

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: P640674

Luminaire Tested: GWS-SA5E-735-U-SL3-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640674
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-SA5E-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: 31007.5 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B4 - U0 - G3

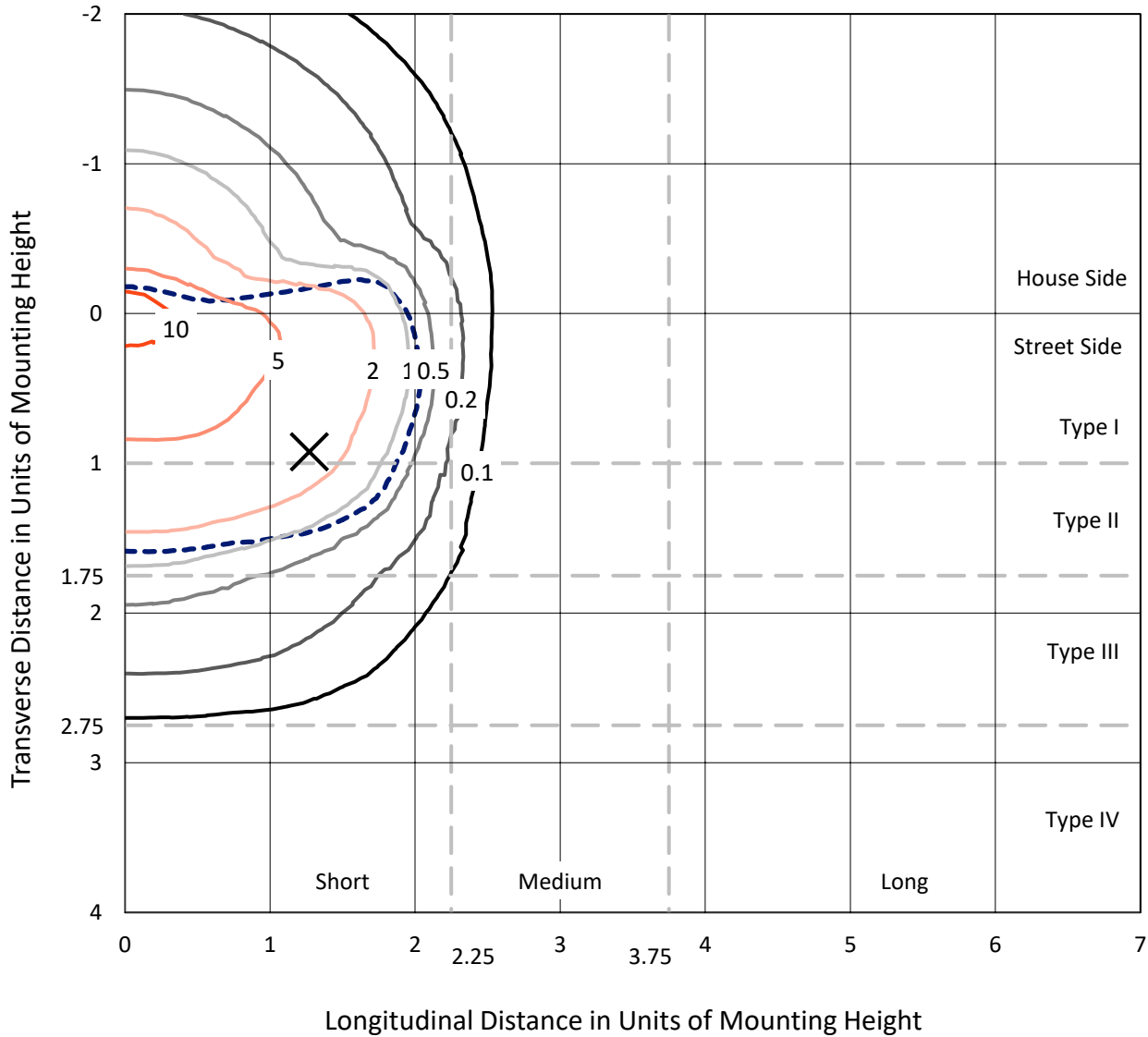
Input Watts (W): 269.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P640674
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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd
 - - - 1/2 Max cd

