

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: P322742

Luminaire Tested: **GLEON-SA8D-830-U-T4FT-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P322742
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-17)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA8D-830-U-T4FT-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(8) 80 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
FORWARD THROW OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 35091 lumens
Efficiency: N/A
Efficacy: 68.7 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

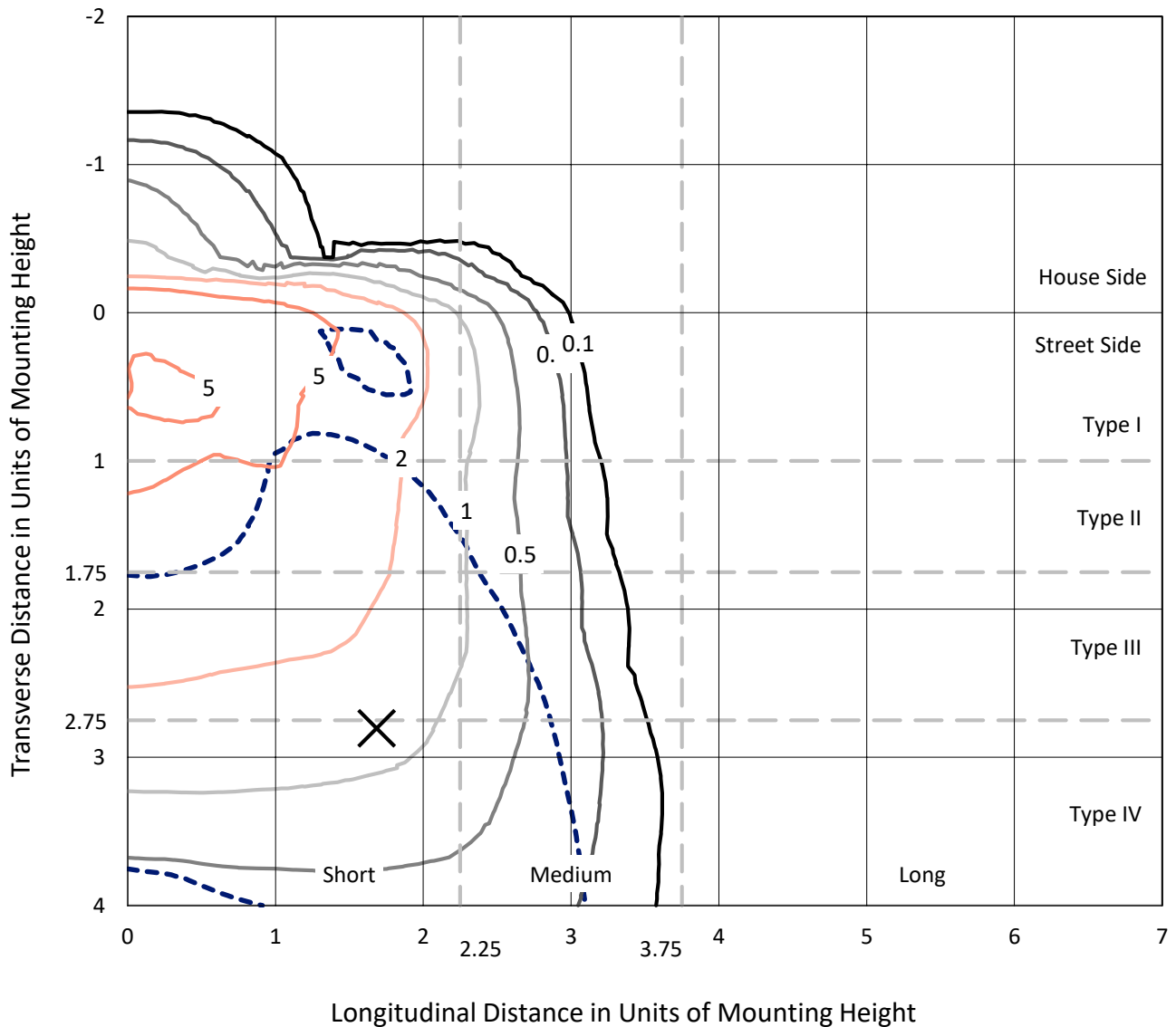
Input Watts (W): 511
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P322742
 CATALOG NUMBER: GLEON-SA8D-830-U-T4FT-HSS

