

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: P320957

Luminaire Tested: **GLEON-SA3B-740-U-AFL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P320957
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA3B-740-U-AFL
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(3) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17899 lumens
Efficiency: N/A
Efficacy: 144.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B2 - U0 - G2

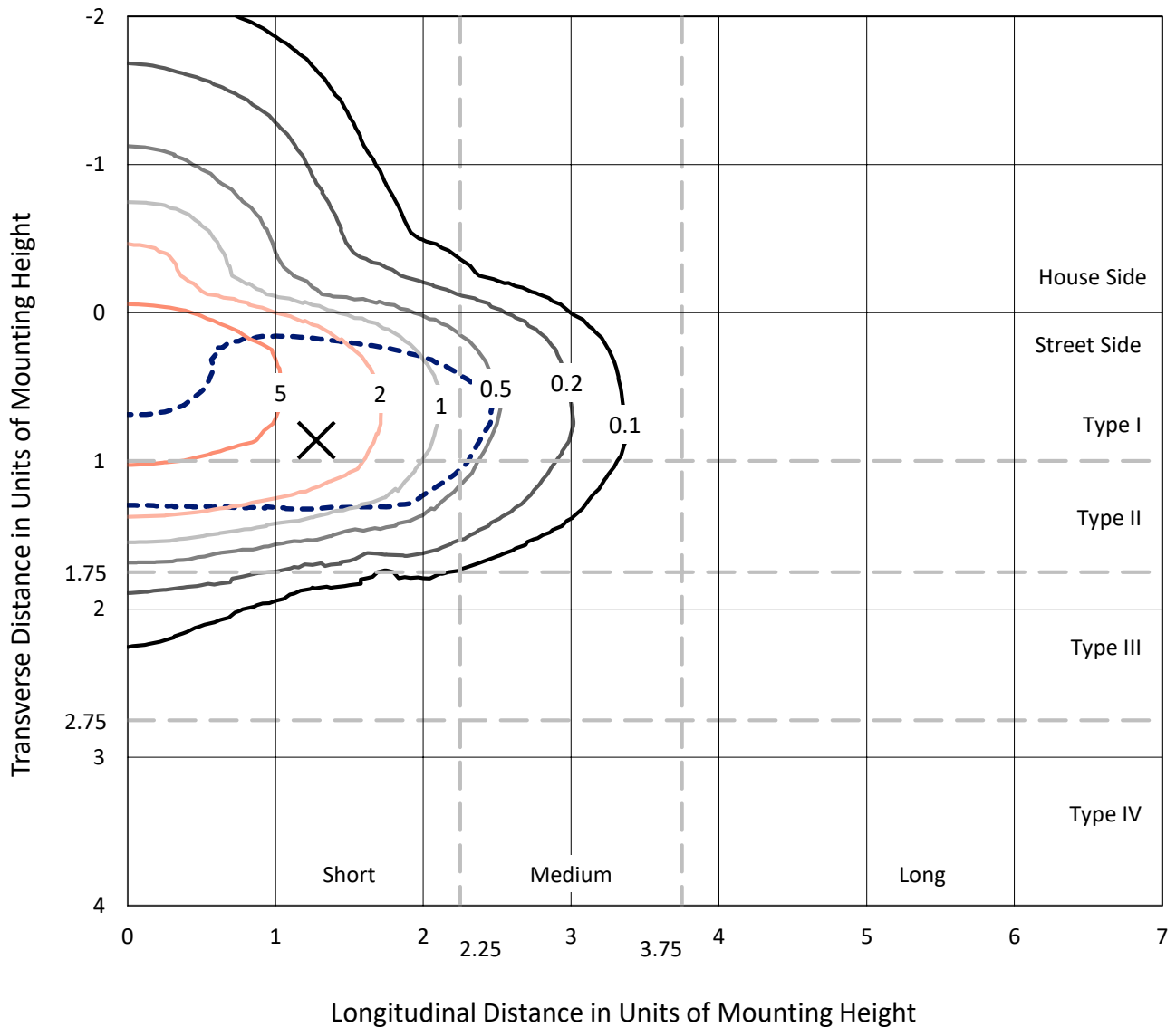
Input Watts (W): 124
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P320957
 CATALOG NUMBER: GLEON-SA3B-740-U-AFL