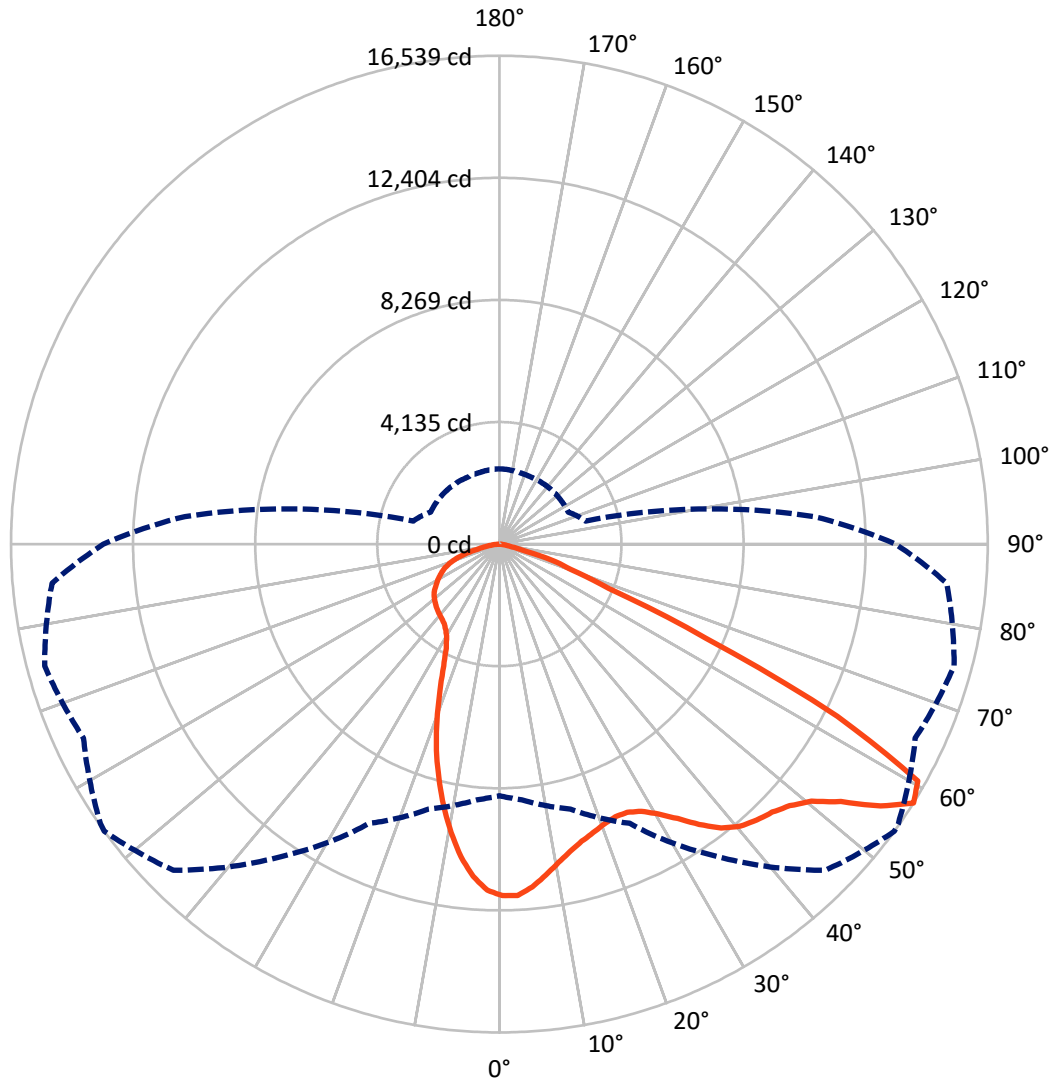


Based on 30 foot mounting height. Maximum calculated value = 13.2 fc
 Type II - Short - N/A