Iso-Footcandle Lines of Horizontal Illumination

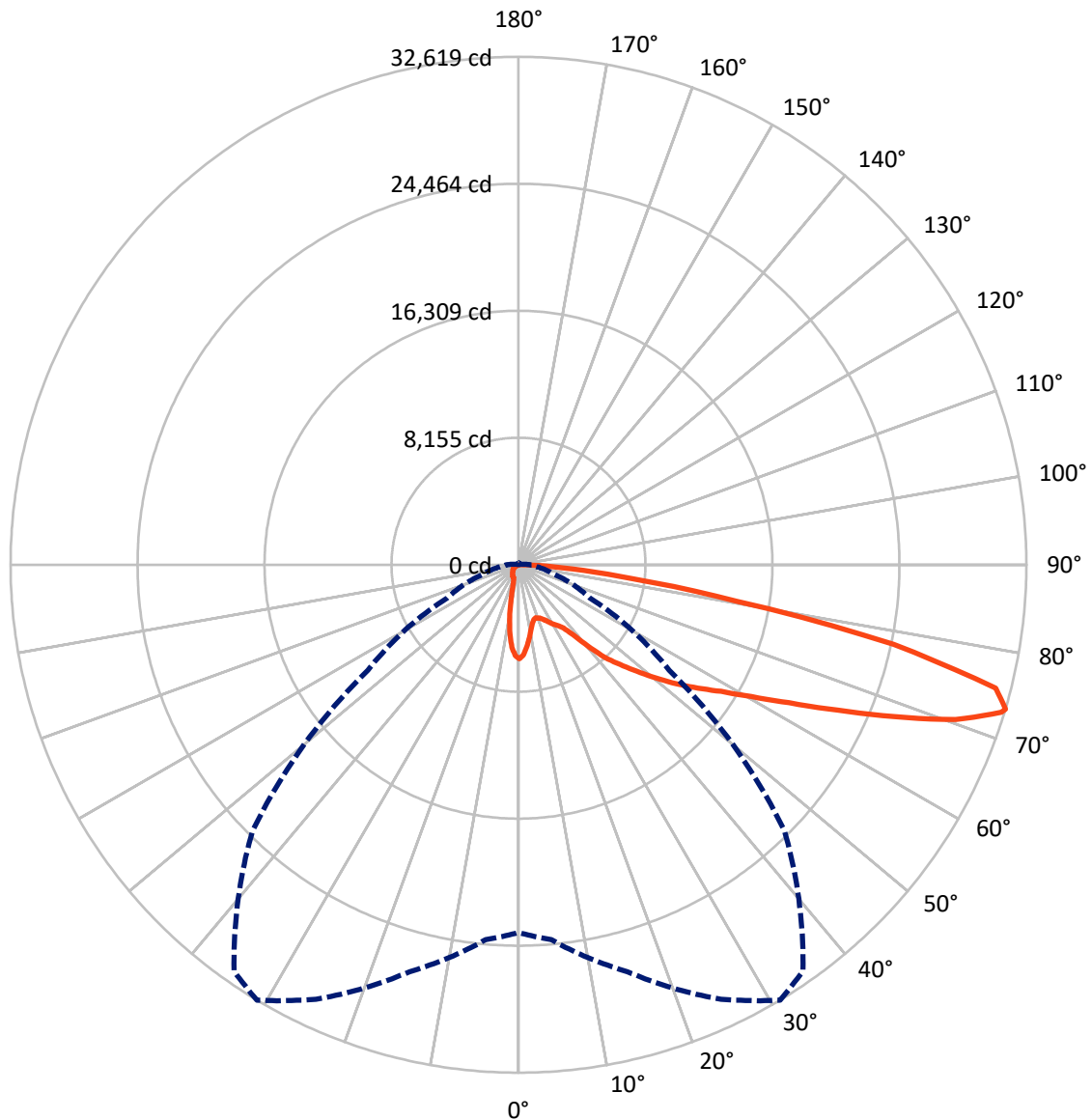
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.7 fc
 Type IV - Short - N/A

REPORT NUMBER: P322742
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Luminous Intensity Polar Plot



