

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: P321477

Luminaire Tested: **GLEON-SA3B-722-U-T2R-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P321477
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-9)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA3B-722-U-T2R-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(3) 70 CRI, 2200K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10352 lumens
Efficiency: N/A
Efficacy: 83.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B1 - 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

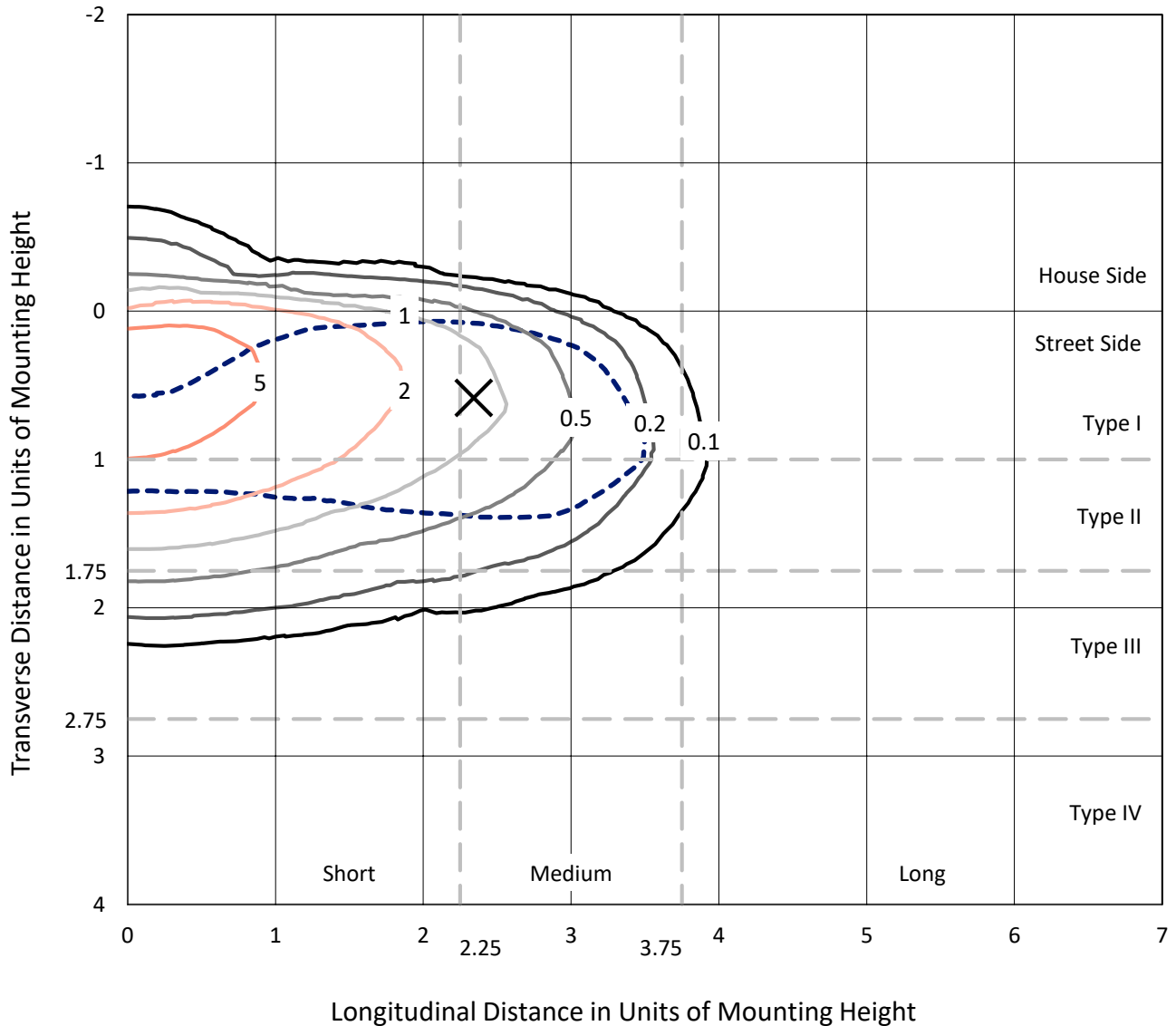




REPORT NUMBER: P321477
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Iso-Footcandle Lines of Horizontal Illumination