Iso-Footcandle Lines of Horizontal Illumination

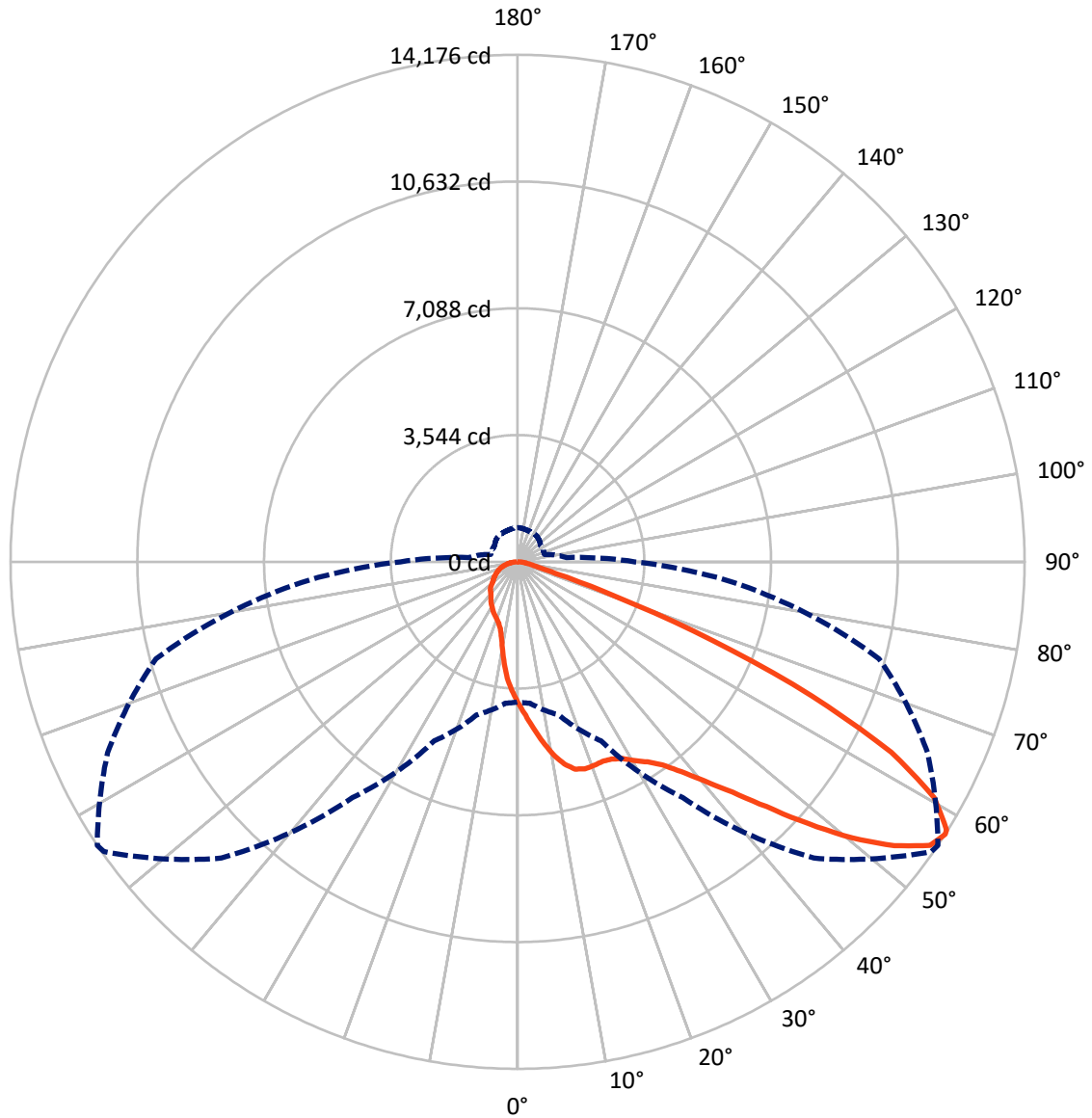
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.8 fc
 Type II - Short - N/A

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CATALOG NUMBER: GLEON-SA3B-740-U-AFL

Luminous Intensity Polar Plot



— Vertical Plane Through 56-Deg Lateral - - - Horizontal Cone Through 57-Deg Vertical

