

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P382913

Luminaire Tested: **GLEON-SA2D-735-U-SL2**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P382913
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA2D-735-U-SL2
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(2) 70 CRI, 3500K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14487.4 lumens
Efficiency: N/A
Efficacy: 112.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G3

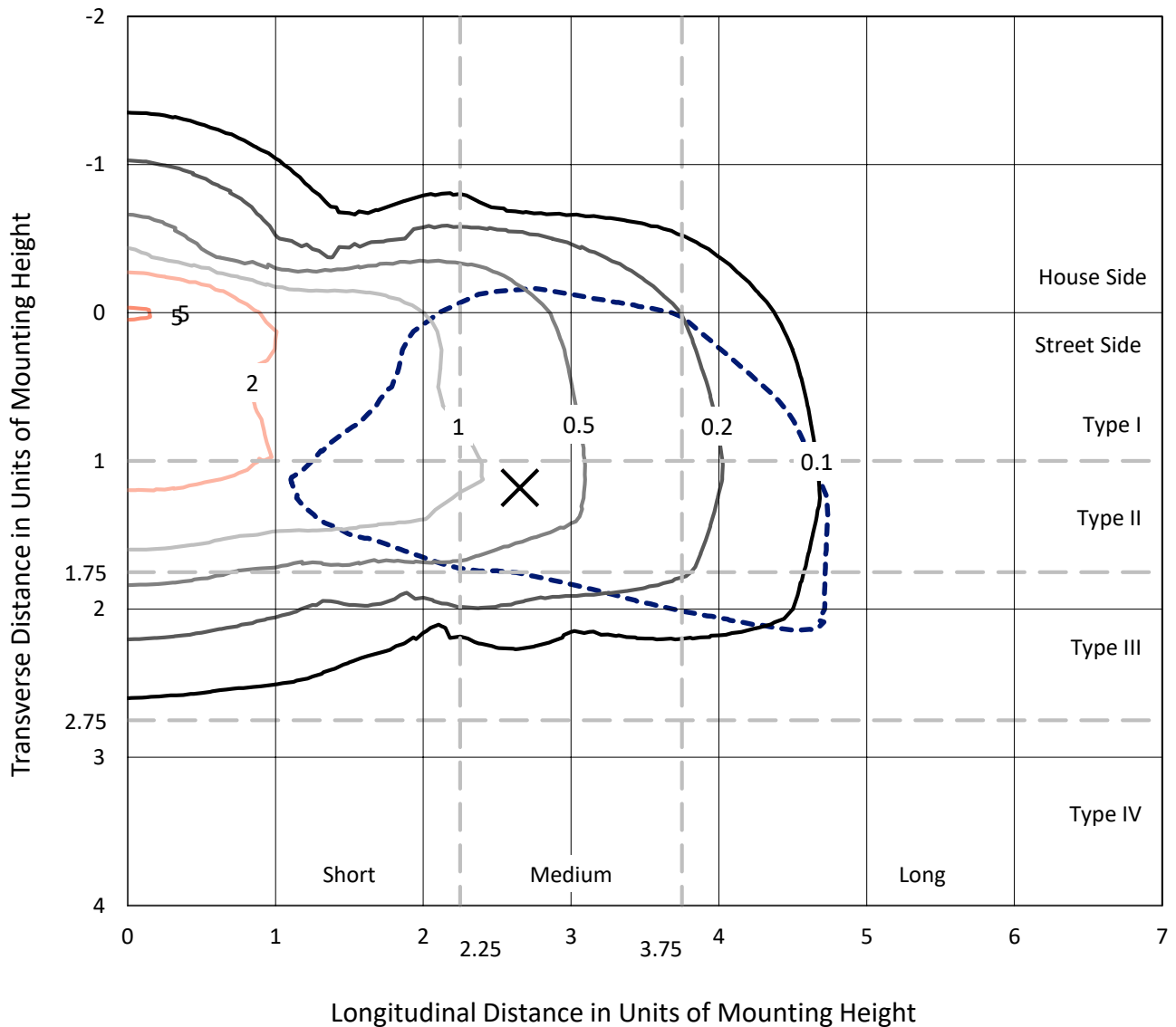
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P382913
 CATALOG NUMBER: GLEON-SA2D-735-U-SL2

