

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: P383402

Luminaire Tested: **GLEON-SA7A-735-U-T3-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P383402
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-15)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA7A-735-U-T3-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(7) 70 CRI, 3500K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22376.7 lumens
Efficiency: N/A
Efficacy: 99.0 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B2 - U0 - G4

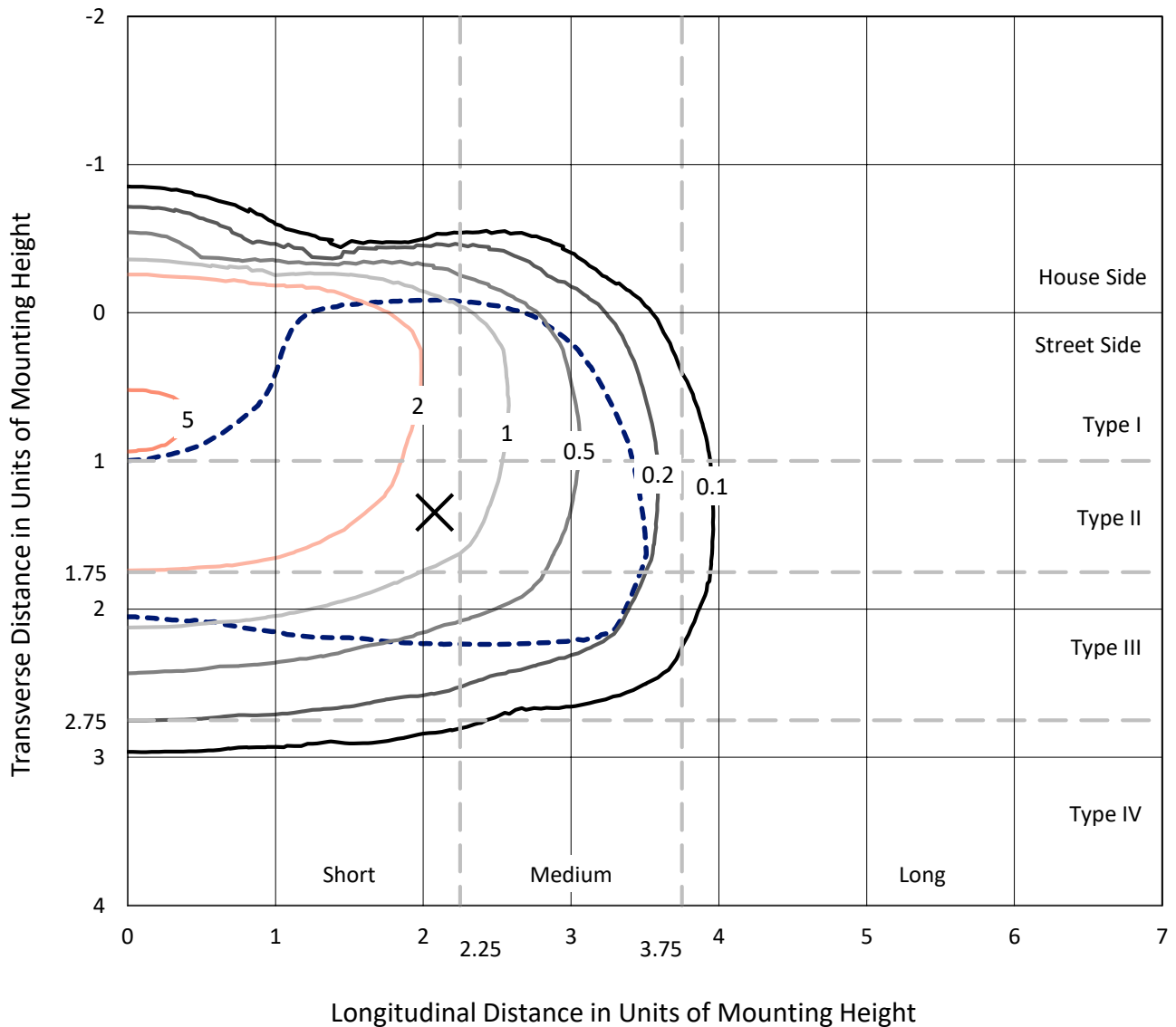
Input Watts (W): 226
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P383402
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Iso-Footcandle Lines of Horizontal Illumination

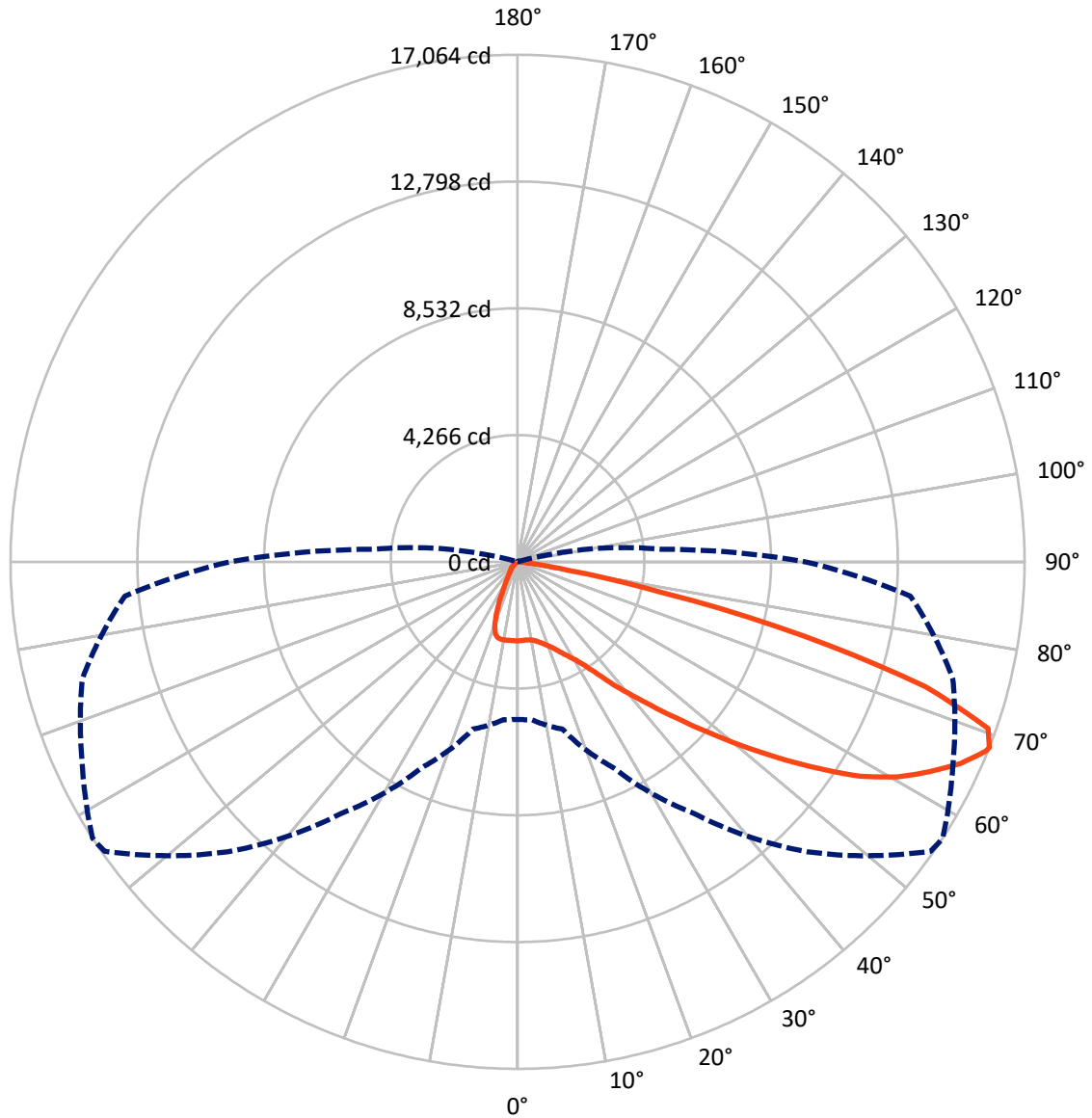
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.5 fc
 Type III - Short - N/A

REPORT NUMBER: P383402
CATALOG NUMBER: GLEON-SA7A-735-U-T3-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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 CATALOG NUMBER: GLEON-SA7A-735-U-T3-HSS

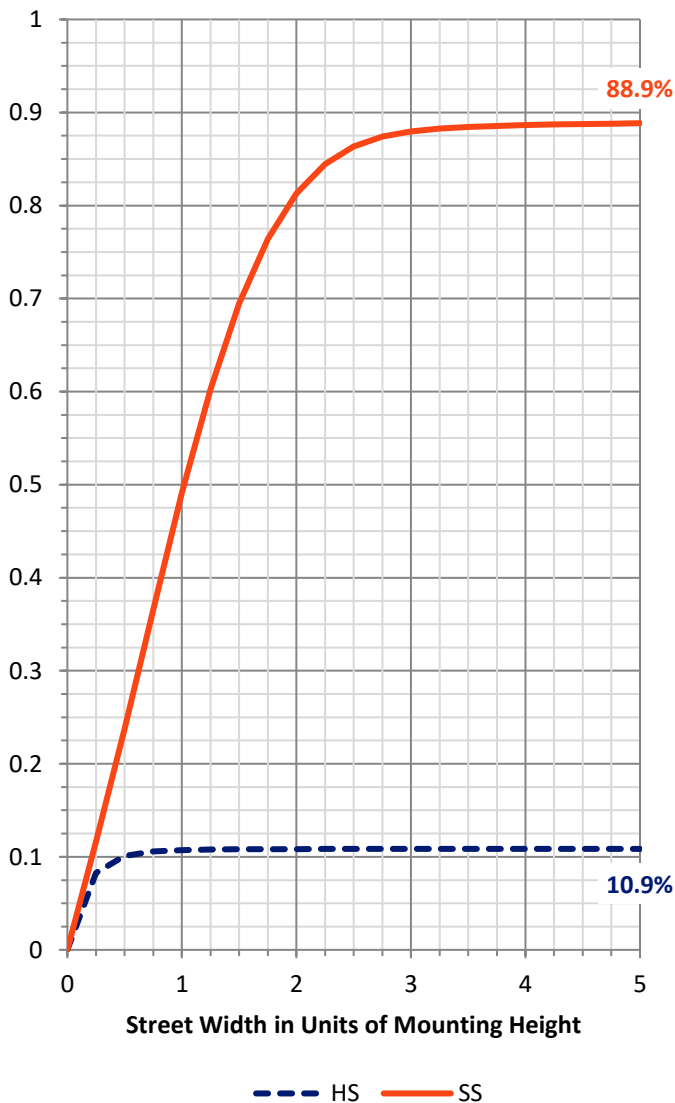
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2453.7 | 0.0 | 2453.7 |
| | % Fixture | 11.0 | 0.0 | 11.0 |
| Street Side | Lumens | 19923.0 | 0.0 | 19923.0 |