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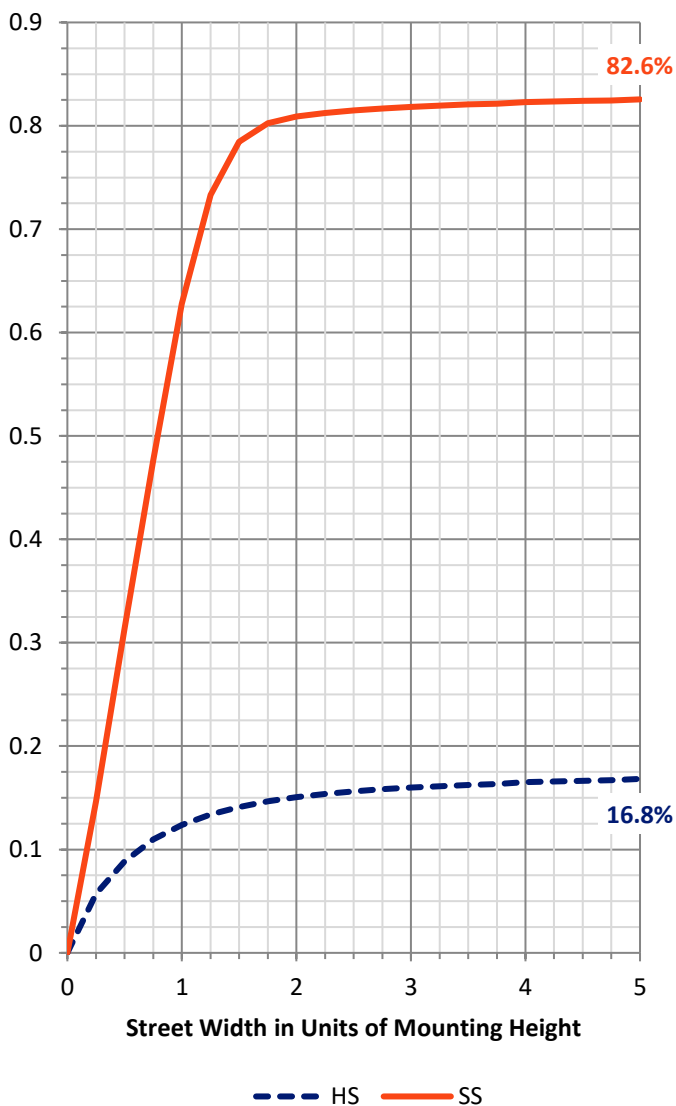
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3085.4 | 0.0 | 3085.4 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 14813.6 | 0.0 | 14813.6 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 17899.0 | 0.0 | 17899.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 379.2 | 2.1 |
| 10°-20° | 1072.2 | 6.0 |
| 20°-30° | 1746.4 | 9.8 |
| 30°-40° | 2610.7 | 14.6 |
| 40°-50° | 3959.8 | 22.1 |
| 50°-60° | 4438.2 | 24.8 |
| 60°-70° | 2621.4 | 14.6 |
| 70°-80° | 858.9 | 4.8 |
| 80°-90° | 212.2 | 1.2 |
| 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° | 17899.0 | 100.0 |
| 0°-180° | 17899.0 | 100.0 |

