

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: P320990

Luminaire Tested: **GLEON-SA6A-750-U-AFL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P320990
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-SA6A-750-U-AFL
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(6) 70 CRI, 5000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE
FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 28594 lumens
Efficiency: N/A
Efficacy: 148.2 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

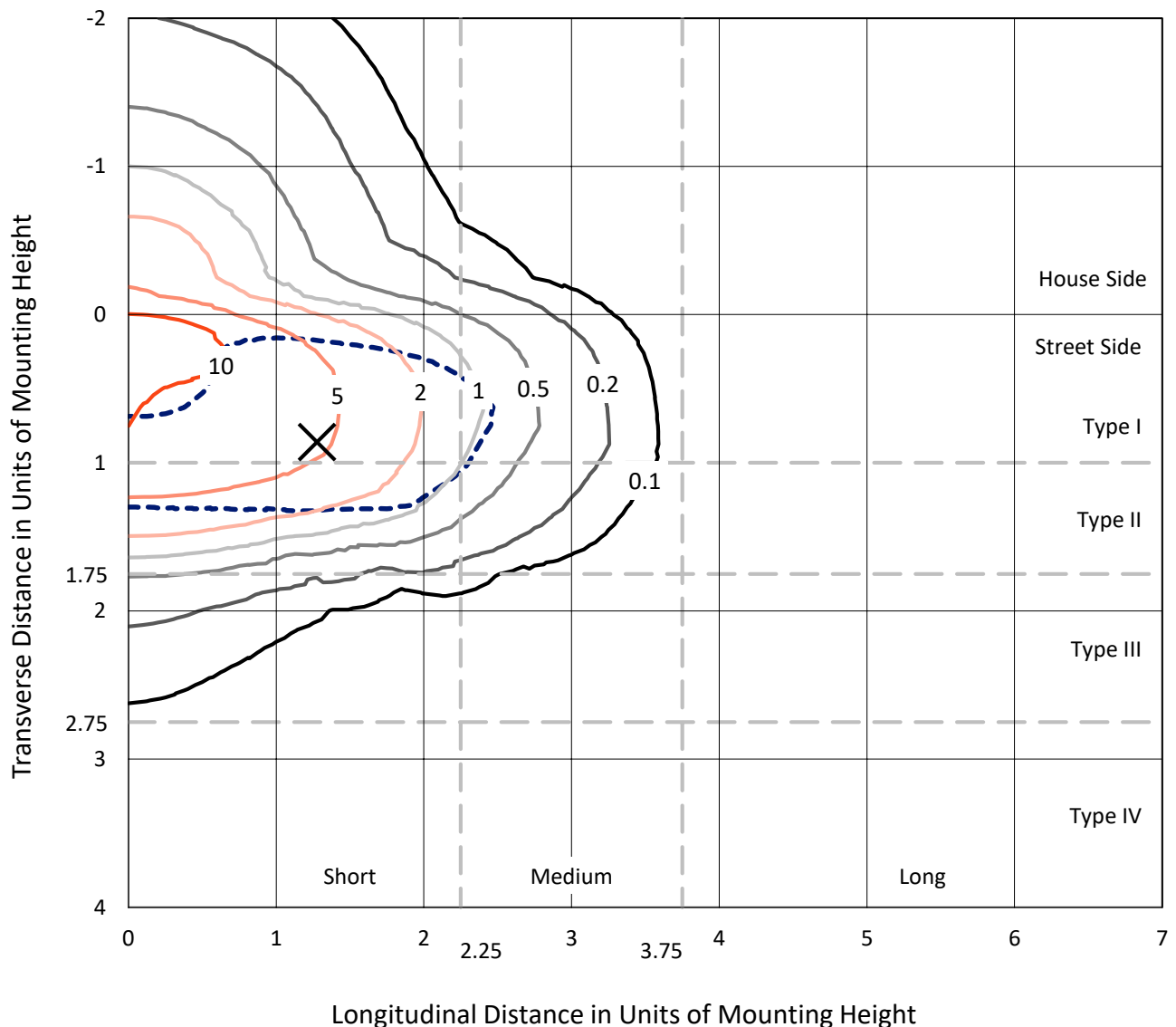
Input Watts (W): 193
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P320990
 CATALOG NUMBER: GLEON-SA6A-750-U-AFL

