

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: P317980

Luminaire Tested: **GLEON-SA6D-722-U-T3R**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P317980
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-10)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA6D-722-U-T3R
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(6) 70 CRI, 2200K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 34879 lumens
Efficiency: N/A
Efficacy: 91.3 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type IV - Medium
BUG Rating: B3 - U0 - G5

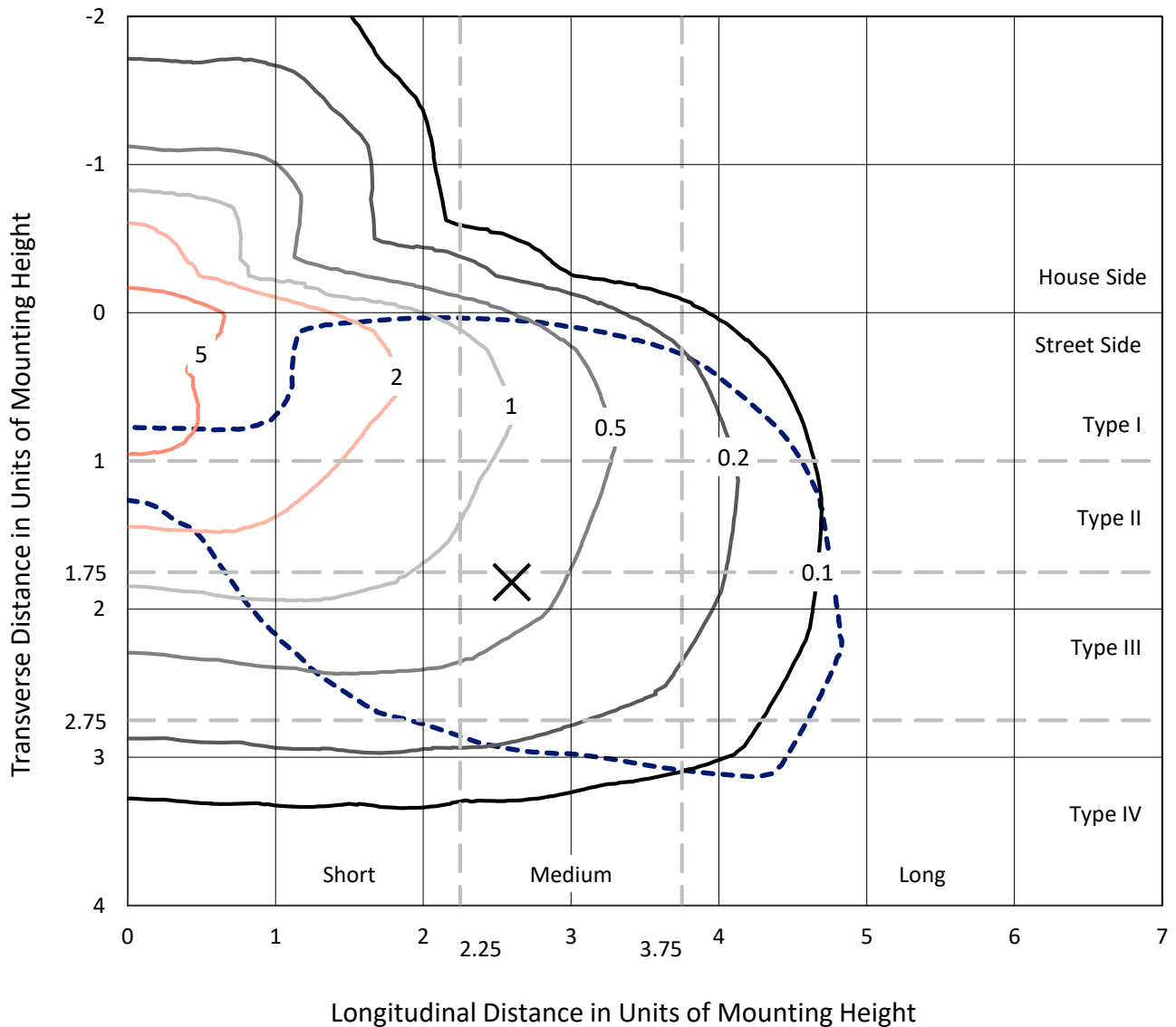
Input Watts (W): 382
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P317980
 CATALOG NUMBER: GLEON-SA6D-722-U-T3R