| | % Fixture | 89.0 | 0.0 | 89.0 |
| Total | Lumens | 22376.7 | 0.0 | 22376.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 248.8 | 1.1 |
| 10°-20° | 689.5 | 3.1 |
| 20°-30° | 1189.5 | 5.3 |
| 30°-40° | 2053.1 | 9.2 |
| 40°-50° | 3511.8 | 15.7 |
| 50°-60° | 5618.6 | 25.1 |
| 60°-70° | 6491.7 | 29.0 |
| 70°-80° | 2480.6 | 11.1 |
| 80°-90° | 93.0 | 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° | 22376.7 | 100.0 |
| 0°-180° | 22376.7 | 100.0 |

Coefficient of Utilization

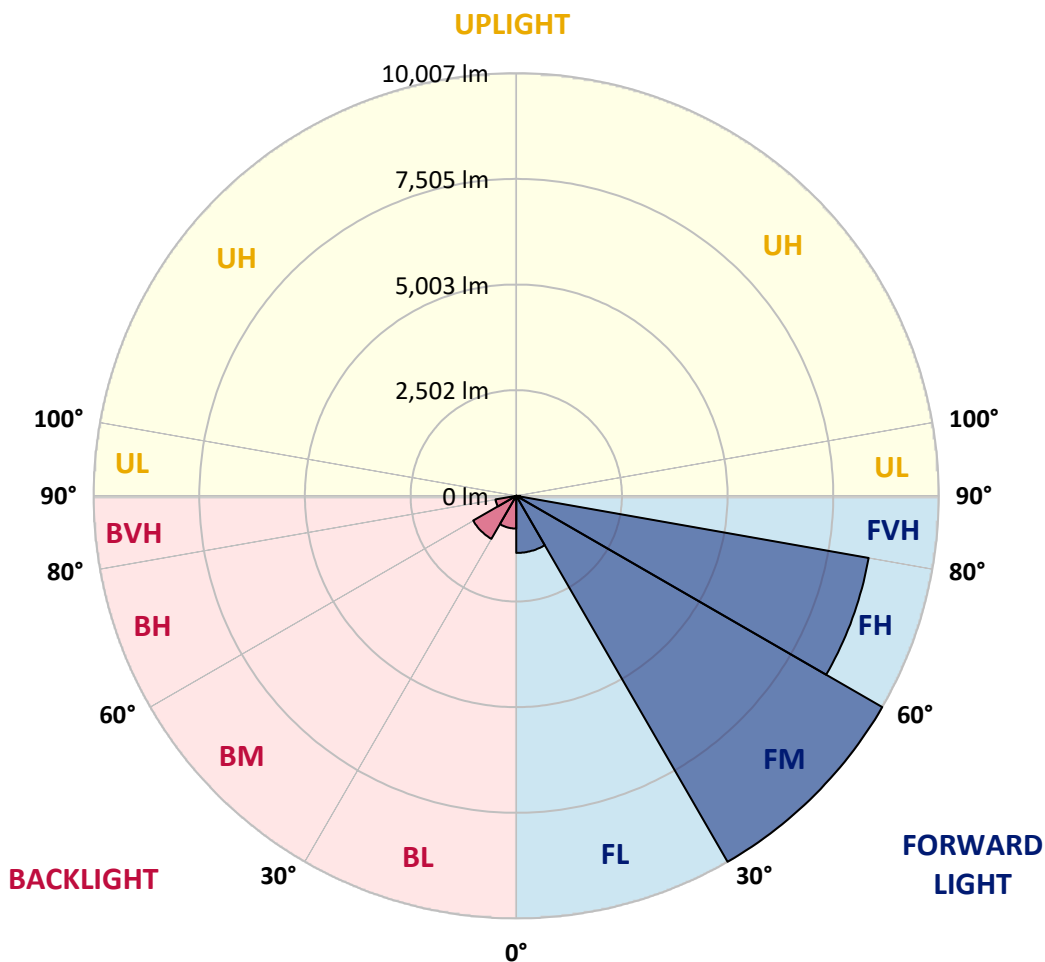


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 1352.5 | 6.0 | | | |
| FM (30°-60°) | 10006.7 | 44.7 | | | |
| FH (60°-80°) | 8472.5 | 37.9 | | | G4/12000 |
| FVH (80°-90°) | 91.3 | 0.4 | | | G1/100 |
| BL (0°-30°) | 775.5 | 3.5 | B2/1000 | | |
| BM (30°-60°) | 1176.9 | 5.3 | B2/2500 | | |
| BH (60°-80°) | 499.7 | 2.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.7 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G4
 Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 |
| 2.5° | 2596.5 | 2608.1 | 2616.6 | 2621.9 | 2628.3 | 2642.1 | 2646.2 | 2652.6 | 2655.7 | 2655.7 | 2663.2 |
| 5° | 2493.8 | 2506.6 | 2524.6 | 2539.4 | 2569.0 | 2607.1 | 2634.6 | 2645.2 | 2664.2 | 2681.2 | 2690.7 |