Iso-Footcandle Lines of Horizontal Illumination

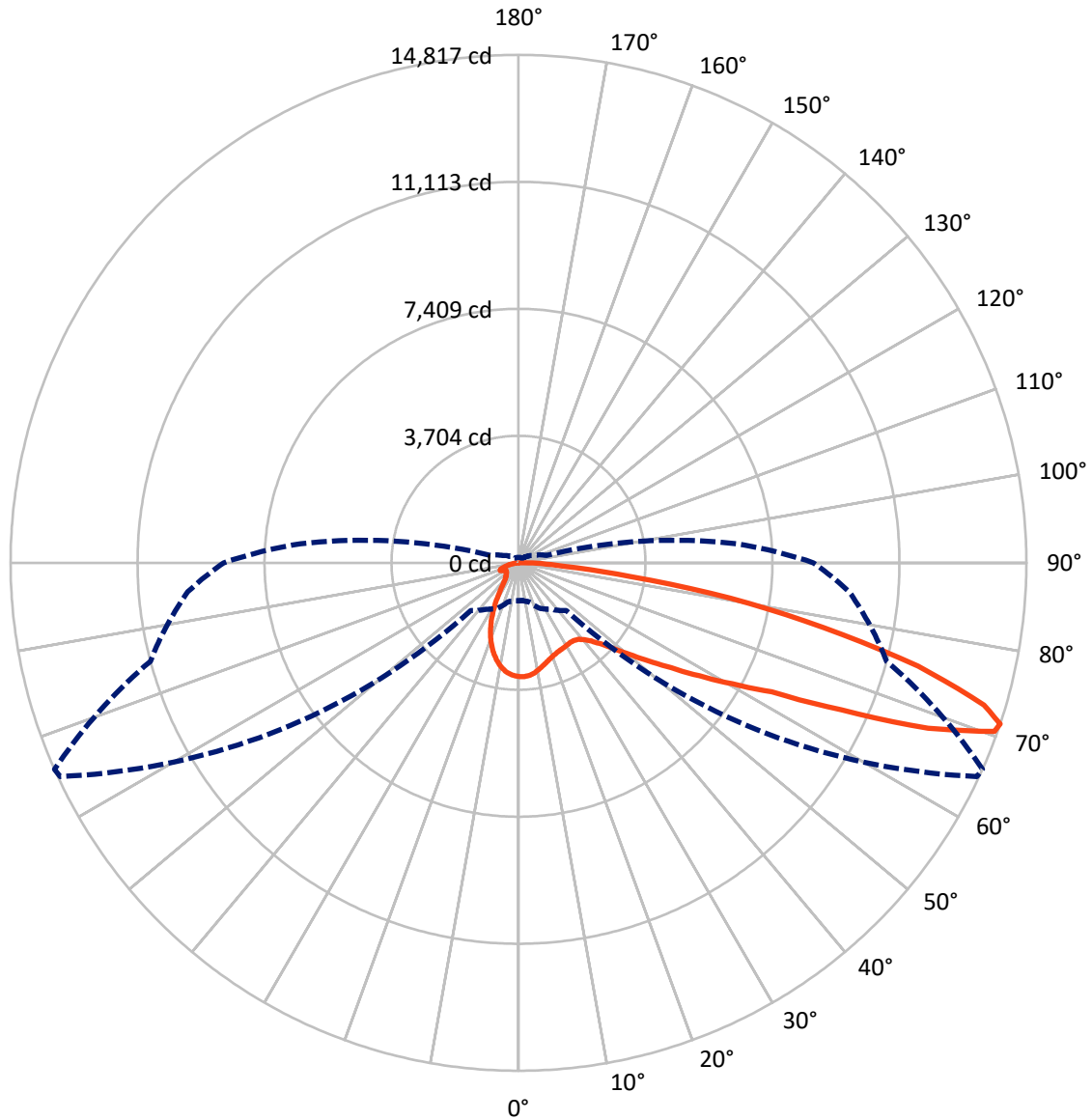
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.3 fc
 Type III - Medium - N/A

REPORT NUMBER: P382913
CATALOG NUMBER: GLEON-SA2D-735-U-SL2

Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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 CATALOG NUMBER: GLEON-SA2D-735-U-SL2