REPORT NUMBER: P640674

CATALOG NUMBER: GWS-SA5E-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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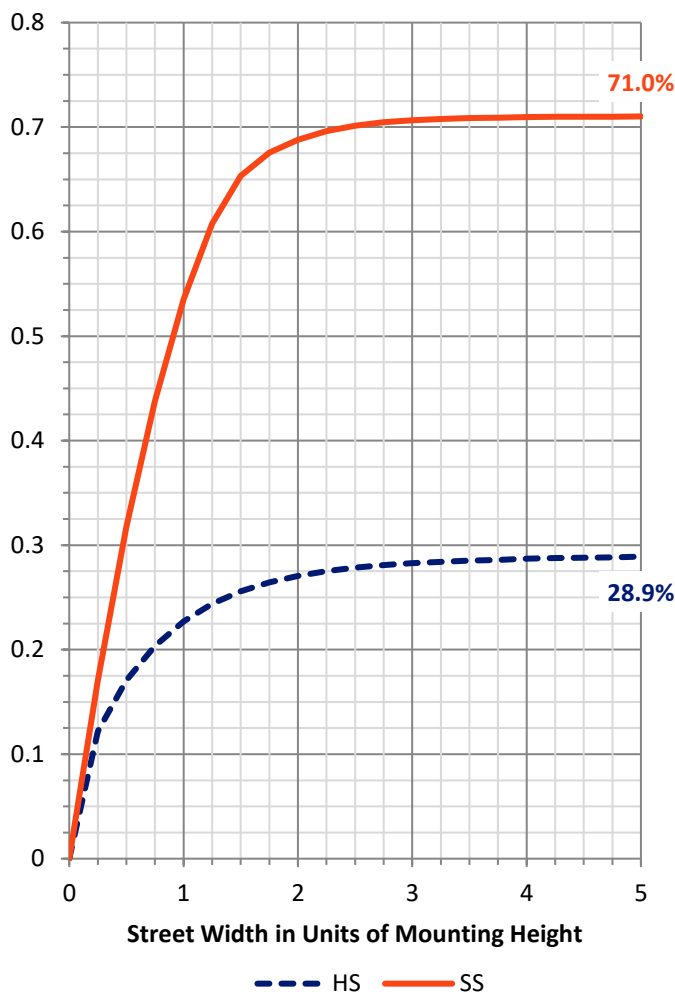
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9014.2 | 0.0 | 9014.2 |
| | % Fixture | 29.1 | 0.0 | 29.1 |
| Street Side | Lumens | 21993.3 | 0.0 | 21993.3 |
| | % Fixture | 70.9 | 0.0 | 70.9 |
| Total | Lumens | 31007.5 | 0.0 | 31007.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1046.4 | 3.4 |
| 10°-20° | 2496.8 | 8.1 |
| 20°-30° | 3455.2 | 11.1 |
| 30°-40° | 4801.0 | 15.5 |
| 40°-50° | 6340.7 | 20.4 |
| 50°-60° | 7535.0 | 24.3 |
| 60°-70° | 4174.5 | 13.5 |
| 70°-80° | 1039.5 | 3.4 |
| 80°-90° | 118.2 | 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° | 31007.5 | 100.0 |
| 0°-180° | 31007.5 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P640674

