

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: P324875

Luminaire Tested: **GLEON-SA1B-760-U-AFL-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P324875
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA1B-760-U-AFL-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(1) 70 CRI, 5700K, 800mA LIGHTSQUARE WITH 16 LEDS AND AUTOMOTIVE
FRONTLINE OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4898 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G1

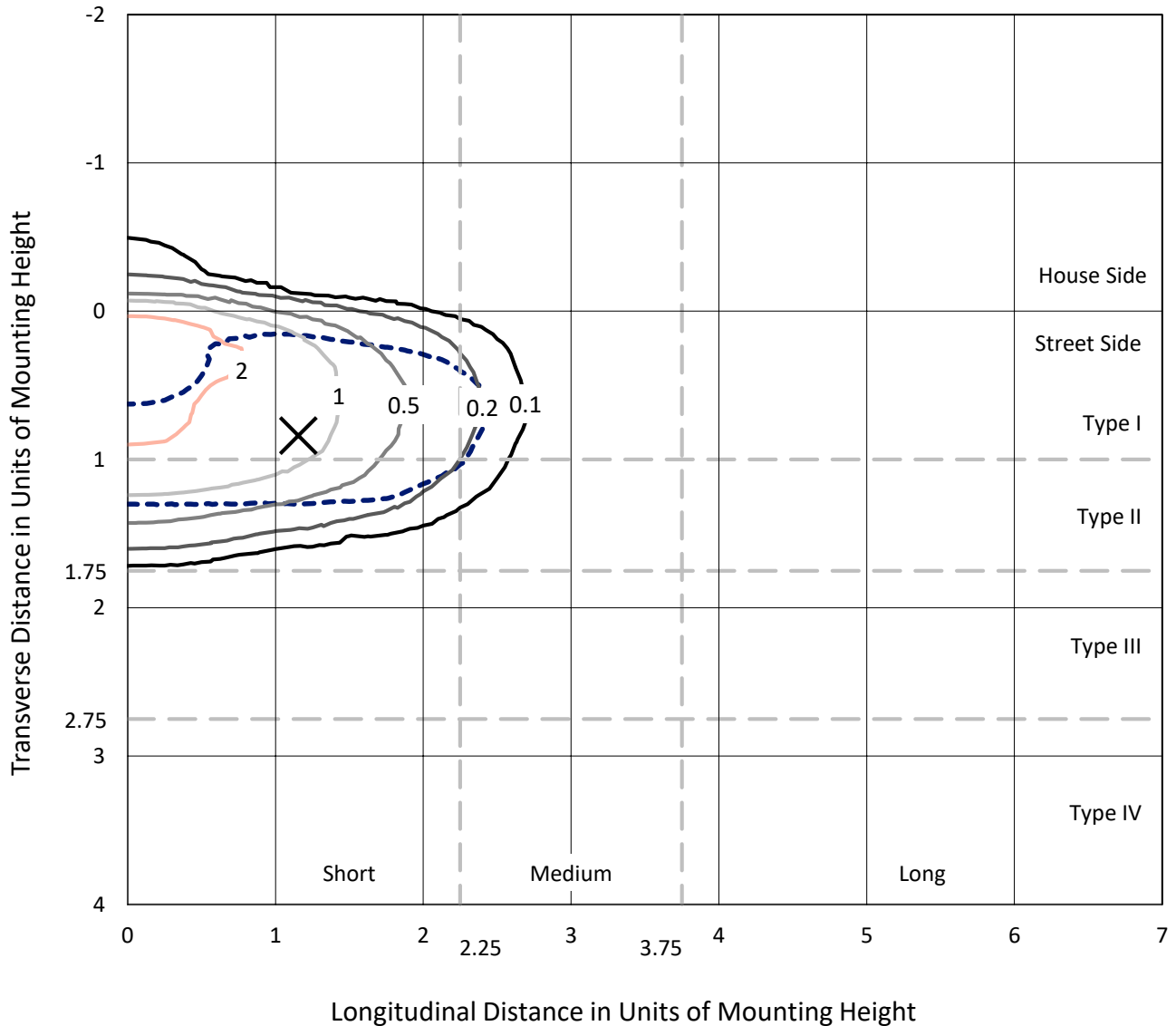
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P324875
 CATALOG NUMBER: GLEON-SA1B-760-U-AFL-HSS