— Vertical Plane Through 31-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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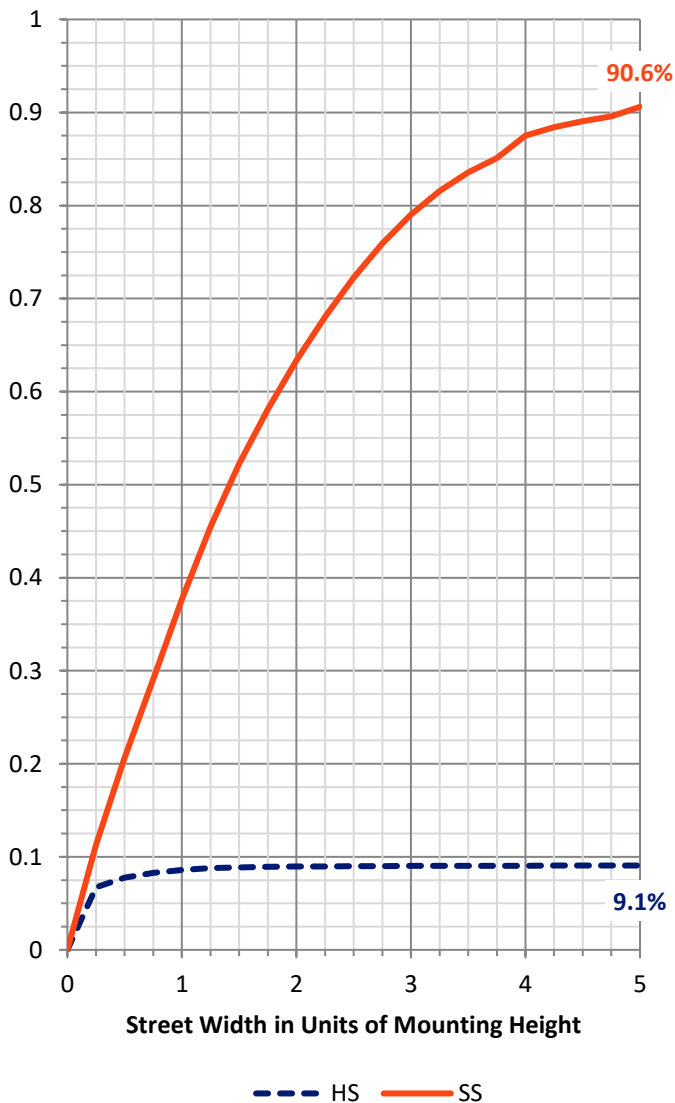
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3198.7 | 0.0 | 3198.7 |
| | % Fixture | 9.1 | 0.0 | 9.1 |
| Street Side | Lumens | 31892.3 | 0.0 | 31892.3 |
| | % Fixture | 90.9 | 0.0 | 90.9 |
| Total | Lumens | 35091.0 | 0.0 | 35091.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 500.6 | 1.4 |
| 10°-20° | 1086.9 | 3.1 |
| 20°-30° | 1628.5 | 4.6 |
| 30°-40° | 2591.0 | 7.4 |
| 40°-50° | 4626.8 | 13.2 |
| 50°-60° | 7179.5 | 20.5 |
| 60°-70° | 9544.1 | 27.2 |
| 70°-80° | 7179.1 | 20.5 |
| 80°-90° | 754.4 | 2.1 |
| 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° | 35091.0 | 100.0 |
| 0°-180° | 35091.0 | 100.0 |

Coefficient of Utilization



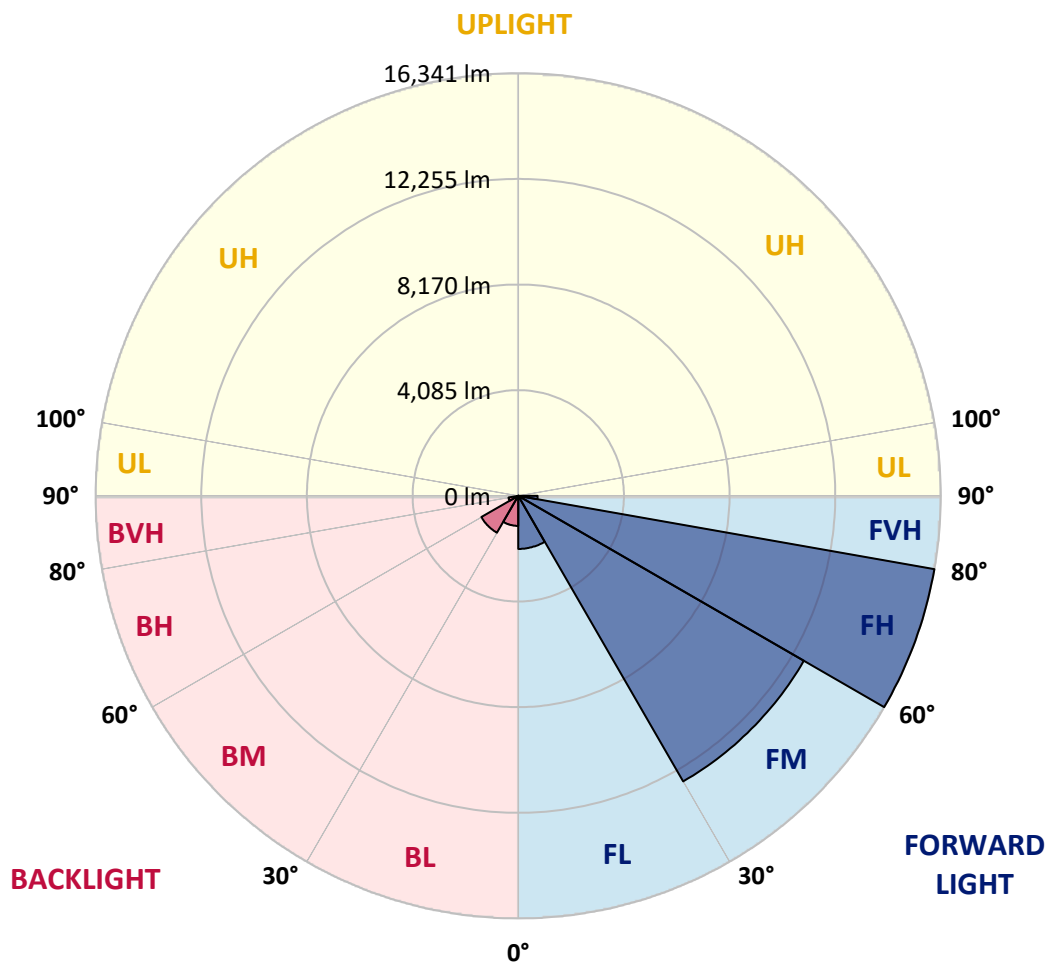
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 2052.9 | 5.9 | | | |
| FM (30°-60°) | 12750.9 | 36.3 | | | |
| FH (60°-80°) | 16340.6 | 46.6 | | | G5 |
| FVH (80°-90°) | 748.0 | 2.1 | | | G4/750 |
| BL (0°-30°) | 1163.2 | 3.3 | B3/2500 | | |
| BM (30°-60°) | 1646.4 | 4.7 | B2/2500 | | |
| BH (60°-80°) | 382.7 | 1.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 6.3 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5

