363.3 | 5389.6 | 5414.2 | 5387.9 | 5379.1 | 5356.3 | 5352.8 | 5352.8 | 5365.1 |
| 5° | 5396.6 | 5380.9 | 5421.2 | 5437.0 | 5435.2 | 5377.4 | 5342.3 | 5296.7 | 5273.9 | 5273.9 | 5277.5 |
| 7.5° | 5484.3 | 5475.5 | 5498.3 | 5473.8 | 5417.7 | 5300.2 | 5184.6 | 5088.2 | 5023.3 | 4990.0 | 5000.5 |
| 10° | 5629.8 | 5619.2 | 5600.0 | 5508.8 | 5347.6 | 5103.9 | 4867.3 | 4692.0 | 4586.9 | 4527.3 | 4530.8 |
| 12.5° | 5771.7 | 5754.2 | 5685.8 | 5484.3 | 5153.0 | 4765.7 | 4455.4 | 4259.1 | 4143.4 | 4073.3 | 4057.6 |
| 15° | 5927.7 | 5882.1 | 5734.9 | 5358.1 | 4835.8 | 4352.0 | 4027.8 | 3815.7 | 3691.2 | 3649.2 | 3647.4 |
| 17.5° | 6076.7 | 5996.1 | 5729.7 | 5133.7 | 4455.4 | 3919.1 | 3593.1 | 3461.6 | 3440.6 | 3459.9 | 3465.1 |
| 20° | 6227.4 | 6097.7 | 5671.8 | 4823.5 | 4003.2 | 3487.9 | 3319.7 | 3374.0 | 3452.9 | 3505.5 | 3517.7 |
| 22.5° | 6383.4 | 6181.9 | 5540.4 | 4423.9 | 3526.5 | 3197.0 | 3267.1 | 3386.3 | 3484.4 | 3554.5 | 3561.5 |
| 25° | 6558.7 | 6260.7 | 5344.1 | 3934.9 | 3144.4 | 3116.3 | 3254.8 | 3381.0 | 3486.2 | 3566.8 | 3580.8 |
| 27.5° | 6658.6 | 6262.5 | 5068.9 | 3431.8 | 2969.1 | 3084.8 | 3225.0 | 3344.2 | 3449.4 | 3537.0 | 3552.8 |
| 30° | 6756.8 | 6215.2 | 4632.5 | 3023.5 | 2918.3 | 3048.0 | 3174.2 | 3284.6 | 3384.5 | 3470.4 | 3489.7 |
| 32.5° | 6895.2 | 6171.3 | 4129.4 | 2788.6 | 2888.5 | 3012.9 | 3116.3 | 3214.5 | 3291.6 | 3330.2 | 3340.7 |
| 35° | 7067.0 | 6115.3 | 3594.8 | 2686.9 | 2869.2 | 2984.9 | 3076.0 | 3128.6 | 3028.7 | 3007.7 | 3030.5 |
| 37.5° | 7307.1 | 6062.7 | 3062.0 | 2643.1 | 2856.9 | 2974.4 | 3055.0 | 2920.0 | 2797.3 | 2748.3 | 2765.8 |
| 40° | 7566.5 | 6032.9 | 2700.9 | 2608.1 | 2862.2 | 2984.9 | 2967.4 | 2767.6 | 2590.5 | 2487.1 | 2483.6 |
| 42.5° | 7787.4 | 5987.3 | 2469.6 | 2585.3 | 2876.2 | 3025.2 | 2848.2 | 2632.6 | 2369.7 | 2308.3 | 2310.1 |
| 45° | 7936.3 | 5871.6 | 2346.9 | 2560.7 | 2888.5 | 3034.0 | 2792.1 | 2446.8 | 2259.3 | 2220.7 | 2219.0 |
| 47.5° | 7997.7 | 5661.3 | 2268.0 | 2522.2 | 2886.7 | 2962.1 | 2678.2 | 2369.7 | 2182.1 | 2171.6 | 2178.6 |
| 50° | 7957.4 | 5316.0 | 2187.4 | 2446.8 | 2844.7 | 2886.7 | 2546.7 | 2301.3 | 2129.6 | 2187.4 | 2229.5 |
| 52.5° | 7808.4 | 4869.1 | 2091.0 | 2343.4 | 2769.3 | 2800.9 | 2480.1 | 2259.3 | 2091.0 | 2168.1 | 2201.4 |
| 55° | 7769.8 | 4506.3 | 1968.3 | 2208.4 | 2657.1 | 2648.4 | 2410.0 | 2238.2 | 2064.7 | 2034.9 | 2040.2 |
| 57.5° | 7719.0 | 4152.2 | 1765.0 | 1966.6 | 2373.2 | 2387.2 | 2343.4 | 2213.7 | 1996.4 | 1987.6 | 1996.4 |
| 60° | 6705.9 | 3182.9 | 1573.9 | 1696.6 | 1949.0 | 2024.4 | 2268.0 | 2168.1 | 1885.9 | 1849.1 | 1847.4 |
| 62.5° | 4380.1 | 1928.0 | 1400.4 | 1479.3 | 1588.0 | 1675.6 | 2068.2 | 2036.7 | 1765.0 | 1742.2 | 1758.0 |
| 65° | 2355.7 | 1374.1 | 1274.2 | 1321.6 | 1381.1 | 1447.8 | 1714.2 | 1814.1 | 1595.0 | 1514.4 | 1516.1 |
| 67.5° | 1204.1 | 1169.1 | 1179.6 | 1212.9 | 1258.5 | 1291.8 | 1382.9 | 1470.5 | 1360.1 | 1291.8 | 1290.0 |
| 70° | 1030.6 | 1058.6 | 1074.4 | 1093.7 | 1123.5 | 1118.2 | 1127.0 | 1142.8 | 1134.0 | 1100.7 | 1099.0 |
| 72.5° | 878.1 | 921.9 | 925.4 | 928.9 | 939.5 | 914.9 | 899.1 | 872.9 | 874.6 | 879.9 | 881.6 |
| 75° | 667.8 | 709.9 | 720.4 | 715.1 | 725.6 | 694.1 | 673.0 | 646.8 | 615.2 | 609.9 | 613.5 |
| 77.5° | 434.7 | 468.0 | 483.8 | 480.2 | 485.5 | 461.0 | 450.5 | 422.4 | 385.6 | 371.6 | 371.6 |
| 80° | 262.9 | 282.2 | 294.5 | 298.0 | 303.2 | 285.7 | 268.2 | 243.6 | 227.9 | 212.1 | 212.1 |
| 82.5° | 159.5 | 171.8 | 180.5 | 180.5 | 185.8 | 166.5 | 152.5 | 135.0 | 127.9 | 113.9 | 113.9 |
| 85° | 80.6 | 89.4 | 92.9 | 91.1 | 87.6 | 71.9 | 66.6 | 57.8 | 54.3 | 47.3 | 47.3 |
| 87.5° | 19.3 | 24.5 | 24.5 | 17.5 | 17.5 | 8.8 | 5.3 | 1.8 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

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

Test Date: 03/05/2021

Test Information

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

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

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



Test Conditions

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

REPORT NUMBER: SP1-2101-121-2

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

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 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 | 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 $R_a = 71.2$
 $R_9 = -29.7$



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)