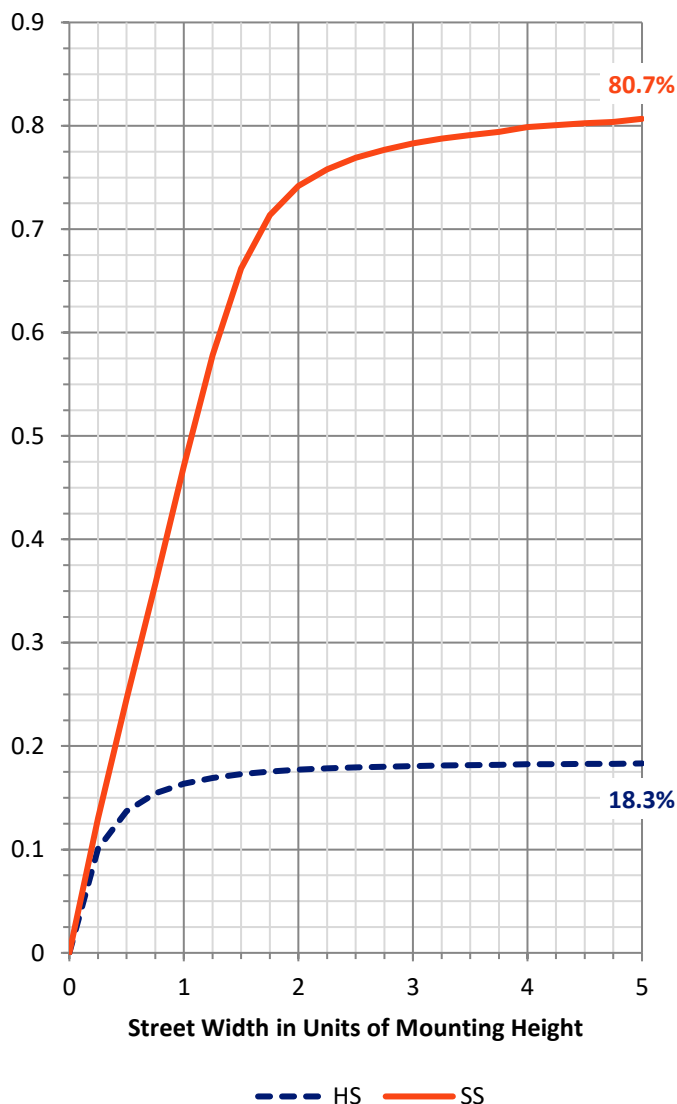
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2684.9 | 0.0 | 2684.9 |
| | % Fixture | 18.5 | 0.0 | 18.5 |
| Street Side | Lumens | 11802.5 | 0.0 | 11802.5 |
| | % Fixture | 81.5 | 0.0 | 81.5 |
| Total | Lumens | 14487.4 | 0.0 | 14487.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 292.1 | 2.0 |
| 10°-20° | 700.7 | 4.8 |
| 20°-30° | 941.2 | 6.5 |
| 30°-40° | 1238.1 | 8.5 |
| 40°-50° | 1801.1 | 12.4 |
| 50°-60° | 2813.5 | 19.4 |
| 60°-70° | 3524.4 | 24.3 |
| 70°-80° | 2688.3 | 18.6 |
| 80°-90° | 488.2 | 3.4 |
| 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° | 14487.4 | 100.0 |
| 0°-180° | 14487.4 | 100.0 |