Iso-Footcandle Lines of Horizontal Illumination

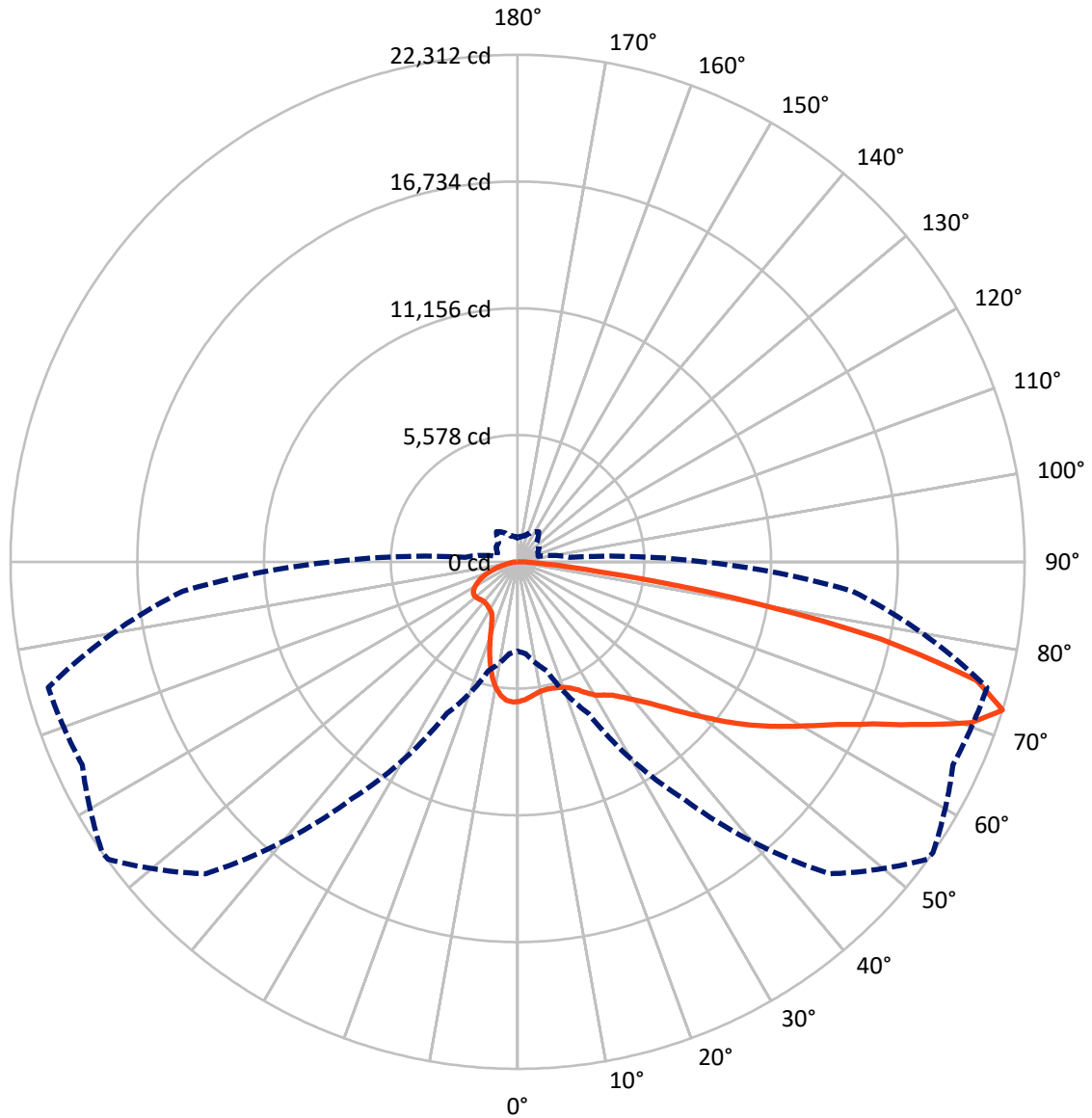
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.9 fc
 Type IV - Medium - N/A