Iso-Footcandle Lines of Horizontal Illumination

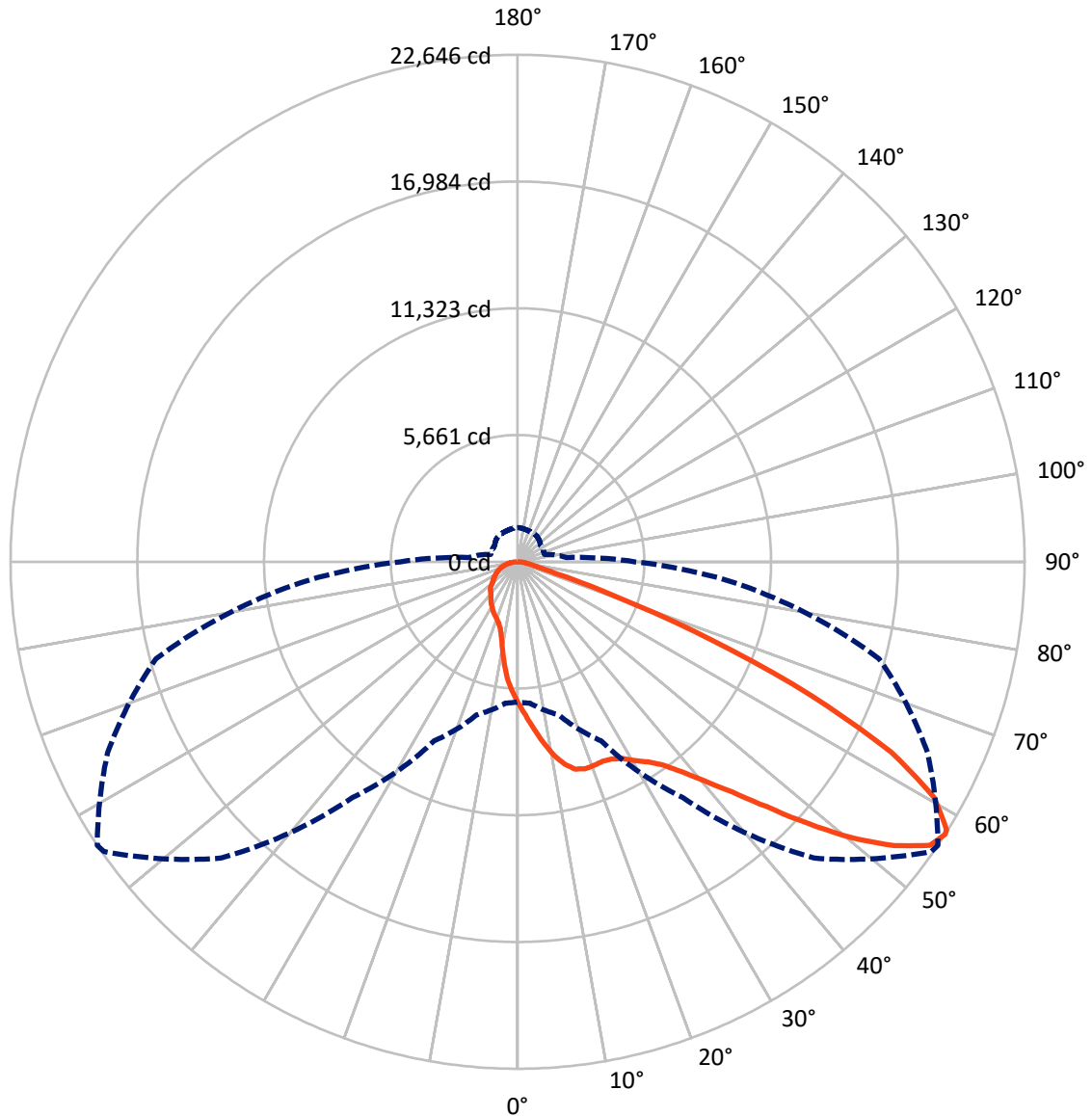
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 14.1 fc
 Type II - Short - N/A