Coefficient of Utilization

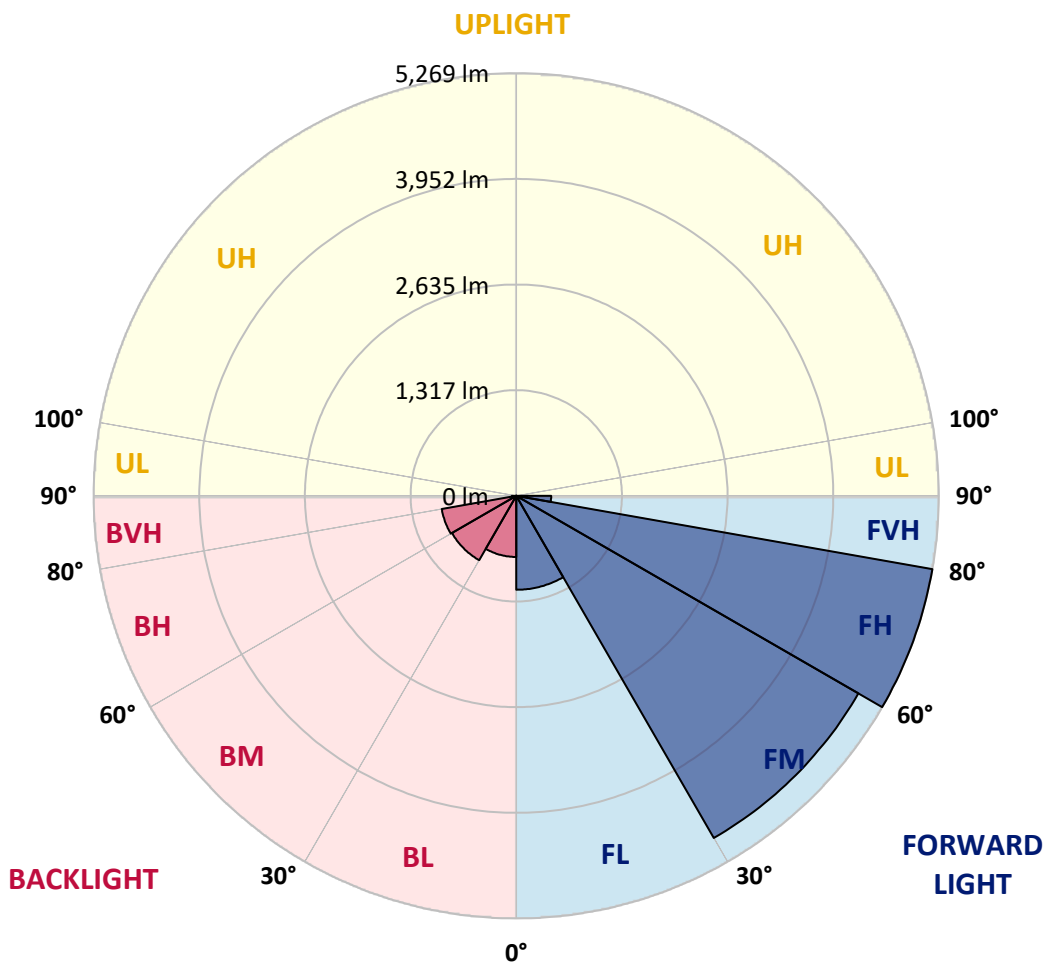


REPORT NUMBER: P382913
 CATALOG NUMBER: GLEON-SA2D-735-U-SL2

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1171.5 | 8.1 | | | |
| FM (30°-60°) | 4926.4 | 34.0 | | | |
| FH (60°-80°) | 5269.2 | 36.4 | | | G3/7500 |
| FVH (80°-90°) | 435.3 | 3.0 | | | G3/500 |
| BL (0°-30°) | 762.4 | 5.3 | B2/1000 | | |
| BM (30°-60°) | 926.2 | 6.4 | B1/1000 | | |
| BH (60°-80°) | 943.4 | 6.5 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 52.8 | 0.4 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|--------|
| 0° | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 |
| 2.5° | 3257.2 | 3252.2 | 3267.3 | 3282.8 | 3288.7 | 3298.8 | 3313.8 | 3322.3 | 3321.8 | 3323.3 | 3318.3 |
| 5° | 3041.2 | 3034.7 | 3064.7 | 3089.2 | 3136.2 | 3189.2 | 3253.8 | 3299.8 | 3300.8 | 3326.8 | 3333.8 |
| 7.5° | 2836.6 | 2832.1 | 2866.7 | 2906.1 | 2960.6 | 3041.7 | 3146.2 | 3245.2 | 3251.3 | 3321.8 | 3346.3 |
| 10° | 2672.5 | 2671.5 | 2705.0 | 2748.1 | 2811.6 | 2902.1 | 3022.2 | 3167.3 | 3176.2 | 3297.8 | 3348.3 |
| 12.5° | 2544.5 | 2546.5 | 2575.5 | 2624.5 | 2691.5 | 2786.1 | 2916.1 | 3079.7 | 3094.2 | 3259.8 | 3336.8 |
| 15° | 2450.0 | 2458.0 | 2481.5 | 2531.0 | 2597.0 | 2693.0 | 2826.6 | 2998.7 | 3020.6 | 3217.3 | 3330.3 |
| 17.5° | 2395.9 | 2405.0 | 2421.5 | 2462.5 | 2524.5 | 2617.0 | 2743.6 | 2932.1 | 2952.2 | 3184.8 | 3330.7 |
| 20° | 2379.9 | 2387.5 | 2397.0 | 2421.9 | 2474.5 | 2558.5 | 2678.0 | 2872.1 | 2893.7 | 3158.7 | 3335.8 |