REPORT NUMBER: P317980
CATALOG NUMBER: GLEON-SA6D-722-U-T3R

Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

REPORT NUMBER: P317980
 CATALOG NUMBER: GLEON-SA6D-722-U-T3R

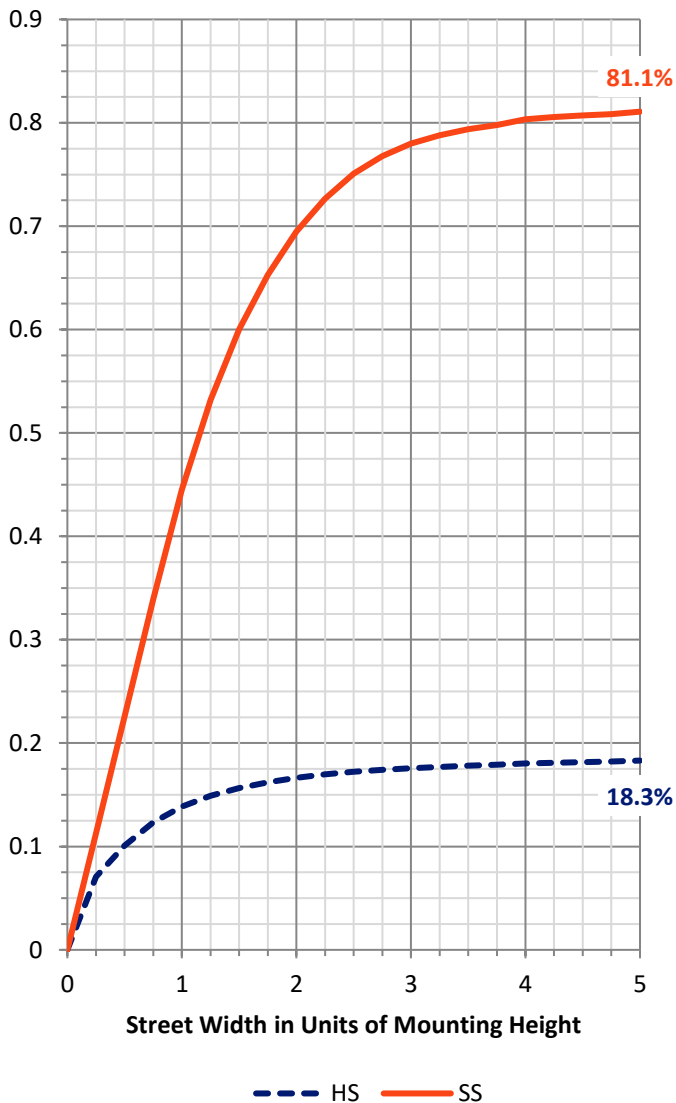
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6482.9 | 0.0 | 6482.9 |
| | % Fixture | 18.6 | 0.0 | 18.6 |
| Street Side | Lumens | 28396.1 | 0.0 | 28396.1 |
| | % Fixture | 81.4 | 0.0 | 81.4 |
| Total | Lumens | 34879.0 | 0.0 | 34879.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 556.7 | 1.6 |
| 10°-20° | 1482.1 | 4.2 |
| 20°-30° | 2443.6 | 7.0 |
| 30°-40° | 3614.7 | 10.4 |
| 40°-50° | 5045.3 | 14.5 |
| 50°-60° | 6569.1 | 18.8 |
| 60°-70° | 8073.3 | 23.1 |
| 70°-80° | 6328.5 | 18.1 |
| 80°-90° | 765.8 | 2.2 |
| 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° | 34879.0 | 100.0 |
| 0°-180° | 34879.0 | 100.0 |