| 7.5° | 2398.6 | 2413.5 | 2434.6 | 2469.5 | 2520.3 | 2581.7 | 2638.8 | 2653.6 | 2690.7 | 2726.6 | 2744.6 |
| 10° | 2337.3 | 2348.9 | 2376.5 | 2426.1 | 2492.8 | 2578.5 | 2658.9 | 2676.9 | 2740.4 | 2800.7 | 2834.6 |
| 12.5° | 2316.1 | 2326.7 | 2355.2 | 2411.3 | 2493.8 | 2594.4 | 2705.5 | 2731.9 | 2825.1 | 2912.9 | 2960.5 |
| 15° | 2346.8 | 2348.9 | 2379.6 | 2432.6 | 2514.0 | 2633.6 | 2782.7 | 2814.5 | 2932.0 | 3046.2 | 3105.4 |
| 17.5° | 2465.3 | 2455.7 | 2471.7 | 2495.0 | 2559.5 | 2685.4 | 2864.2 | 2911.8 | 3068.4 | 3202.8 | 3258.8 |
| 20° | 2761.6 | 2761.6 | 2725.6 | 2662.1 | 2663.2 | 2765.8 | 2974.2 | 3028.2 | 3219.7 | 3375.3 | 3426.0 |
| 22.5° | 3268.4 | 3258.8 | 3186.9 | 3031.3 | 2888.5 | 2904.4 | 3108.7 | 3178.4 | 3401.7 | 3567.8 | 3584.8 |
| 25° | 3877.8 | 3866.2 | 3755.1 | 3536.1 | 3288.5 | 3128.7 | 3290.6 | 3371.0 | 3618.6 | 3765.7 | 3730.8 |
| 27.5° | 4523.3 | 4513.7 | 4403.7 | 4131.8 | 3779.5 | 3486.3 | 3507.6 | 3583.7 | 3839.7 | 3984.7 | 3873.7 |
| 30° | 5148.6 | 5151.7 | 5042.7 | 4763.5 | 4364.6 | 3942.4 | 3782.6 | 3827.1 | 4054.6 | 4201.7 | 4042.9 |
| 32.5° | 5743.3 | 5747.5 | 5653.3 | 5341.1 | 4968.7 | 4472.5 | 4163.6 | 4151.9 | 4304.2 | 4449.2 | 4267.2 |
| 35° | 6273.3 | 6283.9 | 6219.4 | 5977.1 | 5582.4 | 5062.9 | 4657.6 | 4630.2 | 4658.7 | 4822.7 | 4611.1 |