Type IV Short





REPORT NUMBER: P322742

CATALOG NUMBER: GLEON-SA8D-830-U-T4FT-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 31° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 |
| 2.5° | 5721.5 | 5745.6 | 5771.3 | 5776.5 | 5819.4 | 5821.1 | 5882.9 | 5929.3 | 5975.7 | 6020.3 | 6035.8 |
| 5° | 5134.3 | 5173.8 | 5220.1 | 5266.5 | 5357.5 | 5393.5 | 5544.7 | 5699.2 | 5846.9 | 5987.7 | 6056.4 |
| 7.5° | 4507.5 | 4552.1 | 4617.4 | 4732.4 | 4833.8 | 4904.2 | 5142.8 | 5417.6 | 5692.3 | 5951.6 | 6101.0 |
| 10° | 3935.7 | 3976.9 | 4045.6 | 4167.5 | 4323.8 | 4419.9 | 4741.0 | 5122.2 | 5525.8 | 5919.0 | 6168.0 |
| 12.5° | 3571.7 | 3594.0 | 3631.8 | 3762.3 | 3903.1 | 4011.2 | 4389.0 | 4861.2 | 5388.4 | 5917.3 | 6276.2 |
| 15° | 3504.7 | 3511.6 | 3480.7 | 3539.0 | 3648.9 | 3753.7 | 4136.6 | 4650.0 | 5283.7 | 5944.8 | 6417.0 |
| 17.5° | 3611.2 | 3607.7 | 3504.7 | 3497.8 | 3585.4 | 3671.3 | 4013.0 | 4504.1 | 5209.8 | 6008.3 | 6599.0 |
| 20° | 3772.6 | 3760.5 | 3582.0 | 3549.3 | 3642.1 | 3722.8 | 4004.4 | 4449.1 | 5182.3 | 6114.7 | 6820.5 |
| 22.5° | 3987.2 | 3966.6 | 3686.7 | 3652.4 | 3752.0 | 3836.1 | 4110.8 | 4502.4 | 5206.4 | 6257.3 | 7078.1 |
| 25° | 4253.4 | 4222.5 | 3867.0 | 3829.2 | 3930.5 | 4014.7 | 4301.4 | 4655.2 | 5278.5 | 6430.7 | 7404.3 |
| 27.5° | 4553.9 | 4509.2 | 4155.5 | 4057.6 | 4172.7 | 4260.2 | 4555.6 | 4888.7 | 5391.8 | 6614.4 | 7804.4 |
| 30° | 4837.2 | 4778.8 | 4459.4 | 4298.0 | 4438.8 | 4536.7 | 4830.3 | 5166.9 | 5573.8 | 6897.8 | 8352.2 |
| 32.5° | 5122.2 | 5057.0 | 4730.7 | 4538.4 | 4665.5 | 4771.9 | 5113.7 | 5549.8 | 5915.6 | 7330.5 | 9080.3 |
| 35° | 5778.2 | 5709.5 | 5309.4 | 4991.7 | 4990.0 | 5050.1 | 5510.3 | 6073.5 | 6367.2 | 7933.2 | 9949.1 |
| 37.5° | 6882.3 | 6842.8 | 6461.6 | 5858.9 | 5697.5 | 5630.5 | 6051.2 | 6698.6 | 7016.3 | 8762.6 | 10929.6 |
| 40° | 8091.2 | 8056.8 | 7629.3 | 7083.2 | 6837.7 | 6672.8 | 6827.4 | 7569.2 | 7933.2 | 9775.7 | 11930.7 |
| 42.5° | 9456.3 | 9293.2 | 8530.8 | 8367.6 | 8147.8 | 8022.5 | 7883.4 | 8642.4 | 9059.7 | 10878.1 | 12923.2 |
| 45° | 10696.1 | 10421.3 | 9432.3 | 9185.0 | 9135.2 | 9166.1 | 9243.4 | 10084.8 | 10326.9 | 12188.3 | 13912.3 |
| 47.5° | 11434.5 | 11218.1 | 10459.1 | 10222.2 | 10208.4 | 10412.8 | 10996.6 | 11714.4 | 11589.0 | 13330.2 | 14782.9 |
| 50° | 12136.8 | 11941.0 | 11310.8 | 11369.2 | 11432.7 | 11710.9 | 12986.8 | 13390.3 | 12741.2 | 14365.6 | 15581.4 |
| 52.5° | 12705.1 | 12406.4 | 12076.7 | 12404.6 | 12717.2 | 13165.3 | 15040.5 | 14894.5 | 13558.6 | 15189.9 | 16264.8 |
| 55° | 13033.1 | 12897.5 | 13057.2 | 13386.9 | 13974.1 | 14702.2 | 16979.1 | 16146.3 | 14156.1 | 15942.0 | 16719.8 |
| 57.5° | 14235.1 | 13969.0 | 14286.6 | 14571.7 | 15337.5 | 16355.8 | 18639.6 | 17078.7 | 14587.1 | 16407.3 | 16824.6 |
| 60° | 15689.5 | 15474.9 | 15662.1 | 16136.0 | 17169.7 | 18366.6 | 20191.9 | 17839.4 | 14812.1 | 16706.1 | 16553.3 |
| 62.5° | 18004.3 | 17720.9 | 17604.2 | 18134.8 | 19505.0 | 20811.8 | 21369.9 | 18366.6 | 14762.3 | 16573.9 | 15622.6 |
| 65° | 21105.4 | 20811.8 | 20289.8 | 20770.6 | 22513.5 | 23435.6 | 22686.9 | 18478.2 | 14418.9 | 15504.1 | 13270.1 |
| 67.5° | 24282.1 | 24069.2 | 23622.8 | 24433.2 | 26006.1 | 26303.2 | 24079.5 | 18206.9 | 13313.0 | 12571.2 | 9375.6 |
| 70° | 26380.5 | 26289.5 | 26579.7 | 28372.4 | 29775.3 | 29689.4 | 25357.1 | 16749.0 | 10376.7 | 7730.6 | 4638.0 |
| 72.5° | 24867.7 | 25303.8 | 27446.8 | 30697.4 | 32411.1 | 31710.5 | 24701.1 | 12861.4 | 5931.0 | 2974.1 | 1341.1 |
| 73° | 23614.2 | 24172.2 | 27057.0 | 30785.0 | 32618.9 | 31851.3 | 24149.9 | 11805.4 | 5055.3 | 2347.3 | 1016.5 |
| 75° | 16427.9 | 17113.1 | 22400.1 | 28671.2 | 31647.0 | 30347.1 | 20130.1 | 7225.7 | 2342.2 | 1040.6 | 410.4 |
| 77.5° | 7976.1 | 8482.7 | 12334.2 | 20715.6 | 24611.8 | 23710.3 | 12531.7 | 2692.5 | 1057.8 | 650.8 | 188.9 |
| 80° | 2977.5 | 3310.7 | 5354.1 | 10543.3 | 14223.1 | 14595.7 | 5512.0 | 1018.3 | 704.0 | 523.7 | 96.2 |
| 82.5° | 779.6 | 868.9 | 1974.7 | 4701.5 | 7289.3 | 7629.3 | 1737.7 | 513.4 | 515.1 | 431.0 | 58.4 |
| 85° | 249.0 | 285.0 | 616.5 | 2110.4 | 3434.3 | 3015.3 | 453.3 | 249.0 | 374.3 | 321.1 | 32.6 |
| 87.5° | 30.9 | 39.5 | 195.8 | 496.3 | 757.3 | 420.7 | 70.4 | 73.8 | 159.7 | 178.6 | 18.9 |
| 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: P322742