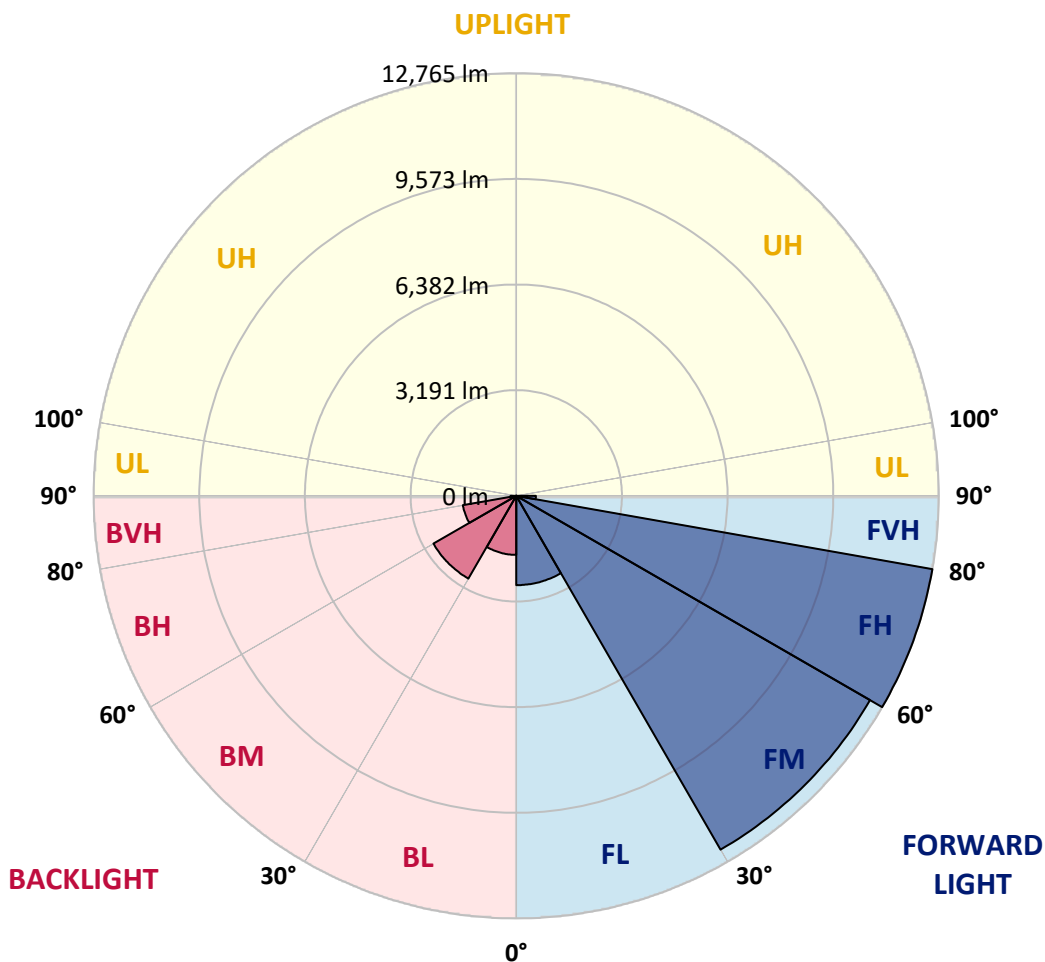


REPORT NUMBER: P317980
 CATALOG NUMBER: GLEON-SA6D-722-U-T3R

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2698.6 | 7.7 | | | |
| FM (30°-60°) | 12340.9 | 35.4 | | | |
| FH (60°-80°) | 12764.5 | 36.6 | | | G5 |
| FVH (80°-90°) | 592.1 | 1.7 | | | G4/750 |
| BL (0°-30°) | 1783.7 | 5.1 | B3/2500 | | |
| BM (30°-60°) | 2888.2 | 8.3 | B3/5000 | | |
| BH (60°-80°) | 1637.2 | 4.7 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 173.7 | 0.5 | | | G2/225 |
| 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 Medium