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CATALOG NUMBER: GLEON-SA6A-750-U-AFL

Luminous Intensity Polar Plot



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

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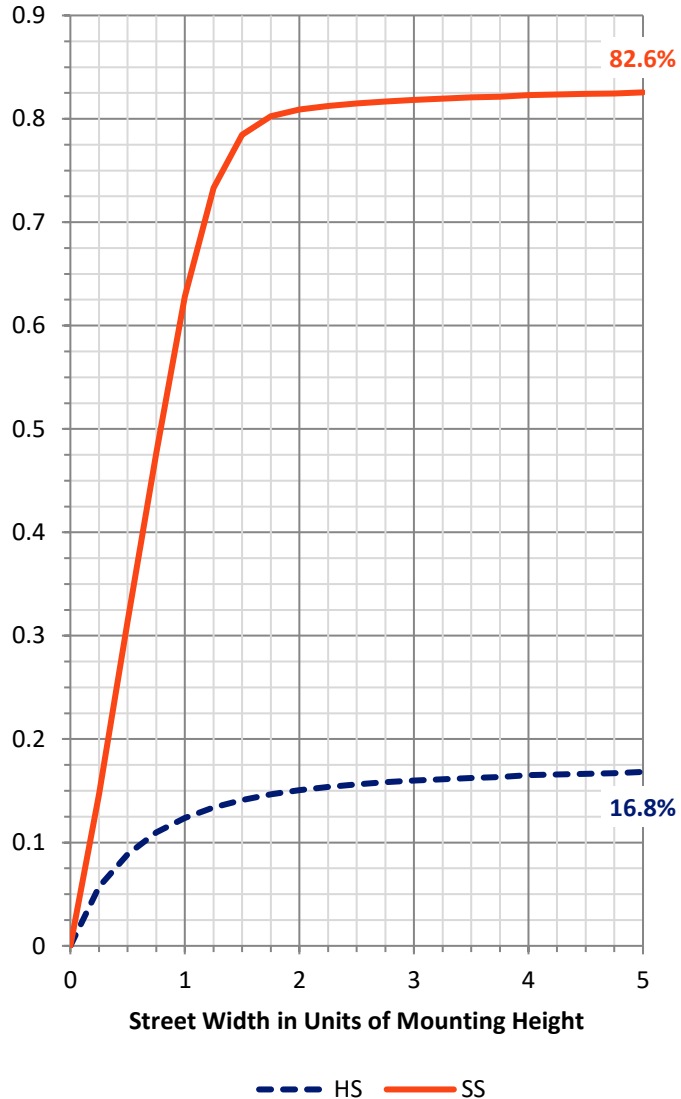
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4929.0 | 0.0 | 4929.0 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 23665.0 | 0.0 | 23665.0 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 28594.0 | 0.0 | 28594.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 605.8 | 2.1 |
| 10°-20° | 1712.8 | 6.0 |
| 20°-30° | 2789.9 | 9.8 |
| 30°-40° | 4170.6 | 14.6 |
| 40°-50° | 6325.9 | 22.1 |
| 50°-60° | 7090.2 | 24.8 |
| 60°-70° | 4187.7 | 14.6 |
| 70°-80° | 1372.1 | 4.8 |
| 80°-90° | 339.0 | 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° | 28594.0 | 100.0 |
| 0°-180° | 28594.0 | 100.0 |