CATALOG NUMBER: GLEON-SA8D-830-U-T4FT-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 | 6037.5 |
| 2.5° | 6051.2 | 6042.6 | 6044.3 | 5999.7 | 5970.5 | 5912.1 | 5852.0 | 5824.6 | 5795.4 | 5783.3 | 5795.4 |
| 5° | 6082.1 | 6066.7 | 6022.0 | 5884.7 | 5738.7 | 5549.8 | 5372.9 | 5239.0 | 5070.7 | 5024.4 | 5072.4 |
| 7.5° | 6130.2 | 6099.3 | 5968.8 | 5688.9 | 5364.4 | 5003.8 | 4598.5 | 4303.2 | 4061.0 | 3904.8 | 3961.5 |
| 10° | 6200.6 | 6142.2 | 5879.5 | 5403.9 | 4823.5 | 4184.7 | 3609.4 | 3161.3 | 2843.6 | 2713.1 | 2707.9 |
| 12.5° | 6319.1 | 6209.2 | 5769.6 | 5032.9 | 4162.4 | 3310.7 | 2556.8 | 2070.9 | 1813.3 | 1646.7 | 1643.3 |
| 15° | 6449.6 | 6288.2 | 5630.5 | 4588.2 | 3393.1 | 2371.4 | 1646.7 | 1277.6 | 1111.0 | 1057.8 | 1050.9 |
| 17.5° | 6609.3 | 6379.2 | 5450.2 | 4040.4 | 2587.7 | 1571.2 | 1074.9 | 968.5 | 961.6 | 956.4 | 956.4 |
| 20° | 6810.2 | 6487.4 | 5218.4 | 3413.7 | 1835.6 | 1049.2 | 913.5 | 920.4 | 923.8 | 917.0 | 918.7 |
| 22.5° | 7043.7 | 6597.3 | 4941.9 | 2740.6 | 1241.5 | 877.5 | 874.0 | 882.6 | 886.0 | 882.6 | 884.3 |
| 25° | 7315.0 | 6724.3 | 4605.4 | 2034.8 | 896.3 | 832.8 | 841.4 | 853.4 | 862.0 | 862.0 | 862.0 |
| 27.5° | 7651.6 | 6878.9 | 4200.1 | 1420.1 | 774.4 | 786.5 | 810.5 | 832.8 | 844.8 | 848.3 | 848.3 |
| 30° | 8089.5 | 7071.2 | 3714.2 | 973.6 | 704.0 | 724.6 | 769.3 | 812.2 | 834.5 | 838.0 | 839.7 |
| 32.5° | 8642.4 | 7287.6 | 3151.0 | 719.5 | 643.9 | 659.4 | 707.5 | 779.6 | 822.5 | 829.4 | 829.4 |
| 35° | 9276.0 | 7538.3 | 2544.8 | 626.8 | 601.0 | 606.2 | 643.9 | 726.4 | 801.9 | 820.8 | 822.5 |
| 37.5° | 9969.7 | 7785.5 | 1935.2 | 585.5 | 564.9 | 564.9 | 592.4 | 662.8 | 752.1 | 810.5 | 817.4 |
| 40° | 10617.1 | 7934.9 | 1356.5 | 552.9 | 532.3 | 532.3 | 556.4 | 607.9 | 692.0 | 779.6 | 798.5 |
| 42.5° | 11214.7 | 7986.4 | 944.4 | 522.0 | 501.4 | 506.6 | 527.2 | 568.4 | 631.9 | 719.5 | 736.7 |
| 45° | 11829.4 | 7977.9 | 688.6 | 486.0 | 470.5 | 486.0 | 501.4 | 532.3 | 578.7 | 628.5 | 631.9 |
| 47.5° | 12293.0 | 7905.7 | 546.1 | 451.6 | 441.3 | 461.9 | 475.6 | 496.3 | 522.0 | 518.6 | 518.6 |
| 50° | 12727.5 | 7730.6 | 439.6 | 405.2 | 412.1 | 436.2 | 443.0 | 449.9 | 451.6 | 419.0 | 415.5 |