Iso-Footcandle Lines of Horizontal Illumination

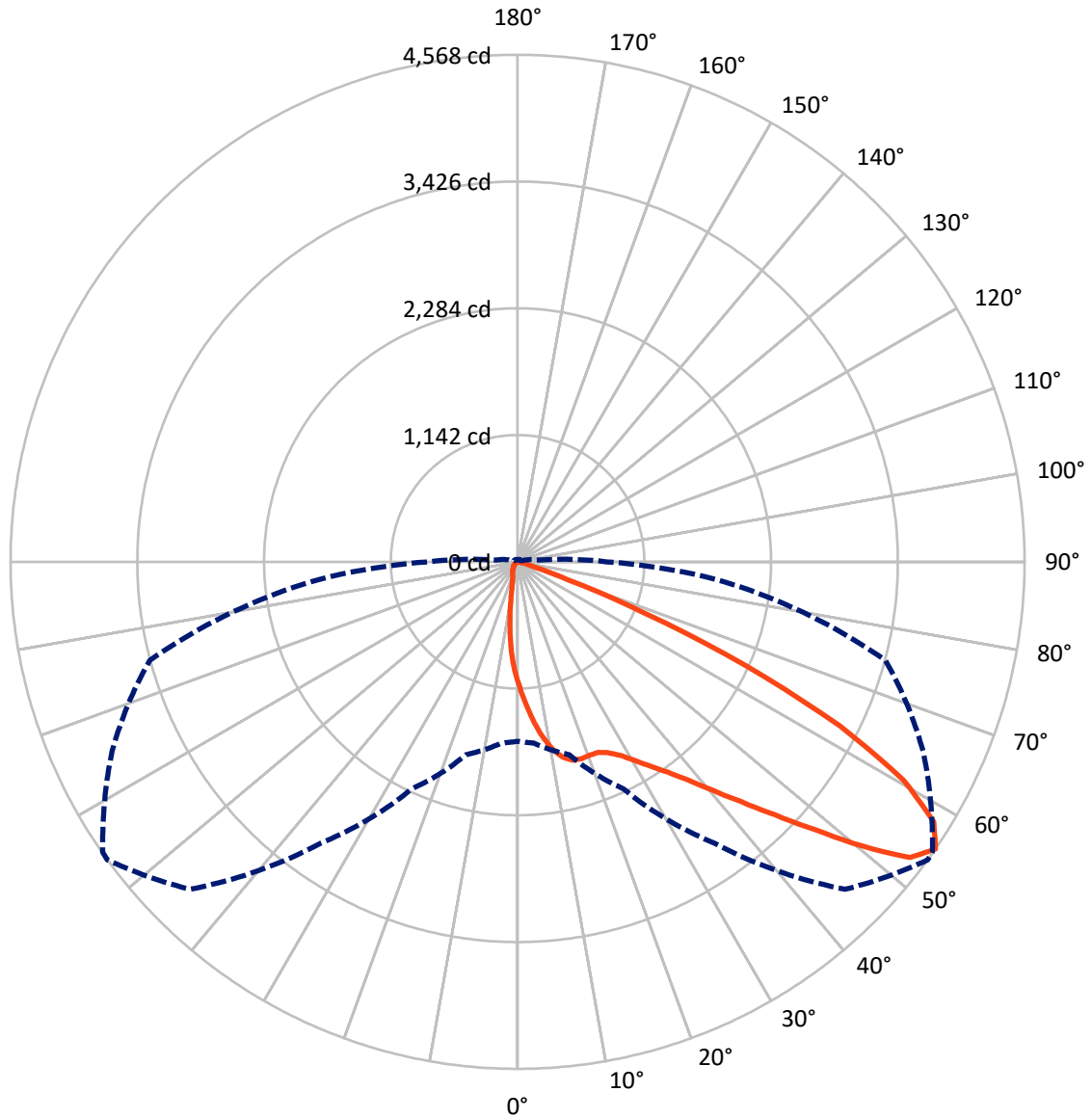
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.7 fc
 Type II - Short - N/A