Coefficient of Utilization



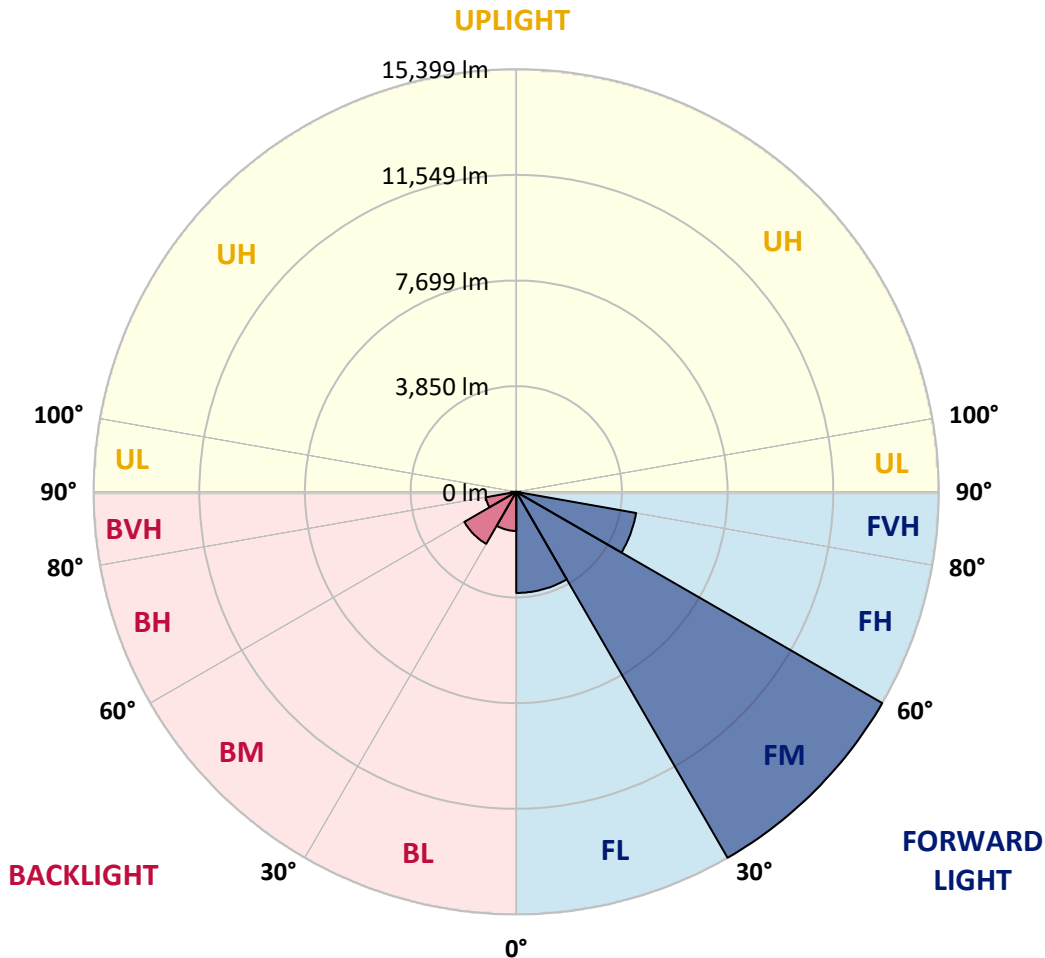
REPORT NUMBER: P320990
 CATALOG NUMBER: GLEON-SA6A-750-U-AFL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3683.3 | 12.9 | | | |
| FM (30°-60°) | 15398.8 | 53.9 | | | |
| FH (60°-80°) | 4433.6 | 15.5 | | | G2/5000 |
| FVH (80°-90°) | 149.3 | 0.5 | | | G2/225 |
| BL (0°-30°) | 1425.2 | 5.0 | B3/2500 | | |
| BM (30°-60°) | 2187.8 | 7.7 | B2/2500 | | |
| BH (60°-80°) | 1126.2 | 3.9 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 189.7 | 0.7 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Short