Coefficient of Utilization

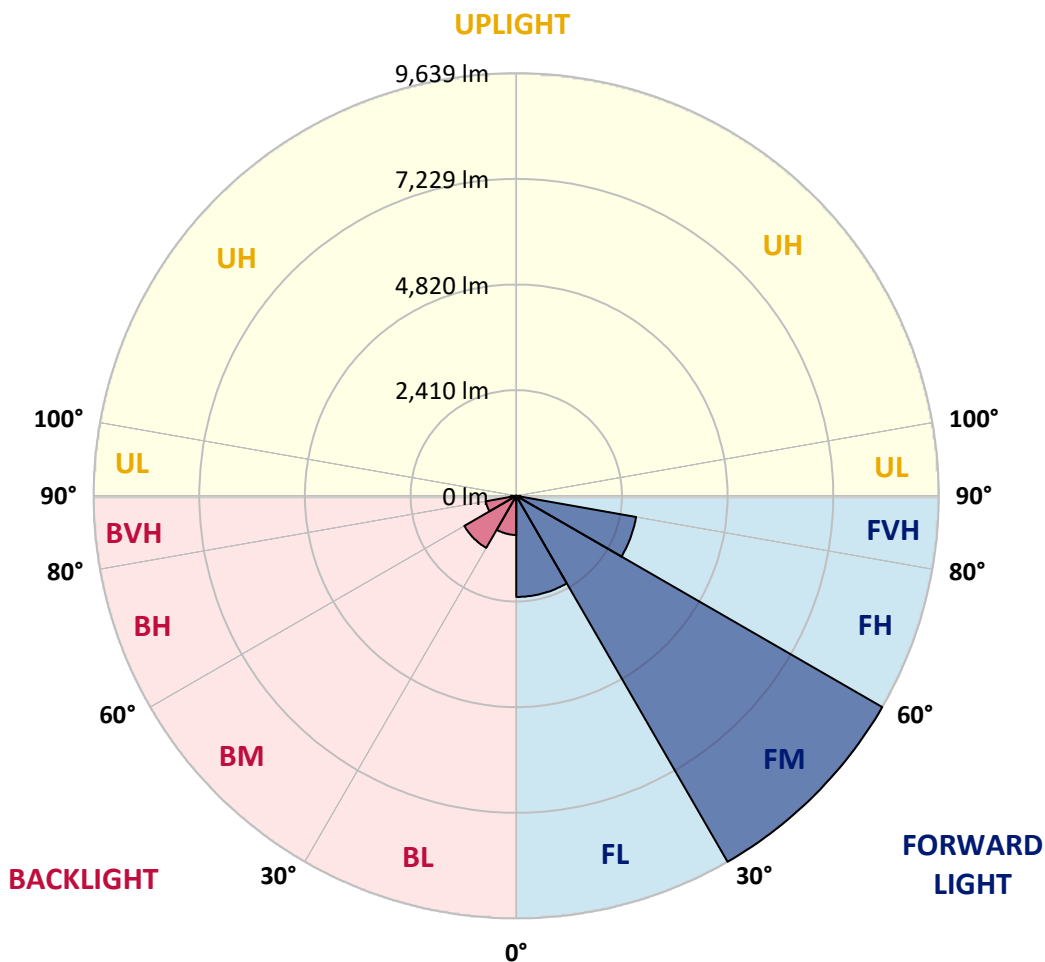


REPORT NUMBER: P320957
 CATALOG NUMBER: GLEON-SA3B-740-U-AFL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2305.7 | 12.9 | | | |
| FM (30°-60°) | 9639.2 | 53.9 | | | |
| FH (60°-80°) | 2775.3 | 15.5 | | | G2/5000 |
| FVH (80°-90°) | 93.4 | 0.5 | | | G1/100 |
| BL (0°-30°) | 892.2 | 5.0 | B2/1000 | | |
| BM (30°-60°) | 1369.5 | 7.7 | B2/2500 | | |
| BH (60°-80°) | 705.0 | 3.9 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 118.8 | 0.7 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2
 Type II Short