REPORT NUMBER: P324875
CATALOG NUMBER: GLEON-SA1B-760-U-AFL-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 54-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

REPORT NUMBER: P324875
 CATALOG NUMBER: GLEON-SA1B-760-U-AFL-HSS

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 244.4 | 0.0 | 244.4 |
| | % Fixture | 5.0 | 0.0 | 5.0 |
| Street Side | Lumens | 4653.6 | 0.0 | 4653.6 |
| | % Fixture | 95.0 | 0.0 | 95.0 |
| Total | Lumens | 4898.0 | 0.0 | 4898.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 101.0 | 2.1 |
| 10°-20° | 277.0 | 5.7 |
| 20°-30° | 473.0 | 9.7 |
| 30°-40° | 759.1 | 15.5 |
| 40°-50° | 1213.0 | 24.8 |
| 50°-60° | 1299.8 | 26.5 |
| 60°-70° | 667.4 | 13.6 |
| 70°-80° | 101.1 | 2.1 |
| 80°-90° | 6.6 | 0.1 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 4898.0 | 100.0 |
| 0°-180° | 4898.0 | 100.0 |

Coefficient of Utilization



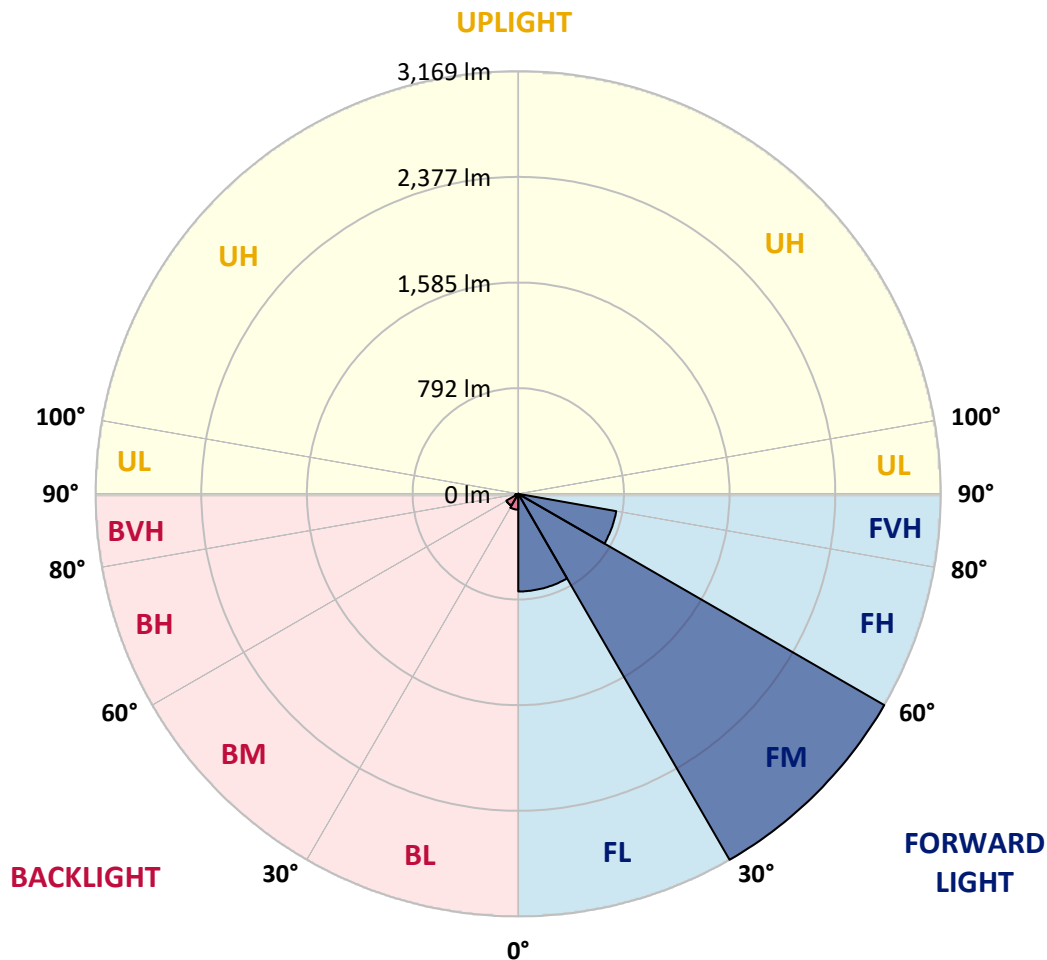
REPORT NUMBER: P324875
 CATALOG NUMBER: GLEON-SA1B-760-U-AFL-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 732.2 | 14.9 | | | |
| FM (30°-60°) | 3169.2 | 64.7 | | | |
| FH (60°-80°) | 745.9 | 15.2 | | | G1/1800 |
| FVH (80°-90°) | 6.3 | 0.1 | | | G0/10 |
| BL (0°-30°) | 118.9 | 2.4 | B1/500 | | |
| BM (30°-60°) | 102.7 | 2.1 | B0/220 | | |
| BH (60°-80°) | 22.5 | 0.5 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.3 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type II Short