| 22.5° | 2411.4 | 2416.9 | 2417.9 | 2416.0 | 2447.9 | 2516.5 | 2630.5 | 2828.1 | 2851.1 | 3141.7 | 3339.3 |
| 25° | 2478.9 | 2486.5 | 2481.0 | 2462.5 | 2451.9 | 2493.9 | 2606.0 | 2799.1 | 2822.1 | 3129.3 | 3332.3 |
| 27.5° | 2580.5 | 2581.5 | 2577.0 | 2553.0 | 2503.4 | 2496.5 | 2598.6 | 2782.1 | 2804.1 | 3114.7 | 3317.8 |
| 30° | 2718.5 | 2725.1 | 2717.0 | 2684.5 | 2603.5 | 2536.5 | 2607.5 | 2765.6 | 2785.6 | 3096.2 | 3294.3 |
| 32.5° | 2880.2 | 2896.1 | 2895.6 | 2861.6 | 2745.6 | 2626.0 | 2644.6 | 2755.6 | 2771.1 | 3076.7 | 3265.7 |
| 35° | 3047.7 | 3069.7 | 3110.7 | 3096.2 | 2952.6 | 2767.5 | 2715.6 | 2771.5 | 2782.1 | 3074.2 | 3245.8 |
| 37.5° | 3221.8 | 3243.7 | 3328.3 | 3367.3 | 3199.2 | 2970.1 | 2827.6 | 2828.1 | 2833.1 | 3104.7 | 3244.3 |
| 40° | 3403.8 | 3427.3 | 3554.4 | 3656.0 | 3518.8 | 3226.8 | 3008.2 | 2946.1 | 2940.6 | 3179.7 | 3273.7 |
| 42.5° | 3658.9 | 3679.9 | 3832.5 | 3962.1 | 3873.5 | 3555.3 | 3257.8 | 3128.2 | 3116.7 | 3326.8 | 3368.3 |
| 45° | 3981.5 | 3999.6 | 4161.6 | 4300.2 | 4254.7 | 3930.6 | 3571.4 | 3378.8 | 3376.8 | 3571.9 | 3559.9 |
| 47.5° | 4365.2 | 4379.2 | 4524.7 | 4658.9 | 4675.3 | 4362.2 | 3965.5 | 3765.5 | 3733.0 | 3908.0 | 3856.5 |
| 50° | 4764.9 | 4780.3 | 4879.4 | 5023.5 | 5146.0 | 4939.9 | 4472.7 | 4239.1 | 4195.6 | 4351.7 | 4276.6 |
| 52.5° | 5029.4 | 5049.9 | 5136.0 | 5318.6 | 5675.2 | 5573.2 | 5072.5 | 4813.4 | 4747.4 | 4889.4 | 4831.8 |
| 55° | 4911.4 | 4957.4 | 5089.0 | 5381.6 | 6098.4 | 6540.6 | 5812.3 | 5483.1 | 5408.6 | 5526.7 | 5492.6 |
| 57.5° | 4374.7 | 4437.7 | 4617.3 | 5068.9 | 6157.9 | 7392.9 | 6930.7 | 6271.9 | 6219.4 | 6185.4 | 6200.9 |