REPORT NUMBER: P320990

CATALOG NUMBER: GLEON-SA6A-750-U-AFL

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 56° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 |
| 2.5° | 7282.6 | 7349.4 | 7319.9 | 7217.7 | 7139.1 | 7028.1 | 6904.3 | 6866.9 | 6736.2 | 6589.8 | 6413.9 |
| 5° | 8435.3 | 8401.9 | 8353.7 | 8194.5 | 8026.5 | 7830.9 | 7520.4 | 7471.3 | 7180.4 | 6849.2 | 6499.4 |
| 7.5° | 9091.7 | 9088.7 | 9060.3 | 8966.9 | 8813.6 | 8558.1 | 8183.7 | 8125.7 | 7686.5 | 7153.9 | 6611.4 |
| 10° | 8996.4 | 8989.5 | 9036.7 | 9134.0 | 9180.1 | 9127.1 | 8811.6 | 8753.7 | 8214.2 | 7490.9 | 6741.1 |
| 12.5° | 8454.9 | 8458.9 | 8534.5 | 8738.9 | 9017.0 | 9351.1 | 9300.0 | 9271.5 | 8761.5 | 7872.2 | 6898.4 |
| 15° | 8033.4 | 8042.2 | 8102.1 | 8280.0 | 8608.2 | 9214.5 | 9596.8 | 9606.6 | 9291.2 | 8292.8 | 7082.1 |
| 17.5° | 7848.6 | 7867.3 | 7894.8 | 8019.6 | 8320.3 | 8942.3 | 9667.5 | 9720.6 | 9755.0 | 8729.1 | 7259.0 |
| 20° | 7907.6 | 7925.3 | 7933.1 | 8012.7 | 8259.4 | 8777.2 | 9618.4 | 9713.7 | 10110.7 | 9139.8 | 7435.9 |
| 22.5° | 8171.9 | 8182.7 | 8187.6 | 8208.3 | 8399.9 | 8824.4 | 9586.0 | 9686.2 | 10368.2 | 9508.3 | 7569.5 |
| 25° | 8610.2 | 8602.3 | 8570.9 | 8544.3 | 8673.1 | 9011.1 | 9660.7 | 9756.0 | 10577.5 | 9842.5 | 7657.0 |
| 27.5° | 9134.9 | 9125.1 | 9064.2 | 8991.5 | 9065.2 | 9302.0 | 9875.9 | 9951.5 | 10765.2 | 10154.9 | 7701.2 |
| 30° | 9764.8 | 9739.3 | 9624.3 | 9537.8 | 9566.3 | 9738.3 | 10230.6 | 10299.4 | 11055.1 | 10509.7 | 7744.5 |
| 32.5° | 10493.0 | 10465.5 | 10299.4 | 10155.9 | 10155.9 | 10299.4 | 10596.2 | 10653.2 | 11300.7 | 10910.6 | 7814.2 |
| 35° | 11404.9 | 11370.5 | 11154.3 | 10913.6 | 10845.8 | 10918.5 | 11094.4 | 11134.7 | 11742.9 | 11415.7 | 7941.0 |
| 37.5° | 12480.0 | 12433.8 | 12153.7 | 11831.4 | 11683.0 | 11679.1 | 11805.8 | 11888.4 | 12449.5 | 12079.0 | 8156.2 |
| 40° | 13557.9 | 13525.5 | 13280.8 | 13027.3 | 12736.4 | 12643.1 | 12838.6 | 12864.2 | 13373.2 | 12902.5 | 8431.3 |
| 42.5° | 14391.3 | 14385.4 | 14340.2 | 14373.6 | 14075.8 | 13887.1 | 14040.4 | 14061.1 | 14501.3 | 13793.8 | 8724.2 |