REPORT NUMBER: P317980
 CATALOG NUMBER: GLEON-SA6D-722-U-T3R

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 54° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 |
| 2.5° | 5951.6 | 5937.5 | 5955.2 | 5979.9 | 6007.0 | 6043.5 | 6064.7 | 6074.2 | 6110.7 | 6124.8 | 6155.4 |
| 5° | 5676.0 | 5668.9 | 5698.3 | 5740.8 | 5800.8 | 5885.7 | 5954.0 | 5966.9 | 6063.5 | 6131.9 | 6194.3 |
| 7.5° | 5475.7 | 5475.7 | 5509.9 | 5560.5 | 5627.7 | 5741.9 | 5838.5 | 5856.2 | 6020.0 | 6167.2 | 6282.7 |
| 10° | 5316.7 | 5322.5 | 5362.6 | 5422.7 | 5501.6 | 5622.9 | 5751.4 | 5771.4 | 6008.2 | 6249.7 | 6433.5 |
| 12.5° | 5210.6 | 5224.8 | 5261.3 | 5315.5 | 5413.3 | 5560.5 | 5723.1 | 5750.2 | 6032.9 | 6367.5 | 6614.9 |
| 15° | 5277.8 | 5301.3 | 5304.9 | 5327.3 | 5381.4 | 5541.7 | 5739.6 | 5767.9 | 6085.9 | 6487.7 | 6821.1 |
| 17.5° | 5572.3 | 5580.5 | 5544.0 | 5496.9 | 5471.0 | 5573.5 | 5789.1 | 5818.5 | 6149.5 | 6606.6 | 7019.0 |
| 20° | 6020.0 | 6015.2 | 5936.3 | 5809.1 | 5677.1 | 5693.6 | 5870.3 | 5901.0 | 6235.5 | 6711.5 | 7216.9 |
| 22.5° | 6585.4 | 6568.9 | 6447.6 | 6213.2 | 5988.2 | 5893.9 | 6012.9 | 6038.8 | 6365.1 | 6861.1 | 7428.9 |
| 25° | 7271.1 | 7234.6 | 7074.3 | 6759.8 | 6428.8 | 6186.1 | 6227.3 | 6252.0 | 6553.6 | 7028.4 | 7623.3 |
| 27.5° | 7994.4 | 7957.9 | 7754.1 | 7373.6 | 6933.0 | 6554.8 | 6523.0 | 6544.2 | 6768.0 | 7152.1 | 7767.0 |
| 30° | 8750.7 | 8711.9 | 8525.7 | 8099.3 | 7467.8 | 6936.5 | 6798.7 | 6806.9 | 6918.8 | 7219.2 | 7884.9 |
| 32.5° | 9510.6 | 9474.1 | 9265.6 | 8770.8 | 8048.6 | 7346.5 | 6997.8 | 6987.2 | 7009.5 | 7288.7 | 8018.0 |
| 35° | 10281.1 | 10295.2 | 10051.3 | 9503.5 | 8691.8 | 7802.4 | 7233.4 | 7211.0 | 7161.5 | 7431.3 | 8206.5 |
| 37.5° | 11105.7 | 11096.3 | 10780.6 | 10208.0 | 9364.5 | 8297.2 | 7571.5 | 7568.0 | 7397.1 | 7701.1 | 8502.2 |
| 40° | 11657.0 | 11662.9 | 11470.9 | 10929.0 | 10044.3 | 8845.0 | 8005.0 | 7996.8 | 7772.9 | 8105.2 | 8889.8 |
| 42.5° | 11872.6 | 11911.5 | 11961.0 | 11617.0 | 10755.8 | 9480.0 | 8522.2 | 8510.4 | 8297.2 | 8684.8 | 9345.7 |