REPORT NUMBER: P324875

CATALOG NUMBER: GLEON-SA1B-760-U-AFL-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 54° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 |
| 2.5° | 1376.6 | 1356.1 | 1356.7 | 1347.4 | 1313.3 | 1286.7 | 1259.0 | 1252.4 | 1209.3 | 1164.0 | 1120.4 |
| 5° | 1614.6 | 1599.5 | 1595.9 | 1578.0 | 1530.6 | 1480.4 | 1426.7 | 1414.2 | 1329.8 | 1237.2 | 1146.0 |
| 7.5° | 1736.8 | 1737.0 | 1734.1 | 1727.5 | 1697.9 | 1649.2 | 1583.7 | 1570.6 | 1455.7 | 1316.7 | 1172.7 |
| 10° | 1701.3 | 1709.3 | 1725.8 | 1747.6 | 1770.2 | 1764.1 | 1714.8 | 1703.0 | 1578.2 | 1400.9 | 1202.3 |
| 12.5° | 1618.4 | 1619.4 | 1637.8 | 1673.6 | 1738.7 | 1805.6 | 1806.4 | 1802.4 | 1695.1 | 1488.9 | 1234.9 |
| 15° | 1577.1 | 1581.1 | 1587.9 | 1611.0 | 1672.7 | 1779.7 | 1856.3 | 1862.0 | 1802.4 | 1582.4 | 1269.6 |
| 17.5° | 1604.2 | 1609.9 | 1604.2 | 1606.9 | 1642.7 | 1738.9 | 1865.0 | 1879.6 | 1896.1 | 1674.8 | 1302.3 |
| 20° | 1677.6 | 1682.9 | 1672.7 | 1661.5 | 1668.5 | 1727.1 | 1858.9 | 1878.5 | 1969.5 | 1756.9 | 1329.8 |
| 22.5° | 1776.6 | 1778.7 | 1763.3 | 1744.8 | 1739.8 | 1767.3 | 1863.9 | 1884.2 | 2028.3 | 1831.1 | 1347.2 |
| 25° | 1885.5 | 1887.4 | 1868.2 | 1847.0 | 1835.0 | 1846.2 | 1905.6 | 1920.8 | 2080.1 | 1902.0 | 1357.1 |
| 27.5° | 2004.2 | 2005.9 | 1981.8 | 1955.7 | 1941.8 | 1942.2 | 1974.4 | 1990.6 | 2135.3 | 1982.8 | 1365.2 |
| 30° | 2129.6 | 2128.8 | 2106.6 | 2070.4 | 2052.6 | 2052.2 | 2073.3 | 2089.8 | 2215.3 | 2086.5 | 1376.2 |
| 32.5° | 2270.5 | 2268.8 | 2237.3 | 2192.4 | 2172.3 | 2175.3 | 2194.1 | 2203.6 | 2314.5 | 2196.9 | 1395.8 |
| 35° | 2456.0 | 2451.1 | 2403.5 | 2347.9 | 2310.9 | 2309.8 | 2325.7 | 2333.3 | 2441.0 | 2330.6 | 1428.6 |
| 37.5° | 2696.7 | 2692.3 | 2627.7 | 2546.9 | 2494.9 | 2475.4 | 2494.3 | 2504.0 | 2621.4 | 2502.1 | 1481.3 |
| 40° | 2934.0 | 2929.6 | 2891.3 | 2817.3 | 2737.1 | 2690.4 | 2705.2 | 2715.5 | 2846.7 | 2710.2 | 1547.7 |