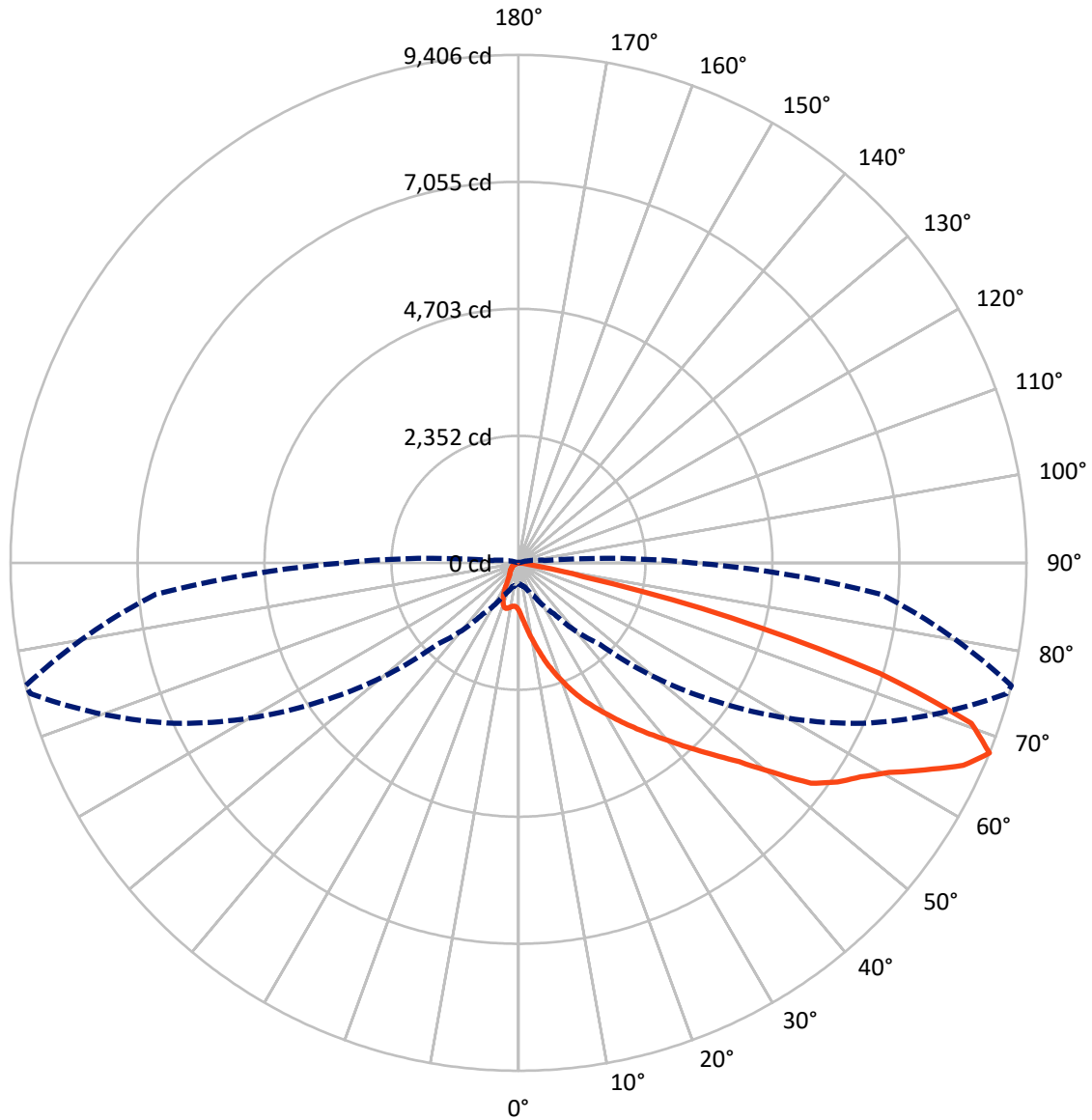
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.7 fc
 Type II - Medium - N/A