REPORT NUMBER: P320957

CATALOG NUMBER: GLEON-SA3B-740-U-AFL

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 56° | 65° | 75° | 85° |
|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 |
| 2.5° | 4558.7 | 4600.5 | 4582.1 | 4518.1 | 4468.9 | 4399.4 | 4321.9 | 4298.5 | 4216.7 | 4125.0 | 4014.9 |
| 5° | 5280.2 | 5259.3 | 5229.2 | 5129.5 | 5024.3 | 4901.9 | 4707.5 | 4676.8 | 4494.7 | 4287.4 | 4068.4 |
| 7.5° | 5691.1 | 5689.3 | 5671.4 | 5613.0 | 5517.1 | 5357.1 | 5122.8 | 5086.5 | 4811.5 | 4478.1 | 4138.6 |
| 10° | 5631.5 | 5627.2 | 5656.7 | 5717.6 | 5746.5 | 5713.3 | 5515.8 | 5479.5 | 5141.8 | 4689.1 | 4219.8 |
| 12.5° | 5292.5 | 5295.0 | 5342.4 | 5470.3 | 5644.4 | 5853.5 | 5821.5 | 5803.7 | 5484.5 | 4927.8 | 4318.2 |
| 15° | 5028.6 | 5034.2 | 5071.7 | 5183.0 | 5388.5 | 5768.0 | 6007.3 | 6013.5 | 5816.0 | 5191.0 | 4433.2 |
| 17.5° | 4913.0 | 4924.7 | 4941.9 | 5020.0 | 5208.3 | 5597.6 | 6051.6 | 6084.8 | 6106.3 | 5464.2 | 4543.9 |
| 20° | 4949.9 | 4961.0 | 4965.9 | 5015.7 | 5170.1 | 5494.3 | 6020.8 | 6080.5 | 6329.0 | 5721.3 | 4654.6 |
| 22.5° | 5115.4 | 5122.1 | 5125.2 | 5138.1 | 5258.1 | 5523.8 | 6000.5 | 6063.3 | 6490.2 | 5951.9 | 4738.3 |
| 25° | 5389.7 | 5384.8 | 5365.1 | 5348.5 | 5429.1 | 5640.7 | 6047.3 | 6107.0 | 6621.2 | 6161.1 | 4793.1 |
| 27.5° | 5718.2 | 5712.0 | 5673.9 | 5628.4 | 5674.5 | 5822.8 | 6182.0 | 6229.4 | 6738.7 | 6356.7 | 4820.7 |
| 30° | 6112.5 | 6096.5 | 6024.5 | 5970.4 | 5988.2 | 6095.9 | 6404.1 | 6447.1 | 6920.2 | 6578.8 | 4847.8 |
| 32.5° | 6568.3 | 6551.1 | 6447.1 | 6357.3 | 6357.3 | 6447.1 | 6632.9 | 6668.6 | 7073.9 | 6829.7 | 4891.5 |
| 35° | 7139.1 | 7117.6 | 6982.3 | 6831.6 | 6789.1 | 6834.6 | 6944.8 | 6970.0 | 7350.7 | 7145.9 | 4970.8 |
| 37.5° | 7812.1 | 7783.2 | 7607.9 | 7406.1 | 7313.2 | 7310.8 | 7390.1 | 7441.8 | 7793.0 | 7561.1 | 5105.5 |
| 40° | 8486.9 | 8466.6 | 8313.4 | 8154.7 | 7972.6 | 7914.2 | 8036.6 | 8052.6 | 8371.2 | 8076.6 | 5277.8 |
| 42.5° | 9008.5 | 9004.8 | 8976.5 | 8997.4 | 8811.0 | 8692.9 | 8788.9 | 8801.8 | 9077.4 | 8634.5 | 5461.1 |