| 45° | 14831.5 | 14841.3 | 15060.5 | 15545.9 | 15656.0 | 15518.4 | 15594.0 | 15599.9 | 15790.6 | 14692.9 | 8992.4 |
| 47.5° | 14478.7 | 14529.8 | 15084.0 | 16169.9 | 17071.0 | 17527.9 | 17402.2 | 17474.9 | 17040.5 | 15465.3 | 9202.7 |
| 50° | 13104.0 | 13166.8 | 14110.2 | 15891.8 | 17731.4 | 19472.7 | 19406.8 | 19390.1 | 18048.8 | 16031.3 | 9316.7 |
| 52.5° | 11401.0 | 11450.1 | 12228.4 | 14446.3 | 17246.9 | 20547.7 | 21152.0 | 21065.6 | 18945.0 | 16454.9 | 9338.3 |
| 55° | 8807.7 | 8884.4 | 9630.2 | 11561.2 | 15287.5 | 20136.9 | 22435.4 | 22357.8 | 19761.6 | 16677.0 | 9312.8 |
| 57° | 6261.6 | 6342.2 | 7083.1 | 8823.4 | 12860.2 | 18715.0 | 22563.2 | 22645.7 | 20202.8 | 16714.3 | 9341.3 |
| 57.5° | 5587.5 | 5670.0 | 6404.1 | 8094.3 | 12103.6 | 18201.1 | 22453.1 | 22590.7 | 20282.4 | 16708.4 | 9357.0 |
| 60° | 2813.4 | 2844.8 | 3312.6 | 4518.3 | 7651.1 | 14714.6 | 21017.4 | 21372.2 | 20354.1 | 16419.5 | 9424.8 |
| 62.5° | 1749.2 | 1726.6 | 1711.8 | 2081.3 | 3722.4 | 9757.9 | 18054.7 | 18737.6 | 18981.3 | 15719.8 | 9260.7 |
| 65° | 1537.9 | 1495.6 | 1333.5 | 1304.0 | 1644.0 | 4739.4 | 13596.3 | 14446.3 | 16048.0 | 14617.3 | 8869.6 |
| 67.5° | 1444.5 | 1403.3 | 1220.5 | 1110.4 | 1111.4 | 1878.9 | 8441.2 | 9398.3 | 12501.6 | 12753.1 | 7946.9 |
| 70° | 1348.2 | 1310.9 | 1139.9 | 1010.2 | 946.3 | 1040.7 | 3883.5 | 4609.7 | 8149.3 | 10024.3 | 6641.9 |
| 72.5° | 1224.4 | 1198.9 | 1036.7 | 903.1 | 835.3 | 779.3 | 1486.8 | 1756.0 | 4717.8 | 6732.3 | 4612.7 |
| 75° | 1094.7 | 1071.1 | 932.6 | 804.8 | 722.3 | 613.2 | 837.2 | 902.1 | 2396.7 | 3444.3 | 2271.0 |
| 77.5° | 952.2 | 938.5 | 829.4 | 711.5 | 645.6 | 508.0 | 592.6 | 624.0 | 1027.9 | 1477.0 | 1138.9 |
| 80° | 757.6 | 784.2 | 725.2 | 633.8 | 572.9 | 406.8 | 419.6 | 440.2 | 598.4 | 721.3 | 646.6 |
| 82.5° | 493.3 | 539.5 | 568.0 | 514.9 | 471.7 | 320.4 | 301.7 | 310.5 | 390.1 | 440.2 | 281.0 |
| 85° | 205.4 | 230.9 | 373.4 | 337.1 | 313.5 | 233.9 | 202.4 | 206.4 | 241.7 | 250.6 | 115.0 |
| 87.5° | 91.4 | 97.3 | 164.1 | 154.3 | 132.7 | 80.6 | 86.5 | 94.3 | 128.7 | 121.9 | 44.2 |
| 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: P320990
 CATALOG NUMBER: GLEON-SA6A-750-U-AFL