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CATALOG NUMBER: GLEON-SA3B-722-U-T2R-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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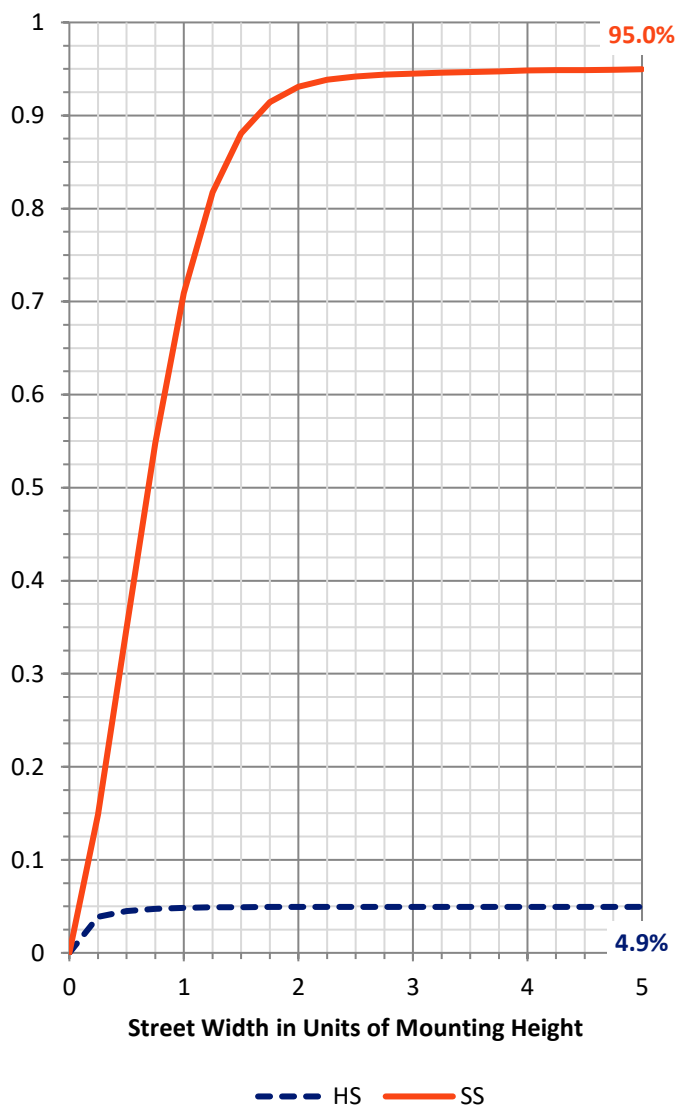
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 514.1 | 0.0 | 514.1 |
| | % Fixture | 5.0 | 0.0 | 5.0 |
| Street Side | Lumens | 9837.9 | 0.0 | 9837.9 |
| | % Fixture | 95.0 | 0.0 | 95.0 |
| Total | Lumens | 10352.0 | 0.0 | 10352.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 109.2 | 1.1 |
| 10°-20° | 432.9 | 4.2 |
| 20°-30° | 880.7 | 8.5 |
| 30°-40° | 1528.7 | 14.8 |
| 40°-50° | 2159.8 | 20.9 |
| 50°-60° | 2449.4 | 23.7 |
| 60°-70° | 2031.5 | 19.6 |
| 70°-80° | 735.9 | 7.1 |
| 80°-90° | 23.9 | 0.2 |
| 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° | 10352.0 | 100.0 |
| 0°-180° | 10352.0 | 100.0 |