| 60° | 3393.8 | 3454.4 | 3676.9 | 4265.6 | 5743.3 | 8015.1 | 8613.8 | 7244.3 | 7168.3 | 6846.7 | 6860.7 |
| 62.5° | 2401.9 | 2371.4 | 2523.9 | 2954.7 | 4666.8 | 8088.2 | 10529.1 | 8544.8 | 8294.7 | 7545.0 | 7483.4 |
| 65° | 1831.7 | 1824.7 | 1893.3 | 2030.3 | 2826.6 | 7214.3 | 11670.1 | 10730.7 | 10340.0 | 8366.2 | 8221.2 |
| 67.5° | 1505.1 | 1492.6 | 1560.1 | 1759.7 | 1820.2 | 4654.3 | 11695.0 | 13266.6 | 12883.0 | 9388.6 | 9074.5 |
| 70° | 1237.5 | 1223.5 | 1286.5 | 1544.1 | 1682.2 | 2360.4 | 9842.8 | 14751.7 | 14731.2 | 10683.2 | 9718.7 |
| 71° | 1109.5 | 1099.4 | 1175.0 | 1461.0 | 1652.7 | 1967.2 | 8498.3 | 14755.7 | 14817.3 | 11121.3 | 9680.7 |
| 72.5° | 903.3 | 906.9 | 986.9 | 1300.5 | 1630.7 | 1737.1 | 6245.9 | 14068.0 | 14198.0 | 11539.0 | 9335.1 |
| 75° | 600.2 | 603.3 | 708.3 | 1000.4 | 1581.1 | 1699.7 | 3432.8 | 11804.6 | 12043.7 | 11288.9 | 8518.4 |
| 77.5° | 403.2 | 402.1 | 473.7 | 686.3 | 1377.6 | 1699.7 | 2012.8 | 8828.9 | 9091.5 | 8982.4 | 6567.0 |
| 80° | 277.6 | 275.6 | 326.1 | 473.7 | 1042.9 | 1720.2 | 1556.2 | 6187.4 | 6266.9 | 4850.8 | 2669.1 |
| 82.5° | 170.1 | 171.6 | 213.0 | 334.6 | 709.7 | 1548.1 | 1469.1 | 3373.8 | 3287.2 | 1360.5 | 666.8 |
| 85° | 97.5 | 97.1 | 136.1 | 226.6 | 455.7 | 1306.5 | 1432.5 | 1452.1 | 1332.0 | 409.7 | 241.1 |
| 87.5° | 35.0 | 37.5 | 73.0 | 125.6 | 261.1 | 909.8 | 1215.5 | 755.3 | 680.8 | 185.1 | 109.1 |
| 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: P382913
 CATALOG NUMBER: GLEON-SA2D-735-U-SL2