| 42.5° | 3097.7 | 3101.6 | 3114.9 | 3121.0 | 3045.9 | 2947.8 | 2954.5 | 2965.3 | 3083.4 | 2932.8 | 1623.6 |
| 45° | 3140.9 | 3149.1 | 3224.4 | 3372.3 | 3400.4 | 3323.9 | 3253.0 | 3258.9 | 3323.9 | 3155.3 | 1699.6 |
| 47.5° | 3011.2 | 3026.5 | 3171.8 | 3446.8 | 3684.9 | 3739.1 | 3605.0 | 3597.2 | 3554.6 | 3335.3 | 1753.5 |
| 50° | 2716.6 | 2730.5 | 2918.8 | 3325.6 | 3771.2 | 4135.5 | 4026.8 | 4003.7 | 3757.1 | 3443.0 | 1772.6 |
| 52.5° | 2290.2 | 2307.1 | 2460.0 | 2944.0 | 3608.6 | 4312.3 | 4426.1 | 4406.9 | 3905.6 | 3451.4 | 1775.7 |
| 55° | 1617.3 | 1637.8 | 1799.6 | 2256.3 | 3093.1 | 4171.6 | 4567.6 | 4561.9 | 4028.9 | 3429.0 | 1782.5 |
| 57.5° | 908.9 | 923.7 | 1098.2 | 1446.4 | 2265.4 | 3633.5 | 4419.8 | 4457.6 | 4103.3 | 3390.1 | 1792.7 |
| 60° | 403.6 | 407.6 | 497.9 | 720.0 | 1326.2 | 2776.9 | 3996.5 | 4060.4 | 4039.4 | 3338.0 | 1809.8 |
| 62.5° | 223.8 | 220.4 | 220.4 | 299.3 | 576.4 | 1719.0 | 3258.9 | 3364.5 | 3766.8 | 3276.5 | 1810.6 |
| 65° | 175.4 | 172.2 | 163.1 | 164.4 | 219.6 | 763.0 | 2256.7 | 2444.4 | 3249.0 | 3096.1 | 1749.7 |
| 67.5° | 148.7 | 146.0 | 136.9 | 133.3 | 136.4 | 251.7 | 1239.9 | 1434.8 | 2465.3 | 2627.1 | 1515.6 |
| 70° | 125.6 | 123.7 | 119.1 | 114.6 | 106.6 | 124.4 | 474.4 | 606.9 | 1519.2 | 1747.6 | 1034.6 |
| 72.5° | 101.1 | 100.3 | 102.0 | 98.1 | 88.4 | 82.9 | 162.2 | 196.5 | 682.4 | 779.9 | 426.2 |
| 75° | 87.1 | 86.7 | 87.6 | 83.8 | 72.8 | 57.7 | 82.5 | 90.1 | 192.5 | 190.8 | 86.3 |
| 77.5° | 56.7 | 57.3 | 72.6 | 70.9 | 62.6 | 38.5 | 42.7 | 46.1 | 58.4 | 43.8 | 26.2 |
| 80° | 36.2 | 35.7 | 36.8 | 58.8 | 56.3 | 29.4 | 21.4 | 22.4 | 28.1 | 21.6 | 12.7 |
| 82.5° | 22.0 | 21.6 | 24.1 | 27.5 | 28.3 | 20.5 | 13.1 | 13.3 | 17.6 | 14.0 | 6.8 |
| 85° | 1.9 | 2.5 | 14.6 | 13.5 | 9.7 | 6.3 | 6.3 | 6.8 | 9.3 | 8.2 | 3.8 |
| 87.5° | 0.0 | 0.0 | 2.5 | 3.8 | 2.1 | 2.3 | 2.3 | 2.5 | 3.6 | 3.6 | 1.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P324875