| 37.5° | 6784.4 | 6790.7 | 6742.1 | 6537.9 | 6207.7 | 5711.5 | 5281.9 | 5242.7 | 5181.4 | 5307.3 | 5065.0 |
| 40° | 7344.1 | 7328.2 | 7272.1 | 7087.0 | 6803.5 | 6427.8 | 5952.8 | 5885.1 | 5778.1 | 5890.3 | 5661.8 |
| 42.5° | 7864.7 | 7846.7 | 7856.2 | 7646.7 | 7407.6 | 7164.3 | 6734.6 | 6618.3 | 6555.9 | 6684.9 | 6394.0 |
| 45° | 8515.4 | 8505.9 | 8537.6 | 8355.6 | 8162.0 | 7985.3 | 7630.9 | 7503.9 | 7476.3 | 7627.7 | 7279.6 |
| 47.5° | 9157.7 | 9181.0 | 9279.3 | 9202.1 | 9123.8 | 8968.3 | 8579.9 | 8522.8 | 8539.7 | 8722.7 | 8213.8 |
| 50° | 9693.0 | 9720.5 | 9990.4 | 10079.3 | 10192.4 | 10101.4 | 9712.0 | 9677.2 | 9743.8 | 9908.9 | 9219.0 |
| 52.5° | 10080.3 | 10136.4 | 10471.8 | 10881.2 | 11293.9 | 11355.3 | 10966.9 | 10935.3 | 11025.1 | 11050.6 | 9995.6 |
| 55° | 10349.0 | 10398.8 | 10778.6 | 11527.7 | 12367.9 | 12632.3 | 12391.1 | 12268.4 | 12251.4 | 12000.7 | 10812.5 |
| 57.5° | 10396.6 | 10391.3 | 10937.3 | 11945.7 | 13210.1 | 13892.5 | 13740.1 | 13619.5 | 13272.5 | 12878.9 | 11748.9 |
| 60° | 10127.9 | 10158.6 | 10792.4 | 12090.6 | 13739.1 | 14845.9 | 14857.5 | 14700.9 | 14160.2 | 13732.8 | 12656.7 |
| 62.5° | 9300.5 | 9425.3 | 10065.5 | 11710.8 | 13732.8 | 15230.0 | 15676.5 | 15556.8 | 14910.4 | 14432.2 | 13577.2 |