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 | 3318.8 |
| 2.5° | 3314.8 | 3317.8 | 3314.3 | 3294.3 | 3277.3 | 3249.8 | 3234.2 | 3212.7 | 3206.2 | 3203.2 | 3211.2 |
| 5° | 3327.3 | 3328.3 | 3298.8 | 3246.3 | 3187.2 | 3117.7 | 3067.7 | 3006.2 | 2977.1 | 2964.7 | 2972.7 |
| 7.5° | 3338.8 | 3334.3 | 3269.7 | 3169.2 | 3060.2 | 2939.1 | 2831.6 | 2733.1 | 2675.5 | 2652.0 | 2654.1 |
| 10° | 3340.3 | 3321.2 | 3217.8 | 3062.2 | 2893.1 | 2715.6 | 2550.5 | 2398.5 | 2302.4 | 2239.9 | 2258.9 |
| 12.5° | 3324.8 | 3292.7 | 3141.2 | 2923.7 | 2689.0 | 2447.0 | 2223.9 | 1995.7 | 1858.7 | 1795.2 | 1797.2 |
| 15° | 3312.8 | 3254.7 | 3047.2 | 2760.5 | 2445.4 | 2124.9 | 1820.2 | 1552.1 | 1406.1 | 1341.1 | 1310.5 |
| 17.5° | 3302.8 | 3213.7 | 2938.1 | 2577.0 | 2157.8 | 1751.2 | 1385.0 | 1146.0 | 1065.9 | 1046.9 | 1038.9 |
| 20° | 3288.7 | 3170.2 | 2816.6 | 2364.5 | 1830.2 | 1333.0 | 1011.4 | 893.4 | 893.8 | 915.9 | 918.9 |
| 22.5° | 3269.3 | 3120.7 | 2687.0 | 2125.8 | 1478.6 | 970.9 | 792.8 | 758.8 | 793.3 | 835.3 | 842.9 |
| 25° | 3240.3 | 3062.2 | 2543.0 | 1862.3 | 1127.5 | 746.3 | 677.2 | 675.7 | 717.8 | 761.8 | 768.3 |
| 27.5° | 3199.2 | 2985.7 | 2382.9 | 1579.2 | 830.8 | 634.3 | 606.7 | 617.2 | 648.3 | 680.3 | 682.7 |
| 30° | 3144.3 | 2896.6 | 2206.4 | 1280.5 | 651.2 | 564.7 | 561.7 | 571.2 | 590.2 | 612.8 | 614.7 |
| 32.5° | 3083.7 | 2806.1 | 2017.8 | 991.4 | 557.7 | 527.2 | 530.2 | 534.7 | 543.7 | 552.7 | 554.7 |
| 35° | 3028.6 | 2713.6 | 1824.7 | 753.2 | 513.2 | 502.7 | 500.7 | 499.7 | 500.7 | 497.7 | 498.2 |
| 37.5° | 2993.2 | 2637.0 | 1623.6 | 599.7 | 487.7 | 481.1 | 475.2 | 467.6 | 459.2 | 454.2 | 455.2 |
| 40° | 2980.1 | 2580.0 | 1420.1 | 518.2 | 466.7 | 462.1 | 450.7 | 434.7 | 424.7 | 421.6 | 421.6 |
| 42.5° | 3015.1 | 2550.5 | 1223.5 | 477.2 | 449.2 | 441.6 | 422.6 | 404.2 | 396.7 | 396.2 | 395.6 |
| 45° | 3122.2 | 2562.5 | 1036.4 | 454.7 | 433.2 | 418.6 | 393.7 | 378.1 | 373.2 | 374.1 | 373.6 |
| 47.5° | 3314.3 | 2638.0 | 876.3 | 439.7 | 417.1 | 398.1 | 370.1 | 357.6 | 351.7 | 351.7 | 352.1 |
| 50° | 3641.0 | 2814.6 | 748.8 | 427.2 | 403.6 | 379.1 | 353.1 | 337.6 | 329.6 | 329.1 | 329.1 |
| 52.5° | 4116.6 | 3130.7 | 669.2 | 416.7 | 388.6 | 362.2 | 336.1 | 316.6 | 307.1 | 305.1 | 304.2 |
| 55° | 4712.8 | 3583.8 | 647.2 | 409.7 | 368.6 | 343.6 | 315.6 | 296.1 | 285.6 | 281.1 | 280.6 |
| 57.5° | 5379.6 | 4135.1 | 690.7 | 401.1 | 348.1 | 321.7 | 293.2 | 274.6 | 263.6 | 258.1 | 257.6 |
| 60° | 6054.3 | 4736.8 | 868.3 | 389.1 | 331.2 | 297.6 | 270.1 | 253.1 | 242.1 | 236.1 | 235.1 |
| 62.5° | 6730.2 | 5371.1 | 1230.9 | 388.2 | 319.1 | 274.6 | 246.6 | 232.0 | 221.6 | 215.1 | 213.6 |
| 65° | 7492.4 | 6065.4 | 1643.2 | 414.6 | 315.1 | 253.6 | 222.5 | 211.1 | 202.1 | 196.1 | 195.5 |
| 67.5° | 8367.7 | 6849.2 | 1603.7 | 469.2 | 328.6 | 234.6 | 200.1 | 191.1 | 184.5 | 179.6 | 179.0 |
| 70° | 8778.4 | 6726.6 | 996.8 | 507.7 | 347.7 | 216.1 | 178.6 | 172.1 | 167.0 | 163.6 | 162.1 |
| 71° | 8606.4 | 6387.0 | 835.8 | 503.2 | 345.6 | 208.1 | 170.1 | 165.1 | 160.0 | 157.1 | 155.6 |
| 72.5° | 8137.2 | 5824.8 | 697.3 | 468.2 | 323.2 | 193.6 | 159.1 | 154.1 | 149.5 | 146.1 | 145.0 |
| 75° | 7301.8 | 5202.0 | 558.2 | 374.1 | 257.6 | 163.6 | 139.5 | 134.0 | 130.5 | 128.6 | 126.5 |
| 77.5° | 5367.6 | 3712.4 | 431.7 | 295.6 | 189.6 | 133.6 | 119.1 | 115.0 | 111.5 | 108.5 | 107.0 |
| 80° | 2056.3 | 1438.0 | 290.6 | 220.6 | 139.1 | 105.5 | 96.0 | 94.0 | 90.5 | 88.5 | 88.5 |
| 82.5° | 553.7 | 429.6 | 155.1 | 133.6 | 93.1 | 77.0 | 73.5 | 72.6 | 69.5 | 65.5 | 66.0 |
| 85° | 224.1 | 189.6 | 87.0 | 73.5 | 57.0 | 45.6 | 49.6 | 50.0 | 46.5 | 41.5 | 42.0 |
| 87.5° | 98.6 | 80.5 | 48.5 | 32.5 | 25.0 | 17.5 | 22.5 | 22.5 | 20.5 | 17.0 | 15.5 |
| 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

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 (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 | 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)