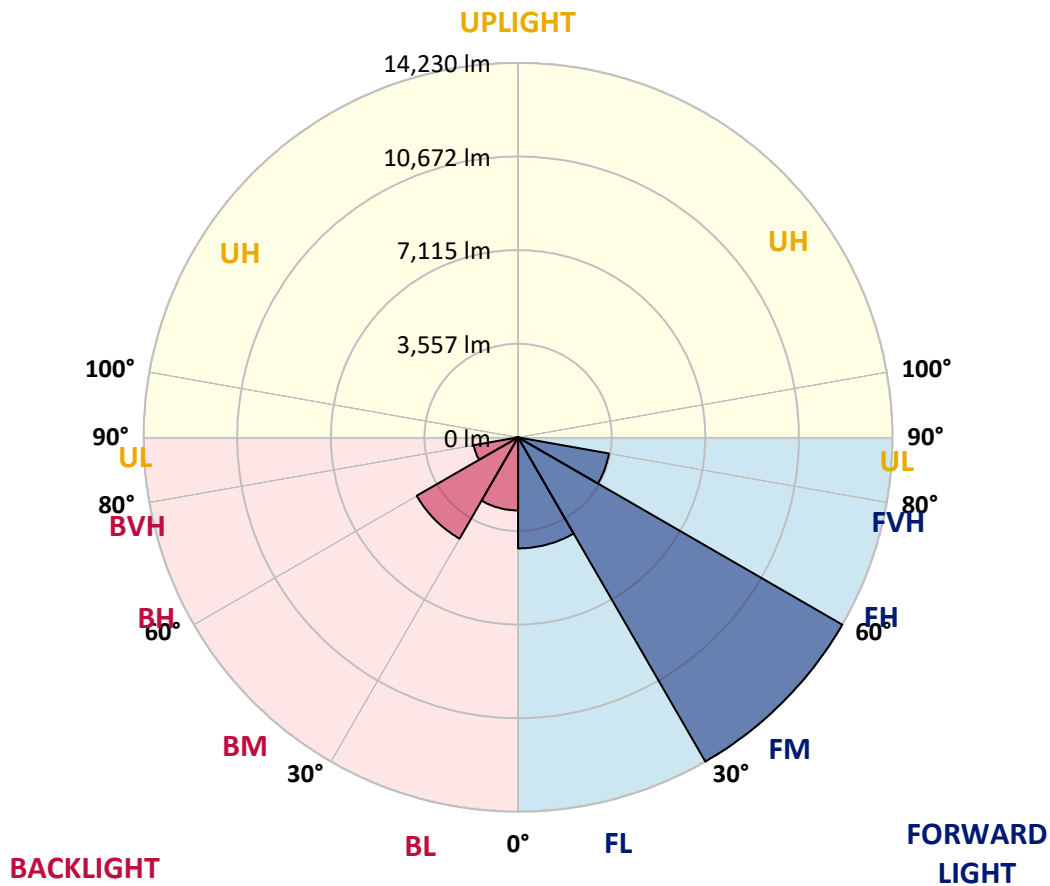
CATALOG NUMBER: GWS-SA5E-735-U-SL3-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 4220.6 | 13.6 | | | |
| FM (30°-60°) | 14229.8 | 45.9 | | | |
| FH (60°-80°) | 3505.8 | 11.3 | | | G2/5000 |
| FVH (80°-90°) | 37.0 | 0.1 | | | G1/100 |
| BL (0°-30°) | 2777.8 | 9.0 | B4/5000 | | |
| BM (30°-60°) | 4446.9 | 14.3 | B3/5000 | | |
| BH (60°-80°) | 1708.2 | 5.5 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 81.2 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G3