| 45° | 11887.9 | 11965.7 | 12272.0 | 12228.4 | 11476.8 | 10206.8 | 9183.1 | 9150.1 | 8997.0 | 9455.2 | 9889.9 |
| 47.5° | 11756.0 | 11836.1 | 12345.0 | 12592.4 | 12121.2 | 10973.8 | 9955.9 | 9930.0 | 9798.0 | 10418.9 | 10479.0 |
| 50° | 11467.4 | 11544.0 | 12194.2 | 12770.3 | 12651.3 | 11711.2 | 10846.5 | 10778.2 | 10707.5 | 11532.2 | 11152.8 |
| 52.5° | 10926.6 | 11073.9 | 11992.8 | 12812.7 | 12968.2 | 12366.2 | 11783.1 | 11738.3 | 11777.2 | 12706.7 | 11827.9 |
| 55° | 9646.1 | 9811.0 | 11473.3 | 12777.4 | 13202.7 | 12916.4 | 12719.7 | 12717.3 | 12918.8 | 13939.0 | 12552.4 |
| 57.5° | 8928.6 | 9045.3 | 10415.4 | 12717.3 | 13480.7 | 13463.0 | 13646.8 | 13669.2 | 14061.5 | 15280.8 | 13311.1 |
| 60° | 8523.4 | 8645.9 | 9879.3 | 12494.7 | 13911.9 | 14169.9 | 14592.8 | 14637.6 | 15223.1 | 16766.4 | 14224.1 |
| 62.5° | 8154.6 | 8288.9 | 9547.1 | 12041.1 | 14419.6 | 15180.7 | 15726.1 | 15766.2 | 16453.0 | 18293.1 | 15106.4 |
| 65° | 7524.4 | 7676.3 | 9060.6 | 11743.0 | 14881.4 | 16498.9 | 17166.9 | 17194.0 | 17865.5 | 19893.0 | 15781.5 |
| 67.5° | 6633.7 | 6772.8 | 8142.9 | 11084.5 | 15223.1 | 18099.9 | 19082.5 | 19097.8 | 19266.2 | 21022.7 | 16126.7 |
| 70° | 5593.5 | 5646.5 | 6835.2 | 9725.0 | 14819.0 | 19597.3 | 21181.8 | 21185.3 | 20543.3 | 21746.1 | 16070.1 |
| 72.5° | 3930.1 | 4054.9 | 4962.0 | 7361.8 | 12735.0 | 19414.7 | 22271.5 | 22311.6 | 21137.0 | 21380.9 | 14786.0 |
| 75° | 2410.3 | 2542.3 | 3112.5 | 4461.4 | 8079.2 | 15269.0 | 20577.4 | 20855.5 | 20023.7 | 19063.6 | 12078.8 |
| 77.5° | 1611.6 | 1661.1 | 2031.0 | 2601.2 | 3660.3 | 8784.9 | 15820.4 | 16343.4 | 16634.4 | 13902.5 | 7724.6 |
| 80° | 898.9 | 993.1 | 1346.5 | 1616.3 | 1628.1 | 3490.6 | 9485.9 | 9608.4 | 9255.0 | 5535.8 | 2383.2 |
| 82.5° | 475.9 | 527.8 | 898.9 | 949.5 | 888.3 | 1168.6 | 3535.4 | 3538.9 | 2957.0 | 1484.4 | 708.0 |
| 85° | 368.7 | 412.3 | 616.1 | 579.6 | 453.6 | 518.4 | 1166.3 | 1229.9 | 1006.1 | 607.9 | 230.9 |
| 87.5° | 183.8 | 228.5 | 418.2 | 367.6 | 177.9 | 148.4 | 417.0 | 445.3 | 397.0 | 238.0 | 83.6 |
| 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: P317980
 CATALOG NUMBER: GLEON-SA6D-722-U-T3R