| 45° | 9284.1 | 9290.2 | 9427.4 | 9731.3 | 9800.2 | 9714.0 | 9761.4 | 9765.1 | 9884.4 | 9197.3 | 5629.0 |
| 47.5° | 9063.2 | 9095.2 | 9442.2 | 10121.9 | 10685.9 | 10972.0 | 10893.2 | 10938.8 | 10666.9 | 9680.8 | 5760.6 |
| 50° | 8202.7 | 8242.1 | 8832.6 | 9947.8 | 11099.3 | 12189.3 | 12148.1 | 12137.6 | 11298.0 | 10035.1 | 5832.0 |
| 52.5° | 7136.7 | 7167.4 | 7654.6 | 9042.9 | 10796.1 | 12862.3 | 13240.6 | 13186.4 | 11859.0 | 10300.3 | 5845.5 |
| 55° | 5513.4 | 5561.3 | 6028.2 | 7236.9 | 9569.5 | 12605.1 | 14043.9 | 13995.3 | 12370.2 | 10439.3 | 5829.5 |
| 57° | 3919.6 | 3970.0 | 4433.8 | 5523.2 | 8050.1 | 11715.0 | 14123.9 | 14175.5 | 12646.3 | 10462.7 | 5847.4 |
| 57.5° | 3497.6 | 3549.3 | 4008.8 | 5066.8 | 7576.5 | 11393.3 | 14055.0 | 14141.1 | 12696.2 | 10459.0 | 5857.2 |
| 60° | 1761.1 | 1780.8 | 2073.6 | 2828.3 | 4789.4 | 9210.9 | 13156.3 | 13378.3 | 12741.1 | 10278.1 | 5899.7 |
| 62.5° | 1094.9 | 1080.8 | 1071.5 | 1302.8 | 2330.1 | 6108.2 | 11301.7 | 11729.2 | 11881.7 | 9840.1 | 5796.9 |
| 65° | 962.7 | 936.2 | 834.7 | 816.3 | 1029.1 | 2966.7 | 8510.9 | 9042.9 | 10045.6 | 9150.0 | 5552.1 |
| 67.5° | 904.2 | 878.4 | 764.0 | 695.1 | 695.7 | 1176.1 | 5283.9 | 5883.1 | 7825.6 | 7983.1 | 4974.5 |
| 70° | 844.0 | 820.6 | 713.5 | 632.3 | 592.4 | 651.4 | 2431.0 | 2885.5 | 5101.2 | 6274.9 | 4157.6 |
| 72.5° | 766.4 | 750.5 | 649.0 | 565.3 | 522.9 | 487.8 | 930.7 | 1099.2 | 2953.2 | 4214.2 | 2887.4 |
| 75° | 685.2 | 670.5 | 583.8 | 503.8 | 452.1 | 383.8 | 524.1 | 564.7 | 1500.3 | 2156.0 | 1421.6 |
| 77.5° | 596.1 | 587.4 | 519.2 | 445.4 | 404.1 | 318.0 | 370.9 | 390.6 | 643.4 | 924.5 | 712.9 |
| 80° | 474.3 | 490.9 | 454.0 | 396.8 | 358.6 | 254.7 | 262.7 | 275.6 | 374.6 | 451.5 | 404.8 |
| 82.5° | 308.8 | 337.7 | 355.5 | 322.3 | 295.3 | 200.5 | 188.8 | 194.4 | 244.2 | 275.6 | 175.9 |
| 85° | 128.6 | 144.6 | 233.7 | 211.0 | 196.2 | 146.4 | 126.7 | 129.2 | 151.3 | 156.9 | 72.0 |
| 87.5° | 57.2 | 60.9 | 102.7 | 96.6 | 83.0 | 50.4 | 54.1 | 59.1 | 80.6 | 76.3 | 27.7 |
| 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: P320957
 CATALOG NUMBER: GLEON-SA3B-740-U-AFL