Coefficient of Utilization

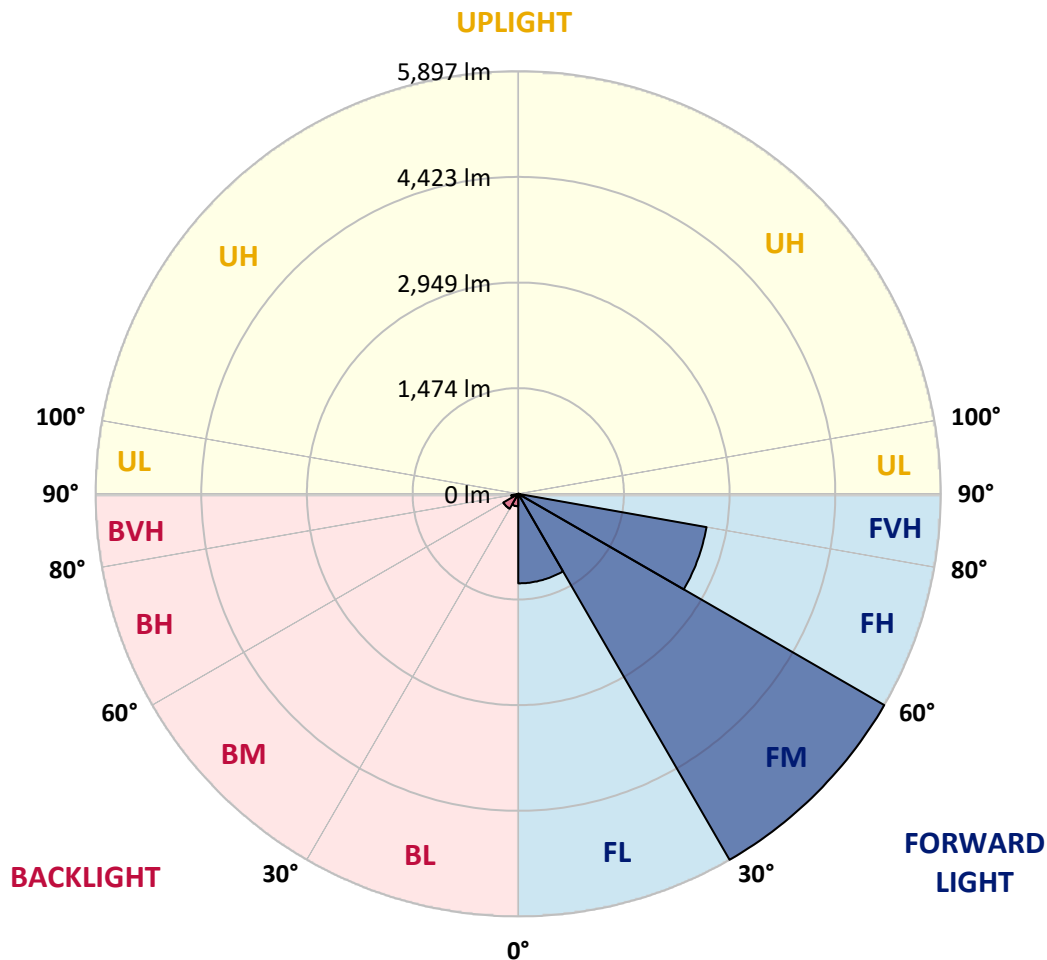


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1249.5 | 12.1 | | | |
| FM (30°-60°) | 5897.3 | 57.0 | | | |
| FH (60°-80°) | 2668.1 | 25.8 | | | G2/5000 |
| FVH (80°-90°) | 23.1 | 0.2 | | | G1/100 |
| BL (0°-30°) | 173.4 | 1.7 | B1/500 | | |
| BM (30°-60°) | 240.6 | 2.3 | B1/1000 | | |
| BH (60°-80°) | 99.3 | 1.0 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.8 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type II Medium