CATALOG NUMBER: GLEON-SA1B-760-U-AFL-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 | 1097.0 |
| 2.5° | 1097.8 | 1075.8 | 1031.4 | 988.7 | 952.5 | 917.6 | 877.8 | 838.5 | 820.1 | 812.7 | 805.1 |
| 5° | 1099.7 | 1054.4 | 962.9 | 870.6 | 775.0 | 688.9 | 615.5 | 540.2 | 502.6 | 486.1 | 478.5 |
| 7.5° | 1102.2 | 1033.3 | 885.2 | 730.4 | 576.4 | 459.6 | 357.7 | 292.1 | 263.8 | 259.3 | 248.3 |
| 10° | 1102.7 | 1007.7 | 795.1 | 575.6 | 386.5 | 277.1 | 213.2 | 179.4 | 166.9 | 164.8 | 161.2 |
| 12.5° | 1103.5 | 977.4 | 695.1 | 426.2 | 257.6 | 185.3 | 154.2 | 143.0 | 139.6 | 139.4 | 139.4 |
| 15° | 1106.1 | 945.7 | 591.2 | 307.1 | 185.1 | 146.8 | 135.4 | 130.9 | 129.7 | 130.3 | 130.1 |
| 17.5° | 1106.1 | 908.3 | 489.3 | 228.9 | 149.5 | 132.0 | 125.6 | 122.7 | 122.3 | 122.9 | 123.1 |
| 20° | 1098.0 | 862.8 | 395.8 | 178.1 | 132.6 | 122.5 | 116.8 | 114.0 | 113.0 | 113.4 | 113.6 |
| 22.5° | 1078.8 | 807.0 | 319.6 | 147.4 | 121.4 | 113.8 | 107.7 | 103.4 | 101.7 | 102.0 | 102.0 |
| 25° | 1048.7 | 740.8 | 250.0 | 127.5 | 112.3 | 104.5 | 97.3 | 92.4 | 91.4 | 91.2 | 91.6 |
| 27.5° | 1010.2 | 667.6 | 199.0 | 112.3 | 101.5 | 94.1 | 86.9 | 82.9 | 82.1 | 82.3 | 82.5 |
| 30° | 972.4 | 591.6 | 156.9 | 99.4 | 89.5 | 82.5 | 77.0 | 75.1 | 75.1 | 75.7 | 75.9 |
| 32.5° | 937.7 | 518.7 | 124.2 | 88.2 | 78.7 | 72.3 | 69.2 | 69.0 | 70.0 | 70.4 | 70.6 |
| 35° | 907.9 | 451.2 | 102.8 | 79.5 | 70.2 | 64.7 | 63.7 | 64.5 | 65.8 | 66.6 | 66.8 |
| 37.5° | 886.7 | 390.9 | 89.9 | 72.3 | 63.7 | 59.2 | 59.0 | 60.7 | 62.4 | 64.3 | 64.7 |
| 40° | 877.8 | 339.9 | 81.0 | 66.0 | 58.4 | 55.0 | 54.4 | 56.7 | 59.9 | 62.6 | 63.0 |