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 | 3970.0 |
| 2.5° | 3973.7 | 3922.0 | 3833.5 | 3735.7 | 3655.7 | 3591.7 | 3527.1 | 3482.8 | 3431.2 | 3403.5 | 3389.3 |
| 5° | 3976.8 | 3875.3 | 3688.9 | 3497.6 | 3326.6 | 3170.4 | 3021.5 | 2907.1 | 2800.0 | 2742.2 | 2726.2 |
| 7.5° | 3989.7 | 3837.1 | 3535.7 | 3220.8 | 2916.9 | 2639.5 | 2425.4 | 2291.3 | 2194.8 | 2151.7 | 2139.4 |
| 10° | 4000.2 | 3792.2 | 3346.3 | 2880.0 | 2466.6 | 2185.5 | 2019.5 | 1944.4 | 1911.2 | 1905.7 | 1900.1 |
| 12.5° | 4024.8 | 3746.1 | 3147.0 | 2524.5 | 2116.6 | 1922.3 | 1864.4 | 1859.5 | 1868.7 | 1882.3 | 1882.3 |
| 15° | 4063.5 | 3700.6 | 2919.4 | 2219.4 | 1894.0 | 1825.7 | 1837.4 | 1864.4 | 1889.7 | 1910.6 | 1913.7 |
| 17.5° | 4091.8 | 3644.6 | 2674.6 | 1975.2 | 1775.2 | 1793.7 | 1835.5 | 1873.7 | 1899.5 | 1919.8 | 1921.6 |
| 20° | 4112.1 | 3557.9 | 2413.1 | 1788.8 | 1707.0 | 1764.2 | 1816.5 | 1850.3 | 1868.1 | 1888.4 | 1891.5 |
| 22.5° | 4101.7 | 3441.6 | 2181.2 | 1655.3 | 1651.6 | 1721.1 | 1770.9 | 1811.5 | 1798.0 | 1778.3 | 1791.2 |
| 25° | 4051.2 | 3281.7 | 1942.6 | 1555.7 | 1593.2 | 1663.3 | 1724.8 | 1697.7 | 1652.2 | 1643.6 | 1648.5 |
| 27.5° | 3961.4 | 3077.5 | 1721.7 | 1463.4 | 1525.5 | 1609.8 | 1606.1 | 1579.0 | 1563.0 | 1552.0 | 1558.7 |
| 30° | 3864.8 | 2856.0 | 1528.6 | 1382.8 | 1450.5 | 1520.0 | 1505.8 | 1505.2 | 1489.2 | 1471.4 | 1480.0 |
| 32.5° | 3769.5 | 2633.3 | 1375.4 | 1316.4 | 1393.9 | 1403.1 | 1433.9 | 1443.1 | 1411.7 | 1374.2 | 1371.7 |
| 35° | 3686.4 | 2423.0 | 1259.2 | 1256.1 | 1325.6 | 1326.8 | 1371.7 | 1358.8 | 1280.7 | 1241.9 | 1241.9 |
| 37.5° | 3624.3 | 2213.2 | 1170.6 | 1202.0 | 1235.8 | 1267.8 | 1290.5 | 1237.0 | 1224.1 | 1202.6 | 1202.0 |
| 40° | 3597.2 | 2028.7 | 1115.2 | 1160.7 | 1172.4 | 1213.0 | 1154.6 | 1175.5 | 1181.7 | 1170.6 | 1170.6 |
| 42.5° | 3569.0 | 1868.1 | 1067.2 | 1129.4 | 1127.5 | 1122.0 | 1092.5 | 1119.5 | 1144.1 | 1144.7 | 1142.9 |
| 45° | 3540.7 | 1729.7 | 1024.8 | 1062.3 | 1088.2 | 1028.5 | 1034.0 | 1062.9 | 1097.4 | 1109.7 | 1109.7 |
| 47.5° | 3509.3 | 1620.2 | 986.0 | 991.6 | 1031.6 | 991.6 | 987.3 | 1009.4 | 1050.0 | 1069.7 | 1074.0 |
| 50° | 3440.4 | 1521.8 | 941.8 | 929.5 | 940.5 | 954.1 | 957.7 | 968.2 | 1013.1 | 1044.5 | 1051.9 |
| 52.5° | 3345.0 | 1433.9 | 885.2 | 872.2 | 872.2 | 923.3 | 940.5 | 943.6 | 981.7 | 1019.3 | 1026.6 |
| 55° | 3265.7 | 1377.9 | 826.7 | 824.3 | 821.8 | 890.7 | 920.2 | 925.1 | 951.6 | 981.1 | 984.8 |
| 57° | 3271.2 | 1373.6 | 781.8 | 784.3 | 783.7 | 857.5 | 901.2 | 911.6 | 925.1 | 950.4 | 954.7 |
| 57.5° | 3274.3 | 1376.6 | 772.0 | 773.2 | 772.6 | 848.3 | 895.6 | 907.3 | 917.8 | 944.2 | 948.5 |
| 60° | 3320.4 | 1384.6 | 732.0 | 718.5 | 721.5 | 799.0 | 864.3 | 879.0 | 885.8 | 920.8 | 926.4 |
| 62.5° | 3252.2 | 1349.0 | 700.0 | 667.4 | 667.4 | 747.4 | 820.6 | 844.0 | 854.4 | 901.8 | 911.0 |
| 65° | 3054.1 | 1248.7 | 662.5 | 609.6 | 615.7 | 695.7 | 768.3 | 806.4 | 822.4 | 881.5 | 891.3 |
| 67.5° | 2748.4 | 1132.4 | 622.5 | 557.9 | 564.1 | 641.6 | 714.2 | 755.4 | 780.6 | 859.3 | 867.3 |
| 70° | 2350.4 | 990.4 | 568.4 | 503.2 | 510.6 | 582.5 | 650.2 | 696.9 | 734.5 | 838.4 | 840.9 |
| 72.5° | 1732.8 | 812.0 | 492.7 | 442.9 | 450.9 | 513.6 | 585.6 | 639.7 | 690.2 | 786.1 | 784.9 |
| 75° | 1030.3 | 634.8 | 409.1 | 382.0 | 387.5 | 446.0 | 527.2 | 593.0 | 668.6 | 765.8 | 777.5 |
| 77.5° | 625.0 | 478.0 | 333.4 | 319.9 | 326.6 | 386.3 | 485.3 | 555.5 | 659.4 | 722.2 | 718.5 |
| 80° | 377.7 | 341.4 | 266.3 | 257.7 | 264.5 | 330.3 | 449.0 | 527.2 | 576.4 | 617.0 | 617.0 |
| 82.5° | 197.5 | 208.5 | 195.6 | 188.8 | 198.1 | 268.2 | 408.4 | 460.1 | 509.3 | 437.4 | 408.4 |
| 85° | 80.6 | 108.9 | 118.7 | 118.1 | 123.6 | 185.8 | 352.5 | 393.7 | 328.5 | 311.9 | 319.2 |
| 87.5° | 27.1 | 46.1 | 57.8 | 49.8 | 52.3 | 116.9 | 244.2 | 190.1 | 225.8 | 157.5 | 149.5 |
| 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