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 | 6151.9 |
| 2.5° | 6167.2 | 6177.8 | 6190.8 | 6176.6 | 6171.9 | 6153.1 | 6121.3 | 6114.2 | 6097.7 | 6098.9 | 6108.3 |
| 5° | 6221.4 | 6239.1 | 6232.0 | 6177.8 | 6113.0 | 6022.3 | 5928.1 | 5848.0 | 5794.9 | 5791.4 | 5787.9 |
| 7.5° | 6325.1 | 6336.9 | 6281.5 | 6127.2 | 5945.7 | 5736.0 | 5538.1 | 5365.0 | 5260.1 | 5234.2 | 5228.3 |
| 10° | 6487.7 | 6485.3 | 6333.3 | 6022.3 | 5660.6 | 5286.0 | 4967.9 | 4727.6 | 4587.4 | 4546.2 | 4535.6 |
| 12.5° | 6669.1 | 6642.0 | 6351.0 | 5831.5 | 5257.7 | 4738.2 | 4335.3 | 4067.9 | 3921.8 | 3874.7 | 3862.9 |
| 15° | 6856.4 | 6789.2 | 6307.4 | 5546.4 | 4763.0 | 4148.0 | 3725.1 | 3477.7 | 3398.7 | 3372.8 | 3368.1 |
| 17.5° | 7030.7 | 6901.2 | 6182.5 | 5160.0 | 4198.7 | 3560.1 | 3230.3 | 3131.3 | 3150.2 | 3184.3 | 3185.5 |
| 20° | 7201.6 | 6976.6 | 5982.3 | 4672.2 | 3603.7 | 3076.0 | 2964.0 | 3037.1 | 3126.6 | 3196.1 | 3205.5 |
| 22.5° | 7370.0 | 7029.6 | 5724.3 | 4109.1 | 3071.2 | 2803.8 | 2882.7 | 3015.9 | 3118.4 | 3193.8 | 3206.7 |
| 25° | 7511.4 | 7042.5 | 5368.5 | 3508.3 | 2701.3 | 2701.3 | 2843.9 | 2969.9 | 3071.2 | 3145.5 | 3158.4 |
| 27.5° | 7563.2 | 6955.4 | 4866.6 | 2952.3 | 2515.2 | 2654.2 | 2789.7 | 2894.5 | 2980.5 | 3059.5 | 3073.6 |
| 30° | 7583.3 | 6794.0 | 4287.0 | 2505.8 | 2438.6 | 2603.5 | 2716.6 | 2806.2 | 2887.5 | 2961.7 | 2974.6 |
| 32.5° | 7586.8 | 6599.6 | 3672.1 | 2252.5 | 2385.6 | 2550.5 | 2625.9 | 2704.9 | 2792.0 | 2821.5 | 2826.2 |
| 35° | 7609.2 | 6369.8 | 3024.1 | 2122.9 | 2336.1 | 2501.1 | 2561.1 | 2617.7 | 2476.3 | 2486.9 | 2496.3 |
| 37.5° | 7674.0 | 6142.5 | 2482.2 | 2049.8 | 2304.3 | 2475.1 | 2547.0 | 2342.0 | 2231.3 | 2205.4 | 2201.8 |
| 40° | 7795.3 | 5899.8 | 2080.5 | 1990.9 | 2292.5 | 2488.1 | 2456.3 | 2186.5 | 1995.7 | 1853.1 | 1831.9 |
| 42.5° | 7963.8 | 5638.3 | 1823.7 | 1952.1 | 2300.8 | 2550.5 | 2330.2 | 2036.9 | 1720.0 | 1628.1 | 1616.3 |
| 45° | 8153.5 | 5363.8 | 1684.6 | 1925.0 | 2329.1 | 2598.8 | 2304.3 | 1837.8 | 1591.6 | 1522.1 | 1516.2 |
| 47.5° | 8337.2 | 5028.0 | 1612.8 | 1913.2 | 2367.9 | 2560.0 | 2194.8 | 1776.5 | 1530.3 | 1493.8 | 1497.3 |
| 50° | 8548.1 | 4725.3 | 1569.2 | 1900.2 | 2402.1 | 2535.2 | 2071.1 | 1744.7 | 1506.8 | 1551.5 | 1598.6 |
| 52.5° | 8726.0 | 4411.9 | 1530.3 | 1874.3 | 2415.1 | 2491.6 | 2039.2 | 1750.6 | 1506.8 | 1592.8 | 1637.5 |