| 65° | 7958.9 | 8003.3 | 8613.8 | 10409.3 | 12804.9 | 15069.1 | 16414.0 | 16369.4 | 15586.5 | 15111.5 | 14050.2 |
| 67.5° | 5812.0 | 5715.7 | 6356.9 | 8196.9 | 10841.1 | 14131.7 | 16943.0 | 16999.1 | 16108.1 | 15251.1 | 13546.6 |
| 68° | 5304.1 | 5332.7 | 5832.1 | 7649.9 | 10326.9 | 13800.5 | 16977.8 | 17063.5 | 16160.0 | 15160.1 | 13271.5 |
| 70° | 3161.5 | 3216.5 | 3662.0 | 5267.1 | 7856.2 | 11926.6 | 16601.2 | 16796.9 | 15851.0 | 14221.6 | 11479.1 |
| 72.5° | 807.3 | 873.0 | 1294.0 | 2357.4 | 4487.3 | 8403.2 | 14014.2 | 14345.4 | 13762.4 | 11537.2 | 7749.4 |
| 75° | 332.2 | 349.1 | 462.4 | 776.6 | 1671.8 | 3785.8 | 9237.0 | 9945.9 | 9540.6 | 6907.1 | 3502.2 |
| 77.5° | 229.6 | 241.3 | 297.3 | 430.7 | 723.7 | 1283.5 | 4528.5 | 5040.7 | 4541.3 | 2357.4 | 764.0 |
| 80° | 165.1 | 174.6 | 212.7 | 286.7 | 415.8 | 458.1 | 1476.0 | 1706.7 | 1355.4 | 517.4 | 189.4 |
| 82.5° | 98.4 | 105.8 | 158.7 | 204.2 | 252.9 | 219.0 | 367.1 | 416.9 | 392.6 | 257.1 | 84.7 |
| 85° | 48.6 | 57.1 | 106.8 | 146.0 | 136.5 | 92.0 | 112.2 | 124.8 | 154.5 | 156.6 | 45.5 |
| 87.5° | 3.2 | 6.3 | 62.4 | 87.8 | 38.1 | 21.1 | 32.8 | 40.2 | 55.1 | 77.2 | 19.0 |
| 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: P383402

CATALOG NUMBER: GLEON-SA7A-735-U-T3-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 | 2658.9 |