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINIAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

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

Test Date: 03/05/2021

Test Information

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

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

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



Test Conditions

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

REPORT NUMBER: SP1-2101-121-2

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

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 2.7 | 620 | 97577 | 25.4 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 4.8 | 625 | 90158 | 19.9 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 8.0 | 630 | 82240 | 14.9 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 13.3 | 635 | 74361 | 11.2 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 20.2 | 640 | 66994 | 8.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 28.5 | 645 | 60405 | 5.8 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 37.4 | 650 | 53806 | 3.9 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 44.9 | 655 | 47610 | 2.7 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 52.6 | 660 | 42018 | 1.8 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 58.4 | 665 | 36742 | 1.2 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.0 | 540 | 96845 | 63.1 | 670 | 32105 | 0.7 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.0 | 545 | 100829 | 67.1 | 675 | 27946 | 0.5 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 0.1 | 550 | 105648 | 71.8 | 680 | 24146 | 0.3 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 0.2 | 555 | 110017 | 75.1 | 685 | 21191 | 0.2 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 0.5 | 560 | 114586 | 77.9 | 690 | 18544 | 0.1 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 1.2 | 565 | 118987 | 79.1 | 695 | 16058 | 0.1 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 2.1 | 570 | 122326 | 79.5 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 2.9 | 575 | 125968 | 78.4 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 2.7 | 580 | 127613 | 75.8 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 2.0 | 585 | 129466 | 71.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 1.5 | 590 | 128813 | 66.6 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 1.3 | 595 | 126387 | 59.9 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 1.0 | 600 | 123477 | 53.2 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 1.1 | 605 | 118718 | 46.0 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 1.2 | 610 | 112091 | 38.5 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 1.7 | 615 | 105039 | 31.7 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 29.3 | 620 | 97577 | 1.2 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 43.0 | 625 | 90158 | 0.8 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 60.8 | 630 | 82240 | 0.5 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 81.1 | 635 | 74361 | 0.3 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 99.6 | 640 | 66994 | 0.2 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 113.9 | 645 | 60405 | 0.1 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 122.6 | 650 | 53806 | 0.1 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 125.0 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 123.1 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.1 | 535 | 94097 | 117.3 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 107.0 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.9 | 545 | 100829 | 96.7 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 3.0 | 550 | 105648 | 86.4 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 9.3 | 555 | 110017 | 75.2 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 23.0 | 560 | 114586 | 64.0 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 45.7 | 565 | 118987 | 53.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 75.5 | 570 | 122326 | 43.2 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 93.8 | 575 | 125968 | 34.3 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 79.3 | 580 | 127613 | 26.3 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 51.3 | 585 | 129466 | 19.8 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 35.6 | 590 | 128813 | 14.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 26.0 | 595 | 126387 | 10.1 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 19.3 | 600 | 123477 | 7.0 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 16.8 | 605 | 118718 | 4.7 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 17.7 | 610 | 112091 | 3.0 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 21.4 | 615 | 105039 | 1.9 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

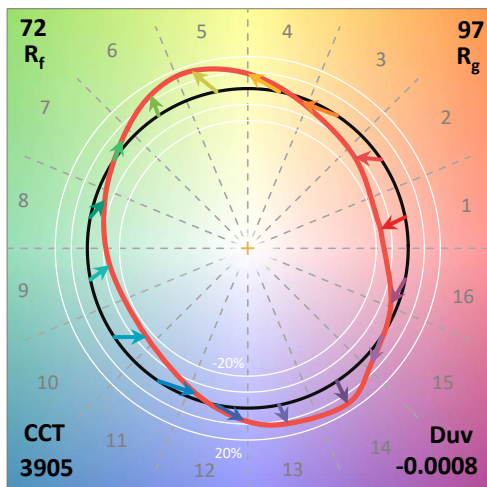
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 15.8 | 620 | 97577 | 0.1 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 22.0 | 625 | 90158 | 0.0 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 29.2 | 630 | 82240 | 0.0 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 36.6 | 635 | 74361 | 0.0 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 42.2 | 640 | 66994 | 0.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 44.9 | 645 | 60405 | 0.0 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 44.9 | 650 | 53806 | 0.0 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 42.4 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 38.6 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 33.9 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 28.3 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.6 | 545 | 100829 | 23.4 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 2.1 | 550 | 105648 | 19.0 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 5.9 | 555 | 110017 | 14.8 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 14.3 | 560 | 114586 | 11.3 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 27.3 | 565 | 118987 | 8.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 45.1 | 570 | 122326 | 6.0 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 55.3 | 575 | 125968 | 4.2 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 47.2 | 580 | 127613 | 2.9 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 30.8 | 585 | 129466 | 1.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 21.7 | 590 | 128813 | 1.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 16.1 | 595 | 126387 | 0.8 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 12.0 | 600 | 123477 | 0.5 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 10.3 | 605 | 118718 | 0.3 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 10.5 | 610 | 112091 | 0.2 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 12.1 | 615 | 105039 | 0.1 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)