| 42.5° | 870.4 | 298.2 | 73.4 | 59.9 | 54.1 | 49.3 | 49.1 | 52.0 | 55.8 | 58.6 | 59.2 |
| 45° | 864.1 | 264.8 | 66.4 | 53.3 | 48.7 | 42.3 | 42.9 | 46.7 | 49.7 | 52.7 | 53.3 |
| 47.5° | 851.0 | 237.3 | 58.8 | 46.3 | 40.2 | 36.2 | 37.4 | 40.8 | 43.2 | 47.6 | 48.2 |
| 50° | 827.5 | 214.9 | 51.0 | 37.9 | 32.8 | 31.3 | 33.2 | 35.5 | 38.5 | 42.3 | 42.7 |
| 52.5° | 811.6 | 198.0 | 44.2 | 31.7 | 27.1 | 27.5 | 29.4 | 30.2 | 31.9 | 33.4 | 33.0 |
| 55° | 802.5 | 188.7 | 38.7 | 27.5 | 23.1 | 24.3 | 24.7 | 23.7 | 22.8 | 21.4 | 20.7 |
| 57.5° | 801.5 | 180.2 | 34.5 | 23.9 | 20.3 | 20.9 | 19.5 | 15.9 | 12.9 | 11.2 | 10.8 |
| 60° | 799.8 | 169.9 | 31.1 | 20.1 | 18.0 | 17.1 | 14.0 | 8.7 | 6.1 | 5.7 | 5.7 |
| 62.5° | 781.4 | 153.8 | 28.6 | 16.9 | 15.2 | 12.9 | 8.0 | 4.0 | 3.4 | 3.6 | 3.6 |
| 65° | 722.8 | 131.4 | 26.0 | 13.7 | 12.1 | 9.3 | 4.0 | 2.3 | 1.3 | 1.5 | 1.5 |
| 67.5° | 614.5 | 104.7 | 23.3 | 10.6 | 9.1 | 5.9 | 2.3 | 1.1 | 0.0 | 0.0 | 0.0 |
| 70° | 411.4 | 64.9 | 19.7 | 7.4 | 5.9 | 3.6 | 1.7 | 0.2 | 0.0 | 0.0 | 0.0 |
| 72.5° | 157.8 | 35.1 | 15.9 | 4.4 | 3.8 | 2.5 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 35.5 | 23.1 | 11.0 | 3.2 | 2.7 | 1.7 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 13.5 | 16.7 | 6.3 | 2.1 | 1.9 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 6.6 | 9.9 | 3.0 | 1.3 | 1.1 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 3.4 | 3.8 | 1.3 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 1.9 | 1.9 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.1 | 0.6 | 0.2 | 0.2 | 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: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