Type II Short





REPORT NUMBER: P640674

CATALOG NUMBER: GWS-SA5E-735-U-SL3-W-GRSWH

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 54° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 |
| 2.5° | 11681.5 | 11705.4 | 11721.3 | 11777.1 | 11824.9 | 11867.3 | 11912.4 | 11912.4 | 11909.8 | 11901.8 | 11885.9 |
| 5° | 11219.7 | 11246.2 | 11283.4 | 11360.4 | 11463.9 | 11538.2 | 11660.3 | 11670.9 | 11724.0 | 11745.2 | 11734.6 |
| 7.5° | 10683.5 | 10691.5 | 10739.3 | 10840.1 | 11004.7 | 11137.4 | 11312.6 | 11333.8 | 11461.2 | 11535.5 | 11522.3 |
| 10° | 10096.9 | 10070.4 | 10155.3 | 10303.9 | 10518.9 | 10741.9 | 10967.5 | 10986.1 | 11190.5 | 11331.2 | 11320.5 |
| 12.5° | 9560.7 | 9563.4 | 9648.3 | 9828.8 | 10096.9 | 10373.0 | 10675.5 | 10718.0 | 10970.2 | 11150.7 | 11132.1 |
| 15° | 9112.2 | 9122.8 | 9226.3 | 9430.7 | 9735.9 | 10065.1 | 10442.0 | 10481.8 | 10800.3 | 11039.2 | 10986.1 |
| 17.5° | 8753.8 | 8764.5 | 8854.7 | 9088.3 | 9414.8 | 9812.9 | 10272.1 | 10311.9 | 10707.4 | 10991.4 | 10882.6 |
| 20° | 8507.0 | 8501.7 | 8589.3 | 8812.2 | 9149.3 | 9582.0 | 10123.5 | 10181.9 | 10678.2 | 11010.0 | 10813.6 |
| 22.5° | 8406.1 | 8403.5 | 8467.2 | 8650.3 | 8966.2 | 9404.1 | 10033.2 | 10112.8 | 10710.1 | 11092.3 | 10771.1 |
| 25° | 8456.6 | 8445.9 | 8501.7 | 8637.1 | 8889.2 | 9335.1 | 10059.8 | 10144.7 | 10845.4 | 11262.1 | 10779.1 |
| 27.5° | 8613.2 | 8599.9 | 8647.7 | 8769.8 | 8960.9 | 9406.8 | 10245.6 | 10343.8 | 11132.1 | 11572.7 | 10885.2 |
| 30° | 8852.1 | 8844.1 | 8891.9 | 9008.7 | 9175.9 | 9645.7 | 10601.2 | 10712.7 | 11575.4 | 12055.8 | 11116.2 |
| 32.5° | 9130.8 | 9117.5 | 9202.4 | 9337.8 | 9531.5 | 10081.0 | 11079.0 | 11225.0 | 12100.9 | 12676.9 | 11503.7 |
| 35° | 9444.0 | 9433.3 | 9550.1 | 9746.5 | 10025.2 | 10686.2 | 11657.6 | 11816.9 | 12637.1 | 13380.3 | 12018.6 |
| 37.5° | 9749.2 | 9749.2 | 9974.8 | 10266.8 | 10617.2 | 11344.4 | 12201.8 | 12302.6 | 13008.7 | 14004.0 | 12570.7 |
| 40° | 10019.9 | 10035.9 | 10375.6 | 10813.6 | 11259.5 | 11939.0 | 12560.1 | 12645.0 | 13173.2 | 14434.0 | 13051.1 |
| 42.5° | 10319.9 | 10333.1 | 10728.6 | 11302.0 | 11832.8 | 12419.4 | 12777.7 | 12820.2 | 13205.1 | 14649.0 | 13390.9 |
| 45° | 10558.8 | 10577.3 | 11068.4 | 11681.5 | 12331.8 | 12780.4 | 12950.3 | 12987.4 | 13250.2 | 14765.8 | 13637.7 |
| 47.5° | 10683.5 | 10710.1 | 11272.8 | 11986.8 | 12668.9 | 13104.2 | 13234.3 | 13250.2 | 13436.0 | 14970.2 | 13935.0 |
| 50° | 10662.3 | 10715.4 | 11349.7 | 12138.1 | 12918.4 | 13430.7 | 13690.8 | 13717.4 | 13815.6 | 15270.1 | 14282.7 |
| 52.5° | 10850.7 | 10874.6 | 11514.3 | 12318.6 | 13274.1 | 14033.2 | 14484.5 | 14521.6 | 14476.5 | 15495.7 | 14489.8 |
| 55° | 10537.5 | 10651.7 | 11309.9 | 12292.0 | 13815.6 | 14964.9 | 15660.3 | 15641.7 | 15076.4 | 15747.9 | 14834.8 |
| 57.5° | 8522.9 | 8690.1 | 9292.7 | 10434.0 | 12923.7 | 15617.8 | 16538.9 | 16493.7 | 15540.9 | 15941.7 | 15209.1 |
| 60° | 5900.5 | 5927.0 | 6471.2 | 7280.7 | 9974.8 | 13797.0 | 16281.4 | 16379.6 | 15625.8 | 15697.5 | 14516.3 |
| 62.5° | 4719.3 | 4711.4 | 4761.8 | 4783.0 | 6343.7 | 9698.8 | 12852.1 | 13210.4 | 12982.1 | 12231.0 | 10288.0 |
| 65° | 4029.2 | 4058.4 | 4207.0 | 4130.1 | 4140.7 | 5462.5 | 7678.9 | 7729.3 | 7570.0 | 7299.3 | 5441.3 |
| 67.5° | 3153.3 | 3203.7 | 3466.5 | 3766.4 | 3670.9 | 3516.9 | 3984.1 | 3960.2 | 3121.4 | 2415.4 | 1996.0 |
| 70° | 1974.8 | 2006.6 | 2288.0 | 2956.9 | 3195.8 | 2887.9 | 2561.4 | 2550.8 | 1672.2 | 1374.9 | 1507.6 |
| 72.5° | 1152.0 | 1157.3 | 1236.9 | 1648.3 | 2120.8 | 1974.8 | 1884.5 | 1815.5 | 1075.0 | 1096.2 | 1202.4 |
| 75° | 634.4 | 634.4 | 631.7 | 711.3 | 836.1 | 740.5 | 716.7 | 698.1 | 719.3 | 814.9 | 894.5 |
| 77.5° | 132.7 | 135.4 | 143.3 | 188.5 | 244.2 | 297.3 | 374.3 | 376.9 | 469.8 | 544.1 | 607.8 |
| 80° | 61.0 | 63.7 | 79.6 | 100.9 | 130.1 | 172.5 | 228.3 | 230.9 | 284.0 | 342.4 | 384.9 |
| 82.5° | 31.9 | 34.5 | 42.5 | 53.1 | 69.0 | 90.2 | 127.4 | 127.4 | 169.9 | 201.7 | 228.3 |
| 85° | 10.6 | 10.6 | 15.9 | 21.2 | 29.2 | 37.2 | 50.4 | 50.4 | 74.3 | 98.2 | 114.1 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 5.3 | 10.6 | 10.6 | 13.3 | 15.9 | 26.5 |
| 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: P640674