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CATALOG NUMBER: GLEON-SA3B-722-U-T2R-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 |
| 2.5° | 1310.9 | 1281.4 | 1288.2 | 1269.1 | 1234.7 | 1163.9 | 1103.6 | 1046.4 | 979.8 | 977.5 | 922.6 |
| 5° | 1767.6 | 1742.7 | 1739.5 | 1701.0 | 1638.4 | 1518.2 | 1401.1 | 1267.8 | 1119.0 | 1108.1 | 991.5 |
| 7.5° | 2182.2 | 2162.3 | 2155.0 | 2109.2 | 1992.6 | 1875.6 | 1723.2 | 1527.2 | 1294.5 | 1274.6 | 1084.5 |
| 10° | 2500.6 | 2491.1 | 2492.9 | 2460.3 | 2360.5 | 2251.6 | 2051.6 | 1801.7 | 1493.7 | 1462.8 | 1196.1 |
| 12.5° | 2741.9 | 2744.2 | 2760.5 | 2740.6 | 2684.8 | 2604.1 | 2390.4 | 2094.2 | 1714.1 | 1671.9 | 1323.6 |
| 15° | 2919.3 | 2930.6 | 2960.6 | 2985.5 | 2981.4 | 2911.6 | 2715.6 | 2391.3 | 1948.2 | 1901.4 | 1465.5 |
| 17.5° | 3034.1 | 3046.8 | 3090.3 | 3145.6 | 3196.4 | 3180.1 | 3029.5 | 2678.0 | 2184.9 | 2131.0 | 1617.5 |
| 20° | 3134.8 | 3149.7 | 3196.4 | 3269.5 | 3364.3 | 3384.7 | 3285.8 | 2956.0 | 2421.3 | 2355.5 | 1774.4 |
| 22.5° | 3352.9 | 3352.5 | 3381.1 | 3423.7 | 3514.0 | 3566.6 | 3504.0 | 3214.1 | 2654.9 | 2586.4 | 1934.6 |
| 25° | 3747.6 | 3732.6 | 3722.6 | 3689.0 | 3709.0 | 3741.7 | 3706.7 | 3455.4 | 2889.8 | 2820.4 | 2096.9 |
| 27.5° | 4216.6 | 4225.6 | 4144.9 | 4054.6 | 3984.8 | 3951.2 | 3894.1 | 3679.1 | 3115.7 | 3039.5 | 2255.7 |
| 30° | 4711.4 | 4714.2 | 4618.9 | 4503.7 | 4349.9 | 4222.5 | 4123.6 | 3892.7 | 3347.9 | 3264.9 | 2409.9 |
| 32.5° | 5157.8 | 5140.1 | 5045.7 | 4888.8 | 4694.7 | 4551.3 | 4345.8 | 4131.3 | 3593.8 | 3513.5 | 2581.4 |
| 35° | 5511.6 | 5490.7 | 5375.9 | 5233.1 | 5031.7 | 4887.4 | 4640.2 | 4369.4 | 3852.3 | 3773.9 | 2753.3 |
| 37.5° | 5770.1 | 5745.6 | 5627.7 | 5480.7 | 5307.0 | 5223.1 | 4981.8 | 4628.4 | 4134.5 | 4050.1 | 2934.3 |
| 40° | 5859.9 | 5838.6 | 5764.7 | 5657.2 | 5517.5 | 5498.4 | 5344.2 | 4926.4 | 4441.5 | 4351.7 | 3139.3 |
| 42.5° | 5806.4 | 5785.5 | 5759.2 | 5722.9 | 5664.9 | 5683.0 | 5686.2 | 5266.2 | 4782.6 | 4694.2 | 3365.6 |