| 2.5° | 2666.4 | 2667.4 | 2660.0 | 2656.9 | 2658.9 | 2646.2 | 2640.9 | 2643.1 | 2643.1 | 2646.2 | 2640.9 |
| 5° | 2692.8 | 2692.8 | 2680.1 | 2663.2 | 2653.6 | 2629.3 | 2613.5 | 2609.2 | 2606.0 | 2604.0 | 2599.7 |
| 7.5° | 2749.9 | 2743.6 | 2721.3 | 2684.3 | 2652.6 | 2599.7 | 2559.5 | 2538.3 | 2527.8 | 2523.5 | 2520.3 |
| 10° | 2842.0 | 2830.3 | 2793.3 | 2724.5 | 2651.6 | 2557.4 | 2469.5 | 2407.1 | 2355.2 | 2334.1 | 2321.4 |
| 12.5° | 2965.8 | 2948.8 | 2886.4 | 2772.2 | 2644.1 | 2470.7 | 2280.1 | 2097.1 | 1926.7 | 1856.9 | 1822.0 |
| 15° | 3108.7 | 3084.3 | 2985.9 | 2812.3 | 2600.8 | 2274.8 | 1861.1 | 1540.6 | 1304.6 | 1215.8 | 1177.7 |
| 17.5° | 3253.6 | 3221.9 | 3072.6 | 2837.8 | 2470.7 | 1869.6 | 1305.7 | 986.1 | 828.5 | 786.1 | 771.3 |
| 20° | 3399.6 | 3353.0 | 3147.8 | 2818.7 | 2176.5 | 1347.9 | 861.3 | 720.6 | 675.1 | 662.3 | 658.1 |
| 22.5° | 3538.2 | 3466.3 | 3215.5 | 2744.6 | 1723.6 | 904.6 | 681.4 | 637.0 | 622.2 | 614.7 | 612.6 |
| 25° | 3658.8 | 3558.3 | 3274.8 | 2516.1 | 1220.0 | 683.5 | 613.7 | 598.9 | 579.8 | 566.1 | 567.1 |
| 27.5° | 3772.0 | 3650.4 | 3310.7 | 2139.4 | 813.6 | 584.1 | 568.2 | 548.1 | 513.2 | 493.1 | 493.1 |
| 30° | 3908.5 | 3773.1 | 3337.2 | 1646.3 | 598.9 | 516.4 | 503.7 | 472.9 | 425.3 | 398.9 | 398.9 |