| 55° | 8936.9 | 4175.1 | 1485.6 | 1820.1 | 2390.3 | 2367.9 | 2016.9 | 1786.0 | 1524.4 | 1470.2 | 1474.9 |
| 57.5° | 9209.0 | 4097.3 | 1436.1 | 1735.3 | 2307.8 | 2187.7 | 2006.3 | 1820.1 | 1513.8 | 1479.7 | 1491.4 |
| 60° | 9586.0 | 4179.8 | 1416.0 | 1624.6 | 2179.4 | 2046.3 | 2007.4 | 1802.5 | 1439.6 | 1380.7 | 1381.9 |
| 62.5° | 9945.3 | 4271.7 | 1414.9 | 1555.1 | 2021.6 | 1920.3 | 1980.3 | 1744.7 | 1401.9 | 1367.7 | 1380.7 |
| 65° | 10063.1 | 4178.6 | 1358.3 | 1477.3 | 1843.7 | 1769.5 | 1930.9 | 1683.5 | 1373.6 | 1321.8 | 1319.4 |
| 67.5° | 9905.3 | 3890.0 | 1244.0 | 1351.3 | 1639.9 | 1593.9 | 1866.1 | 1610.4 | 1328.9 | 1286.5 | 1279.4 |
| 70° | 9436.4 | 3245.6 | 1102.7 | 1185.1 | 1407.8 | 1396.0 | 1763.6 | 1525.6 | 1268.8 | 1232.3 | 1201.6 |
| 72.5° | 8174.7 | 2312.6 | 929.5 | 986.0 | 1146.3 | 1184.0 | 1622.2 | 1414.9 | 1184.0 | 1105.0 | 1057.9 |
| 75° | 6713.8 | 1711.7 | 763.4 | 775.2 | 870.6 | 973.1 | 1427.8 | 1285.3 | 1083.8 | 949.5 | 913.0 |
| 77.5° | 4111.5 | 1047.3 | 607.9 | 612.6 | 624.4 | 776.4 | 1175.7 | 1140.4 | 956.6 | 791.7 | 765.7 |
| 80° | 1331.2 | 571.4 | 439.4 | 461.8 | 426.5 | 569.0 | 909.5 | 970.7 | 821.1 | 662.1 | 633.8 |
| 82.5° | 506.6 | 333.4 | 296.9 | 312.2 | 295.7 | 381.7 | 663.3 | 777.5 | 672.7 | 544.3 | 443.0 |
| 85° | 245.0 | 188.5 | 175.5 | 196.7 | 182.6 | 195.6 | 424.1 | 572.5 | 510.1 | 354.6 | 329.9 |
| 87.5° | 87.2 | 83.6 | 67.2 | 90.7 | 77.8 | 69.5 | 129.6 | 288.6 | 336.9 | 243.9 | 217.9 |
| 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 |

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

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

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

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 | 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 | | | |

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

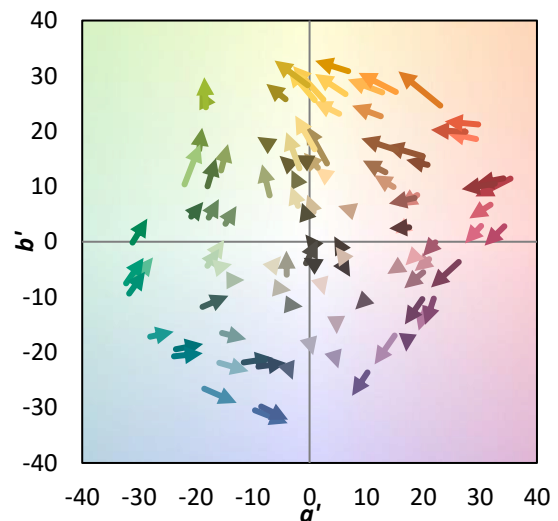
TM-30-18

Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_9 = -17.4$



Color Vector Graphics



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

TM-30-18

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 | |



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

TM-30-18

Color Rendition by Hue-Angle Bin



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

TM-30-18

Measure Comparisons



(END OF REPORT)