| 45° | 5594.1 | 5575.5 | 5602.7 | 5655.8 | 5727.9 | 5817.7 | 5998.3 | 5631.3 | 5163.7 | 5069.3 | 3627.4 |
| 47.5° | 5281.6 | 5268.0 | 5343.3 | 5475.7 | 5686.7 | 5934.3 | 6283.6 | 6015.1 | 5591.4 | 5503.9 | 3953.9 |
| 50° | 4837.1 | 4834.8 | 4985.4 | 5227.2 | 5551.5 | 5990.6 | 6578.4 | 6451.4 | 6185.6 | 6093.5 | 4408.0 |
| 52.5° | 4144.9 | 4149.4 | 4445.6 | 4832.5 | 5314.3 | 5952.5 | 6768.0 | 7012.0 | 6876.9 | 6781.2 | 4801.2 |
| 55° | 3485.8 | 3513.1 | 3723.1 | 4281.0 | 4950.5 | 5810.9 | 6833.3 | 7273.8 | 7258.3 | 7167.6 | 5019.9 |
| 57.5° | 2840.4 | 2889.8 | 3092.1 | 3613.3 | 4419.3 | 5484.8 | 6797.5 | 7387.2 | 7542.3 | 7472.9 | 5308.4 |
| 60° | 2140.9 | 2163.6 | 2396.8 | 2883.9 | 3737.6 | 4889.7 | 6537.6 | 7448.8 | 7930.6 | 7882.5 | 5727.0 |
| 62.5° | 1362.1 | 1418.8 | 1625.7 | 2095.6 | 2910.2 | 4063.3 | 6099.4 | 7447.9 | 8416.4 | 8442.7 | 6267.2 |
| 65° | 717.6 | 783.8 | 893.6 | 1298.6 | 1999.9 | 3140.2 | 5440.4 | 7378.1 | 9012.4 | 9049.1 | 6689.5 |
| 67.5° | 386.9 | 406.0 | 464.0 | 674.0 | 1159.8 | 2127.3 | 4471.9 | 7033.4 | 9357.6 | 9406.1 | 6748.5 |
| 70° | 283.0 | 293.5 | 315.2 | 372.9 | 583.8 | 1235.6 | 3263.1 | 6251.8 | 8912.6 | 8894.4 | 5996.0 |
| 72.5° | 217.3 | 233.6 | 249.9 | 273.1 | 335.7 | 659.5 | 2031.6 | 4895.6 | 7111.4 | 6991.6 | 4481.9 |
| 75° | 171.5 | 174.2 | 197.3 | 218.2 | 251.7 | 375.6 | 902.2 | 2851.3 | 4340.4 | 4056.9 | 2324.2 |
| 77.5° | 137.0 | 138.8 | 152.4 | 170.5 | 202.3 | 246.8 | 279.4 | 1121.7 | 1385.7 | 1236.5 | 504.4 |
| 80° | 81.2 | 85.7 | 113.4 | 131.5 | 167.8 | 155.6 | 102.1 | 243.6 | 216.4 | 196.0 | 84.8 |
| 82.5° | 45.4 | 49.0 | 64.0 | 103.9 | 117.0 | 74.4 | 50.8 | 65.8 | 50.8 | 49.4 | 24.0 |
| 85° | 0.0 | 2.3 | 41.3 | 64.4 | 47.6 | 16.3 | 21.3 | 21.8 | 15.0 | 14.1 | 9.5 |
| 87.5° | 0.0 | 0.0 | 12.7 | 12.2 | 1.8 | 2.7 | 5.0 | 7.3 | 5.9 | 5.9 | 5.0 |
| 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: P321477