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

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-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-760-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): | 5474 | CRI (Ra): | 71.7 | R9: | -27.1 |
| CIE u': | 0.2052 | R1: | 70.6 | R10: | 40.8 |
| CIE v': | 0.4804 | R2: | 74.6 | R11: | 74.6 |
| Duv: | 0.0025 | R3: | 78.3 | R12: | 50.4 |
| CIE x: | 0.3330 | R4: | 73.8 | R13: | 70.0 |
| CIE y: | 0.3466 | R5: | 72.4 | R14: | 87.8 |
| CIE z: | 0.3204 | R6: | 67.5 | | |
| Peak Wavelength (nm): | 442 | R7: | 77.5 | | |
| Dominant Wavelength (nm): | 554 | R8: | 58.9 | | |
| Purity: | 4.1 | | | | |
| Rf: | 72.1 | | | | |
| Rg: | 97.2 | | | | |



Test Conditions

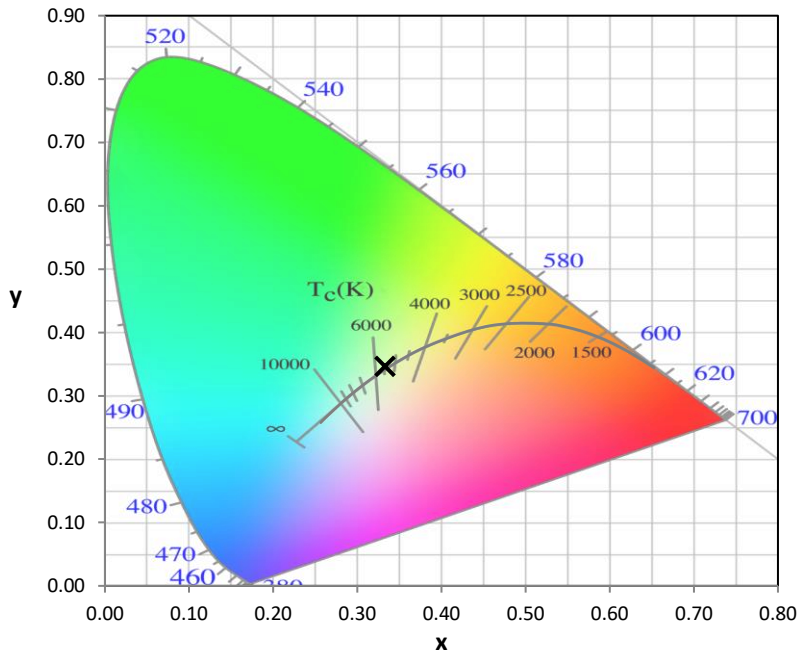
Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-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: SP1-1908-441-9-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-9-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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

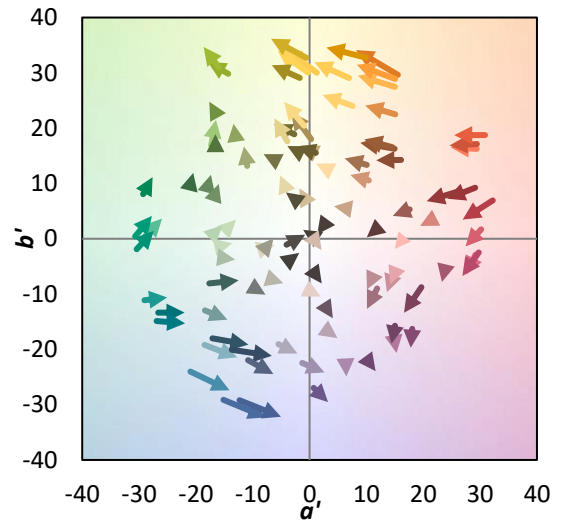
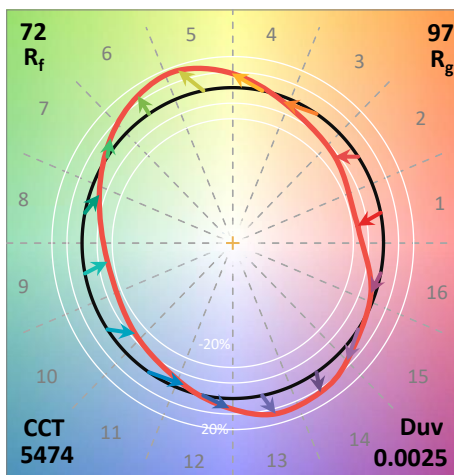
TM-30-18

Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

Measure Comparisons



(END OF REPORT)