| 32.5° | 4113.8 | 3959.4 | 3320.2 | 1155.4 | 496.2 | 453.9 | 424.3 | 381.9 | 330.1 | 304.7 | 303.7 |
| 35° | 4428.0 | 4247.1 | 3199.6 | 757.6 | 438.0 | 394.7 | 347.1 | 295.2 | 249.7 | 228.5 | 227.5 |
| 37.5° | 4851.3 | 4632.2 | 2928.8 | 541.7 | 392.6 | 339.6 | 282.5 | 225.3 | 191.5 | 177.7 | 176.7 |
| 40° | 5400.5 | 5079.8 | 2541.5 | 439.1 | 350.3 | 286.7 | 218.0 | 174.6 | 151.3 | 140.8 | 141.8 |
| 42.5° | 6059.6 | 5559.1 | 2077.0 | 378.8 | 309.0 | 236.0 | 170.4 | 137.6 | 122.8 | 115.3 | 113.2 |
| 45° | 6791.8 | 6032.1 | 1590.2 | 337.5 | 267.7 | 190.4 | 133.3 | 109.0 | 97.3 | 93.2 | 93.2 |
| 47.5° | 7597.0 | 6492.3 | 1163.9 | 301.5 | 223.3 | 147.1 | 106.8 | 88.9 | 79.4 | 76.2 | 75.1 |
| 50° | 8328.1 | 6811.8 | 839.0 | 263.4 | 183.0 | 116.4 | 86.7 | 74.1 | 67.7 | 63.4 | 63.4 |
| 52.5° | 8937.5 | 6912.4 | 617.9 | 222.2 | 148.1 | 93.2 | 71.9 | 63.4 | 57.1 | 53.9 | 53.9 |
| 55° | 9474.0 | 6871.1 | 459.2 | 183.0 | 119.5 | 76.2 | 61.4 | 53.9 | 48.6 | 45.5 | 45.5 |
| 57.5° | 9988.2 | 6737.8 | 342.8 | 149.2 | 96.3 | 61.4 | 51.9 | 45.5 | 40.2 | 38.1 | 38.1 |
| 60° | 10408.3 | 6515.6 | 255.0 | 120.6 | 77.2 | 49.7 | 43.4 | 37.1 | 32.8 | 29.6 | 29.6 |
| 62.5° | 10748.9 | 6270.2 | 187.2 | 99.5 | 61.4 | 39.1 | 33.8 | 30.6 | 24.3 | 21.1 | 21.1 |
| 65° | 10751.1 | 5862.8 | 140.8 | 82.5 | 47.6 | 30.6 | 25.4 | 24.3 | 15.8 | 12.7 | 11.6 |