CATALOG NUMBER: GLEON-SA3B-722-U-T2R-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 | 878.1 |
| 2.5° | 895.4 | 870.9 | 824.6 | 779.3 | 741.2 | 709.9 | 681.7 | 670.4 | 661.3 | 660.0 | 652.7 |
| 5° | 935.3 | 885.9 | 797.4 | 724.8 | 676.3 | 641.8 | 612.3 | 594.2 | 580.1 | 574.7 | 569.7 |
| 7.5° | 995.6 | 920.8 | 793.8 | 710.3 | 652.3 | 594.2 | 539.8 | 480.8 | 444.1 | 430.0 | 421.8 |
| 10° | 1069.1 | 967.1 | 807.4 | 706.2 | 604.6 | 482.2 | 391.9 | 317.1 | 286.7 | 276.7 | 274.0 |
| 12.5° | 1154.8 | 1024.7 | 831.0 | 680.8 | 503.0 | 342.5 | 270.3 | 244.9 | 238.1 | 235.0 | 235.0 |
| 15° | 1253.3 | 1087.7 | 847.8 | 607.4 | 371.9 | 259.0 | 234.1 | 222.3 | 215.0 | 210.9 | 211.4 |
| 17.5° | 1354.0 | 1149.4 | 839.6 | 500.8 | 274.4 | 230.4 | 211.8 | 199.1 | 189.1 | 185.1 | 184.2 |
| 20° | 1455.6 | 1206.5 | 794.2 | 372.9 | 232.2 | 209.1 | 188.2 | 174.2 | 164.2 | 160.1 | 159.2 |
| 22.5° | 1560.8 | 1255.1 | 714.4 | 273.5 | 208.7 | 185.5 | 165.1 | 151.0 | 141.5 | 137.9 | 136.1 |
| 25° | 1663.3 | 1294.5 | 602.8 | 221.4 | 186.4 | 163.3 | 143.8 | 130.6 | 122.0 | 118.4 | 117.9 |
| 27.5° | 1759.0 | 1319.5 | 473.5 | 195.5 | 166.9 | 143.3 | 125.6 | 113.9 | 106.6 | 103.9 | 103.4 |
| 30° | 1845.2 | 1321.8 | 350.2 | 176.4 | 149.7 | 126.1 | 109.8 | 99.3 | 93.0 | 90.3 | 89.4 |
| 32.5° | 1932.3 | 1302.7 | 254.9 | 159.2 | 133.8 | 111.1 | 95.3 | 87.1 | 82.6 | 80.3 | 80.3 |
| 35° | 2014.4 | 1258.7 | 198.7 | 144.2 | 118.4 | 96.6 | 83.9 | 78.0 | 75.3 | 73.0 | 73.0 |
| 37.5° | 2094.7 | 1195.7 | 168.7 | 131.1 | 103.9 | 84.4 | 73.9 | 70.3 | 68.0 | 65.8 | 65.8 |
| 40° | 2176.3 | 1116.3 | 153.3 | 118.8 | 92.1 | 74.8 | 65.8 | 62.6 | 60.3 | 58.5 | 58.1 |
| 42.5° | 2276.6 | 1024.7 | 143.3 | 107.5 | 81.6 | 66.2 | 58.1 | 54.4 | 52.6 | 50.8 | 49.9 |
| 45° | 2392.7 | 945.7 | 135.2 | 96.2 | 73.0 | 59.0 | 50.3 | 46.7 | 44.0 | 41.7 | 41.3 |
| 47.5° | 2560.1 | 888.6 | 124.3 | 83.9 | 64.9 | 51.3 | 43.5 | 39.5 | 35.4 | 33.1 | 32.7 |
| 50° | 2773.7 | 841.4 | 110.2 | 73.0 | 56.7 | 43.5 | 36.3 | 31.3 | 27.7 | 25.4 | 25.4 |
| 52.5° | 2879.8 | 779.7 | 97.5 | 63.5 | 47.6 | 36.7 | 29.5 | 23.6 | 21.8 | 19.5 | 19.5 |
| 55° | 2922.5 | 732.5 | 84.8 | 54.0 | 39.5 | 30.4 | 23.1 | 18.1 | 16.8 | 15.4 | 15.0 |
| 57.5° | 3042.2 | 718.9 | 73.9 | 45.8 | 32.7 | 24.0 | 17.7 | 13.6 | 12.7 | 10.9 | 10.9 |
| 60° | 3235.0 | 725.7 | 64.0 | 39.0 | 26.3 | 18.6 | 13.2 | 10.4 | 9.5 | 7.7 | 7.7 |
| 62.5° | 3443.2 | 717.1 | 54.0 | 33.6 | 20.4 | 13.6 | 9.1 | 7.7 | 7.7 | 4.5 | 4.1 |
| 65° | 3483.1 | 638.7 | 46.3 | 27.7 | 15.9 | 10.0 | 5.9 | 5.0 | 6.8 | 0.9 | 0.0 |
| 67.5° | 3232.7 | 495.3 | 39.9 | 21.3 | 11.8 | 7.7 | 4.5 | 2.3 | 5.9 | 0.0 | 0.0 |
| 70° | 2585.0 | 314.8 | 32.2 | 15.4 | 9.1 | 6.4 | 3.6 | 0.9 | 4.5 | 0.0 | 0.0 |
| 72.5° | 1828.0 | 182.8 | 25.4 | 10.9 | 7.7 | 5.0 | 2.7 | 0.0 | 2.7 | 0.0 | 0.0 |
| 75° | 924.4 | 97.5 | 15.9 | 8.2 | 5.9 | 3.6 | 1.8 | 0.0 | 0.5 | 0.0 | 0.0 |
| 77.5° | 200.0 | 45.4 | 10.0 | 5.9 | 4.1 | 2.3 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 43.5 | 20.0 | 6.4 | 3.6 | 2.3 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 15.9 | 10.4 | 3.2 | 1.8 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 8.6 | 5.4 | 1.8 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 4.5 | 1.8 | 0.5 | 0.5 | 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 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