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 | 6342.2 |
| 2.5° | 6348.1 | 6265.5 | 6124.0 | 5967.8 | 5840.0 | 5737.8 | 5634.7 | 5563.9 | 5481.4 | 5437.1 | 5414.5 |
| 5° | 6353.0 | 6190.8 | 5893.1 | 5587.5 | 5314.3 | 5064.7 | 4826.9 | 4644.1 | 4473.1 | 4380.8 | 4355.2 |
| 7.5° | 6373.6 | 6129.9 | 5648.4 | 5145.3 | 4659.8 | 4216.7 | 3874.7 | 3660.5 | 3506.2 | 3437.4 | 3417.7 |
| 10° | 6390.3 | 6058.2 | 5345.7 | 4600.9 | 3940.5 | 3491.4 | 3226.1 | 3106.2 | 3053.2 | 3044.3 | 3035.5 |
| 12.5° | 6429.6 | 5984.5 | 5027.4 | 4032.9 | 3381.4 | 3070.9 | 2978.5 | 2970.6 | 2985.4 | 3007.0 | 3007.0 |
| 15° | 6491.5 | 5911.8 | 4663.8 | 3545.5 | 3025.7 | 2916.6 | 2935.2 | 2978.5 | 3018.8 | 3052.2 | 3057.1 |
| 17.5° | 6536.7 | 5822.3 | 4272.7 | 3155.4 | 2836.0 | 2865.5 | 2932.3 | 2993.2 | 3034.5 | 3066.9 | 3069.9 |
| 20° | 6569.2 | 5683.8 | 3855.0 | 2857.6 | 2726.9 | 2818.3 | 2901.8 | 2955.9 | 2984.4 | 3016.8 | 3021.7 |
| 22.5° | 6552.5 | 5498.1 | 3484.6 | 2644.4 | 2638.5 | 2749.5 | 2829.1 | 2894.0 | 2872.4 | 2840.9 | 2861.5 |
| 25° | 6471.9 | 5242.6 | 3103.3 | 2485.2 | 2545.1 | 2657.1 | 2755.4 | 2712.2 | 2639.5 | 2625.7 | 2633.6 |
| 27.5° | 6328.4 | 4916.3 | 2750.5 | 2337.8 | 2437.0 | 2571.7 | 2565.8 | 2522.5 | 2497.0 | 2479.3 | 2490.1 |
| 30° | 6174.1 | 4562.6 | 2441.9 | 2209.1 | 2317.1 | 2428.2 | 2405.6 | 2404.6 | 2379.1 | 2350.6 | 2364.3 |
| 32.5° | 6021.8 | 4206.8 | 2197.3 | 2102.9 | 2226.7 | 2241.5 | 2290.6 | 2305.4 | 2255.2 | 2195.3 | 2191.4 |
| 35° | 5889.2 | 3870.8 | 2011.5 | 2006.6 | 2117.7 | 2119.6 | 2191.4 | 2170.7 | 2045.9 | 1984.0 | 1984.0 |
| 37.5° | 5789.9 | 3535.7 | 1870.0 | 1920.1 | 1974.2 | 2025.3 | 2061.6 | 1976.2 | 1955.5 | 1921.1 | 1920.1 |
| 40° | 5746.7 | 3240.9 | 1781.6 | 1854.3 | 1873.0 | 1937.8 | 1844.5 | 1877.9 | 1887.7 | 1870.0 | 1870.0 |
| 42.5° | 5701.5 | 2984.4 | 1704.9 | 1804.2 | 1801.2 | 1792.4 | 1745.2 | 1788.5 | 1827.8 | 1828.8 | 1825.8 |
| 45° | 5656.3 | 2763.3 | 1637.1 | 1697.1 | 1738.3 | 1643.0 | 1651.9 | 1698.1 | 1753.1 | 1772.7 | 1772.7 |
| 47.5° | 5606.2 | 2588.4 | 1575.2 | 1584.1 | 1647.9 | 1584.1 | 1577.2 | 1612.6 | 1677.4 | 1708.9 | 1715.7 |
| 50° | 5496.1 | 2431.1 | 1504.5 | 1484.8 | 1502.5 | 1524.1 | 1530.0 | 1546.7 | 1618.5 | 1668.6 | 1680.4 |