| 67.5° | 9973.4 | 5054.4 | 108.0 | 70.9 | 37.1 | 23.3 | 19.0 | 20.1 | 8.5 | 5.3 | 4.2 |
| 68° | 9690.9 | 4849.2 | 101.5 | 69.9 | 34.9 | 22.3 | 18.0 | 20.1 | 7.5 | 4.2 | 3.2 |
| 70° | 8170.4 | 3857.7 | 81.5 | 67.7 | 30.6 | 17.0 | 14.8 | 20.1 | 6.3 | 3.2 | 2.1 |
| 72.5° | 5225.8 | 2238.9 | 60.3 | 53.9 | 23.3 | 12.7 | 9.5 | 18.0 | 6.3 | 2.1 | 1.0 |
| 75° | 2224.1 | 694.1 | 41.3 | 38.1 | 13.8 | 9.5 | 6.3 | 11.6 | 4.2 | 1.0 | 0.0 |
| 77.5° | 468.8 | 156.6 | 24.3 | 23.3 | 9.5 | 6.3 | 4.2 | 3.2 | 1.0 | 0.0 | 0.0 |
| 80° | 120.6 | 45.5 | 12.7 | 11.6 | 5.3 | 3.2 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 38.1 | 18.0 | 7.5 | 5.3 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 19.0 | 10.6 | 4.2 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 10.6 | 3.2 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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

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

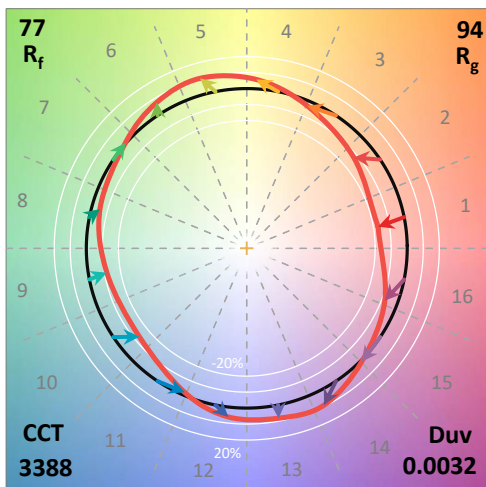
| λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 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 ($R_{f,i}$)

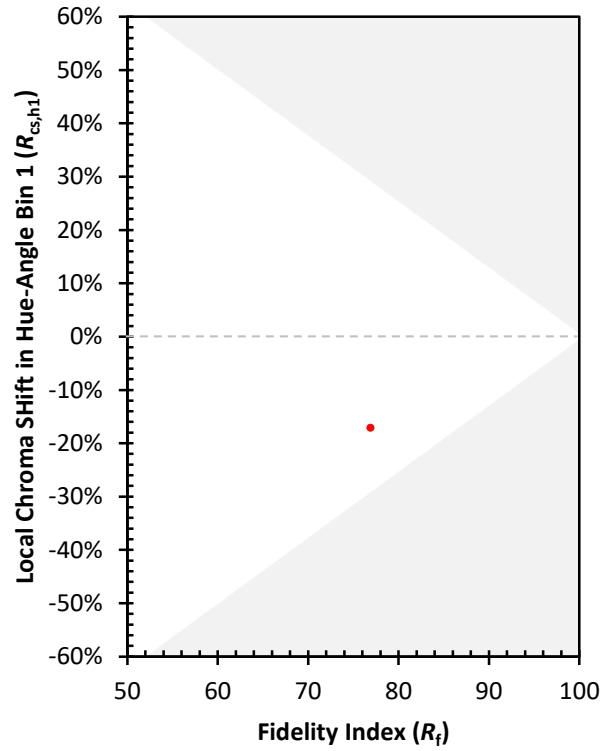
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 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)