| 52.5° | 13057.2 | 7457.6 | 352.0 | 355.4 | 382.9 | 407.0 | 400.1 | 389.8 | 372.6 | 333.1 | 326.3 |
| 55° | 13167.1 | 6932.1 | 276.5 | 293.6 | 340.0 | 370.9 | 345.1 | 322.8 | 290.2 | 257.6 | 250.7 |
| 57.5° | 12967.9 | 6253.8 | 224.9 | 228.4 | 286.8 | 312.5 | 283.3 | 257.6 | 221.5 | 194.0 | 188.9 |
| 60° | 12545.5 | 5500.0 | 185.5 | 171.7 | 221.5 | 243.8 | 224.9 | 199.2 | 166.6 | 146.0 | 144.2 |
| 62.5° | 11707.5 | 4696.4 | 152.8 | 133.9 | 168.3 | 187.2 | 175.1 | 156.3 | 128.8 | 115.0 | 113.3 |
| 65° | 9945.7 | 3757.1 | 123.6 | 108.2 | 130.5 | 146.0 | 135.7 | 121.9 | 101.3 | 91.0 | 89.3 |
| 67.5° | 6942.4 | 2539.7 | 101.3 | 89.3 | 103.0 | 115.0 | 106.5 | 99.6 | 80.7 | 79.0 | 80.7 |
| 70° | 3348.4 | 1224.3 | 84.1 | 72.1 | 80.7 | 89.3 | 85.9 | 80.7 | 77.3 | 89.3 | 103.0 |
| 72.5° | 959.9 | 410.4 | 67.0 | 60.1 | 65.3 | 70.4 | 73.8 | 72.1 | 84.1 | 108.2 | 125.4 |
| 73° | 738.4 | 331.4 | 63.5 | 56.7 | 61.8 | 68.7 | 72.1 | 70.4 | 85.9 | 109.9 | 125.4 |
| 75° | 316.0 | 159.7 | 48.1 | 46.4 | 51.5 | 60.1 | 63.5 | 63.5 | 85.9 | 111.6 | 120.2 |
| 77.5° | 142.5 | 85.9 | 30.9 | 36.1 | 44.6 | 48.1 | 53.2 | 53.2 | 68.7 | 85.9 | 85.9 |
| 80° | 80.7 | 46.4 | 24.0 | 27.5 | 32.6 | 32.6 | 32.6 | 29.2 | 30.9 | 34.3 | 37.8 |
| 82.5° | 51.5 | 30.9 | 18.9 | 22.3 | 20.6 | 17.2 | 13.7 | 13.7 | 12.0 | 13.7 | 17.2 |
| 85° | 29.2 | 17.2 | 17.2 | 13.7 | 8.6 | 6.9 | 8.6 | 6.9 | 1.7 | 0.0 | 1.7 |
| 87.5° | 17.2 | 10.3 | 5.2 | 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2408-195-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **GALN-SB1A-830-U-5WQ**
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K): 3050
 CIE u': 0.2476
 CIE v': 0.5251
 Duv: 0.0034
 CIE x: 0.4383
 CIE y: 0.4131
 CIE z: 0.1487
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 581
 Purity: 55.55201
 Rf: 81.5
 Rg: 99.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 81.0 | | |
| R1: | 79.6 | R9: | 7.1 |
| R2: | 85.6 | R10: | 67.0 |
| R3: | 92.0 | R11: | 82.7 |
| R4: | 82.6 | R12: | 63.2 |
| R5: | 78.9 | R13: | 80.3 |
| R6: | 81.7 | R14: | 95.0 |
| R7: | 85.2 | R15: | 71.7 |
| R8: | 62.0 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2408-195-9