| 52.5° | 5343.8 | 2290.6 | 1414.1 | 1393.4 | 1393.4 | 1475.0 | 1502.5 | 1507.4 | 1568.3 | 1628.3 | 1640.1 |
| 55° | 5217.0 | 2201.2 | 1320.7 | 1316.8 | 1312.9 | 1422.9 | 1470.1 | 1477.9 | 1520.2 | 1567.4 | 1573.3 |
| 57° | 5225.9 | 2194.3 | 1249.0 | 1252.9 | 1251.9 | 1369.8 | 1439.6 | 1456.3 | 1477.9 | 1518.2 | 1525.1 |
| 57.5° | 5230.8 | 2199.2 | 1233.3 | 1235.2 | 1234.2 | 1355.1 | 1430.8 | 1449.4 | 1466.1 | 1508.4 | 1515.3 |
| 60° | 5304.5 | 2212.0 | 1169.4 | 1147.8 | 1152.7 | 1276.5 | 1380.7 | 1404.2 | 1415.0 | 1471.1 | 1479.9 |
| 62.5° | 5195.4 | 2155.0 | 1118.3 | 1066.2 | 1066.2 | 1193.9 | 1310.9 | 1348.2 | 1364.9 | 1440.6 | 1455.3 |
| 65° | 4879.0 | 1994.8 | 1058.3 | 973.8 | 983.7 | 1111.4 | 1227.4 | 1288.3 | 1313.8 | 1408.2 | 1423.9 |
| 67.5° | 4390.6 | 1809.1 | 994.5 | 891.3 | 901.1 | 1024.9 | 1140.9 | 1206.7 | 1247.0 | 1372.8 | 1385.6 |
| 70° | 3754.8 | 1582.1 | 908.0 | 803.8 | 815.6 | 930.6 | 1038.7 | 1113.4 | 1173.3 | 1339.4 | 1343.3 |
| 72.5° | 2768.2 | 1297.1 | 787.1 | 707.5 | 720.3 | 820.5 | 935.5 | 1022.0 | 1102.6 | 1255.9 | 1253.9 |
| 75° | 1646.0 | 1014.1 | 653.5 | 610.2 | 619.1 | 712.4 | 842.2 | 947.3 | 1068.2 | 1223.4 | 1242.1 |
| 77.5° | 998.4 | 763.5 | 532.6 | 511.0 | 521.8 | 617.1 | 775.3 | 887.4 | 1053.4 | 1153.7 | 1147.8 |
| 80° | 603.4 | 545.4 | 425.5 | 411.7 | 422.5 | 527.7 | 717.4 | 842.2 | 920.8 | 985.6 | 985.6 |
| 82.5° | 315.4 | 333.1 | 312.5 | 301.7 | 316.4 | 428.4 | 652.5 | 735.0 | 813.7 | 698.7 | 652.5 |
| 85° | 128.7 | 173.9 | 189.7 | 188.7 | 197.5 | 296.8 | 563.1 | 628.9 | 524.7 | 498.2 | 510.0 |
| 87.5° | 43.2 | 73.7 | 92.4 | 79.6 | 83.5 | 186.7 | 390.1 | 303.6 | 360.6 | 251.6 | 238.8 |
| 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: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-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-750-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): | 4884 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

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| 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 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-R4

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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)