Test Information

Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-722-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 2237
 CIE u': 0.2876
 CIE v': 0.5346
 Duv: -0.0006
 CIE x: 0.5005
 CIE y: 0.4134
 CIE z: 0.0860
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 587
 Purity: 74.5
 Rf: 69.8
 Rg: 99.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.9 | R9: | -17.4 |
| R2: | 83.0 | R10: | 61.3 |
| R3: | 95.2 | R11: | 59.8 |
| R4: | 66.2 | R12: | 50.5 |
| R5: | 65.9 | R13: | 71.1 |
| R6: | 76.3 | R14: | 96.9 |
| R7: | 76.7 | | |
| R8: | 43.8 | | |



Test Conditions

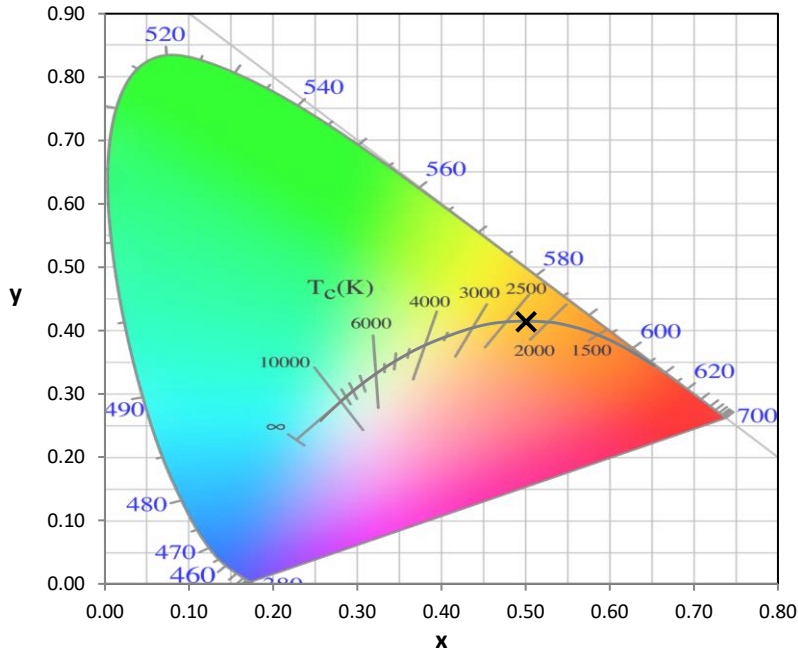
Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/41%
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2200K 4-step quadrangle

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Photopic Flux vs. Wavelength



#####

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1470.8 M/P: 0.27

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

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Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_g = -17.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)