CIE 1931 Chromaticity Diagram



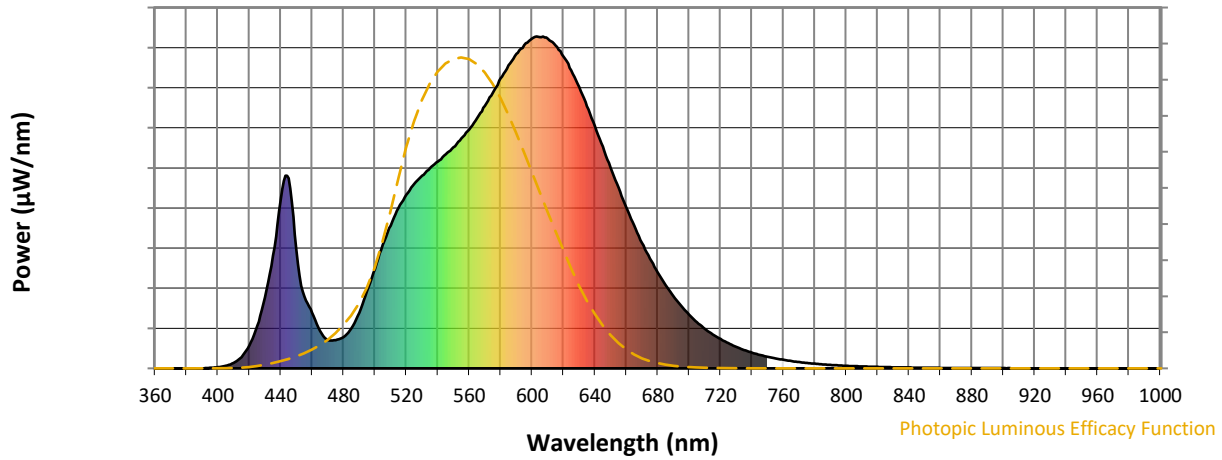
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength



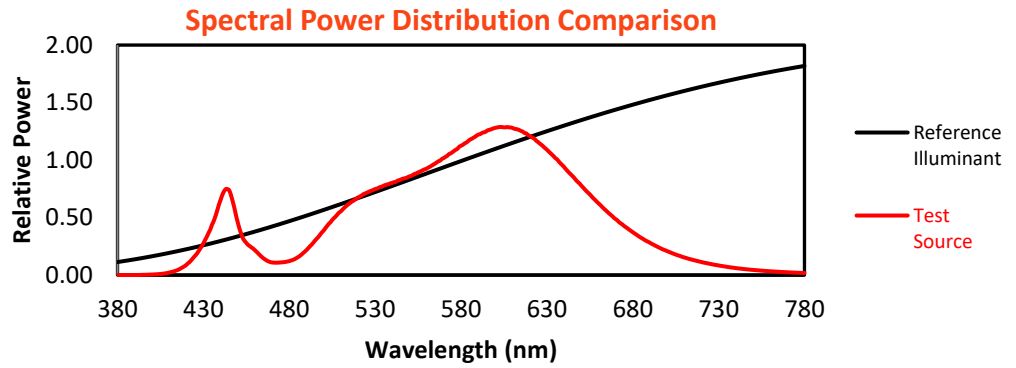
Melanopic Lumens: NR

M/P: 2.32

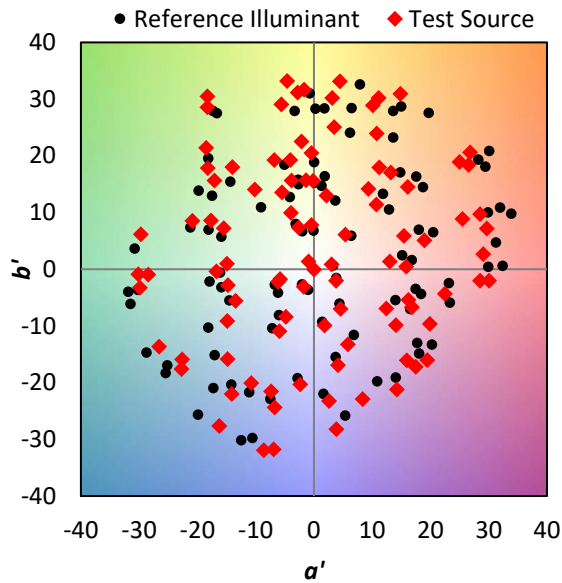
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 81.0$
 $R_9 = 7.1$

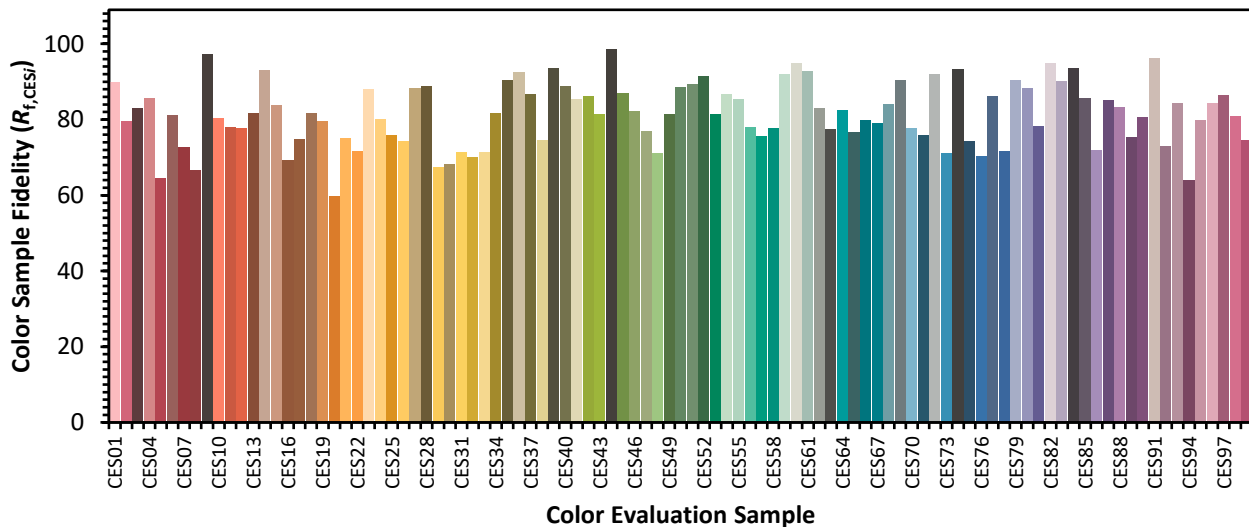


Color Vector Graphics

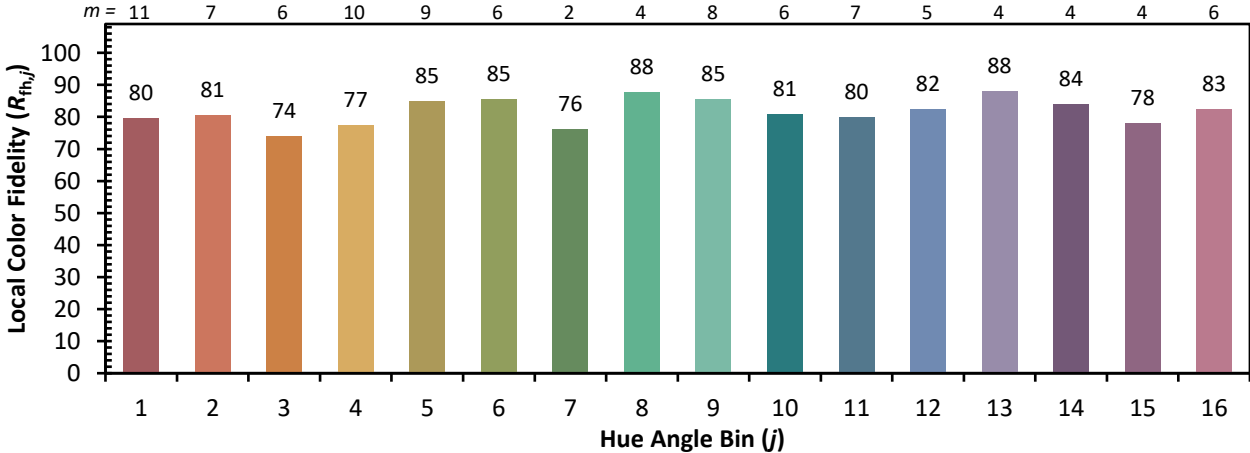


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)