CATALOG NUMBER: GWS-SA5E-735-U-SL3-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 | 11904.5 |
| 2.5° | 11851.4 | 11769.1 | 11771.8 | 11787.7 | 11737.3 | 11660.3 | 11609.9 | 11546.2 | 11506.3 | 11498.4 | 11527.6 |
| 5° | 11681.5 | 11586.0 | 11519.6 | 11450.6 | 11307.3 | 11137.4 | 11004.7 | 10895.9 | 10824.2 | 10797.6 | 10765.8 |
| 7.5° | 11447.9 | 11323.2 | 11156.0 | 10962.2 | 10702.1 | 10399.5 | 10187.2 | 9988.1 | 9850.1 | 9810.2 | 9791.7 |
| 10° | 11214.4 | 11033.9 | 10736.6 | 10375.6 | 9943.0 | 9534.2 | 9149.3 | 8854.7 | 8621.1 | 8488.4 | 8530.9 |
| 12.5° | 10972.8 | 10749.9 | 10285.4 | 9730.6 | 9128.1 | 8512.3 | 8008.0 | 7519.6 | 7142.7 | 6954.2 | 6898.5 |
| 15° | 10760.5 | 10457.9 | 9810.2 | 9059.1 | 8257.5 | 7482.4 | 6752.5 | 6019.9 | 5542.2 | 5282.0 | 5210.4 |
| 17.5° | 10580.0 | 10187.2 | 9308.6 | 8374.3 | 7416.1 | 6311.9 | 5414.7 | 4735.3 | 4408.8 | 4265.4 | 4254.8 |
| 20° | 10402.2 | 9921.7 | 8812.2 | 7636.4 | 6444.6 | 5207.7 | 4406.1 | 4087.6 | 3970.8 | 3920.4 | 3917.7 |
| 22.5° | 10242.9 | 9643.0 | 8289.3 | 6898.5 | 5478.5 | 4376.9 | 3936.3 | 3798.3 | 3766.4 | 3766.4 | 3761.1 |
| 25° | 10107.5 | 9364.3 | 7753.2 | 6115.5 | 4605.2 | 3896.5 | 3692.1 | 3633.7 | 3647.0 | 3670.9 | 3673.5 |
| 27.5° | 10051.8 | 9146.7 | 7235.6 | 5311.2 | 4002.7 | 3617.8 | 3524.9 | 3516.9 | 3554.1 | 3591.3 | 3596.6 |
| 30° | 10110.2 | 8998.0 | 6704.7 | 4541.5 | 3641.7 | 3447.9 | 3405.5 | 3421.4 | 3466.5 | 3503.7 | 3503.7 |
| 32.5° | 10290.7 | 8923.7 | 6163.3 | 3978.8 | 3432.0 | 3328.5 | 3315.2 | 3331.1 | 3365.6 | 3386.9 | 3389.5 |
| 35° | 10595.9 | 8952.9 | 5603.2 | 3599.2 | 3296.6 | 3240.9 | 3238.2 | 3248.8 | 3262.1 | 3275.4 | 3278.0 |
| 37.5° | 10980.8 | 9083.0 | 5003.3 | 3378.9 | 3209.0 | 3177.2 | 3171.9 | 3169.2 | 3171.9 | 3171.9 | 3174.5 |
| 40° | 11357.7 | 9279.4 | 4467.2 | 3248.8 | 3148.0 | 3121.4 | 3108.2 | 3089.6 | 3086.9 | 3081.6 | 3079.0 |
| 42.5° | 11636.4 | 9430.7 | 4039.8 | 3155.9 | 3092.2 | 3060.4 | 3044.5 | 3015.3 | 3012.6 | 3010.0 | 3007.3 |
| 45° | 11846.1 | 9558.1 | 3684.2 | 3065.7 | 3033.9 | 3004.7 | 2970.1 | 2943.6 | 2948.9 | 2954.2 | 2954.2 |
| 47.5° | 12082.3 | 9669.6 | 3424.0 | 2980.8 | 2962.2 | 2933.0 | 2890.5 | 2871.9 | 2890.5 | 2909.1 | 2909.1 |
| 50° | 12369.0 | 9826.2 | 3211.7 | 2895.8 | 2887.9 | 2853.4 | 2816.2 | 2808.2 | 2829.5 | 2856.0 | 2856.0 |
| 52.5° | 12578.7 | 9961.5 | 3060.4 | 2810.9 | 2810.9 | 2765.8 | 2733.9 | 2731.3 | 2755.2 | 2781.7 | 2784.3 |
| 55° | 12971.5 | 10277.4 | 3007.3 | 2712.7 | 2702.1 | 2667.6 | 2643.7 | 2625.1 | 2654.3 | 2678.2 | 2678.2 |
| 57.5° | 13414.8 | 10696.8 | 3020.6 | 2572.0 | 2558.7 | 2548.1 | 2529.5 | 2508.3 | 2516.3 | 2542.8 | 2545.5 |
| 60° | 12475.2 | 9884.6 | 2874.6 | 2431.3 | 2423.4 | 2418.1 | 2394.2 | 2357.0 | 2367.6 | 2388.9 | 2391.5 |
| 62.5° | 8714.0 | 6569.4 | 2325.2 | 2256.1 | 2282.7 | 2280.0 | 2248.2 | 2205.7 | 2208.4 | 2237.6 | 2237.6 |
| 65° | 4522.9 | 3554.1 | 2041.1 | 2096.9 | 2136.7 | 2120.8 | 2067.7 | 2030.5 | 2025.2 | 2062.4 | 2054.4 |
| 67.5° | 1950.9 | 1940.3 | 1858.0 | 1929.7 | 1972.1 | 1937.6 | 1881.9 | 1820.8 | 1826.2 | 1839.4 | 1828.8 |
| 70° | 1571.3 | 1619.1 | 1653.6 | 1730.6 | 1765.1 | 1701.4 | 1640.4 | 1605.8 | 1576.6 | 1574.0 | 1555.4 |
| 72.5° | 1255.5 | 1321.8 | 1398.8 | 1478.4 | 1489.1 | 1425.4 | 1348.4 | 1316.5 | 1271.4 | 1268.7 | 1250.2 |
| 75° | 944.9 | 1000.7 | 1061.7 | 1125.4 | 1125.4 | 1064.4 | 1013.9 | 998.0 | 944.9 | 929.0 | 913.1 |
| 77.5° | 645.0 | 679.5 | 727.3 | 743.2 | 759.1 | 735.2 | 684.8 | 658.3 | 597.2 | 581.3 | 560.1 |
| 80° | 406.1 | 430.0 | 459.2 | 469.8 | 485.7 | 456.5 | 416.7 | 387.5 | 345.1 | 331.8 | 321.2 |
| 82.5° | 244.2 | 260.1 | 278.7 | 284.0 | 297.3 | 276.0 | 238.9 | 217.7 | 193.8 | 183.1 | 175.2 |
| 85° | 124.8 | 132.7 | 143.3 | 146.0 | 143.3 | 122.1 | 108.8 | 98.2 | 82.3 | 79.6 | 74.3 |
| 87.5° | 31.9 | 37.2 | 39.8 | 37.2 | 34.5 | 26.5 | 18.6 | 13.3 | 5.3 | 5.3 | 2.7 |
| 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
 CIE u': 0.2371
 CIE v': 0.5177
 Duv: 0.0032
 CIE x: 0.4153
 CIE y: 0.4030
 CIE z: 0.1817
 Peak Wavelength (nm): 590
 Dominant Wavelength (nm): 580
 Purity: 45.7

 Rf: 76.9
 Rg: 94.4

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 | | |
| R1: | 68.9 | R9: | -34.6 |
| R2: | 81.1 | R10: | 57.8 |
| R3: | 93.1 | R11: | 68.6 |
| R4: | 71.6 | R12: | 53.9 |
| R5: | 69.4 | R13: | 70.9 |
| R6: | 75.0 | R14: | 96.2 |
| R7: | 79.5 | | |
| R8: | 46.4 | | |

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)