

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: P321355

Luminaire Tested: **GLEON-SA1B-760-U-T2R-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P321355
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-SA1B-760-U-T2R-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(1) 70 CRI, 5700K, 800mA LIGHTSQUARE WITH 16 LEDS AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4830 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B0 - 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

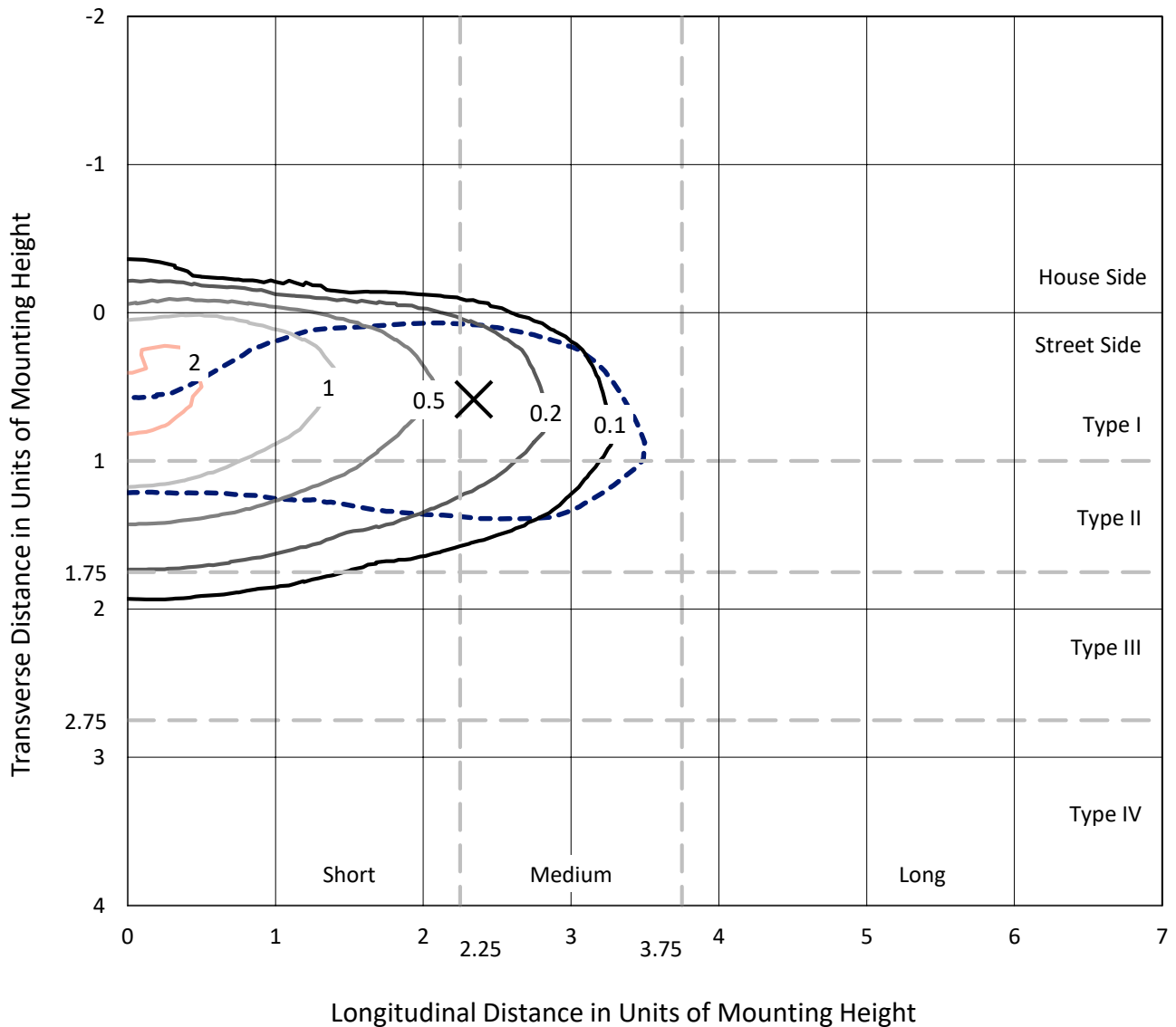




REPORT NUMBER: P321355
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Iso-Footcandle Lines of Horizontal Illumination

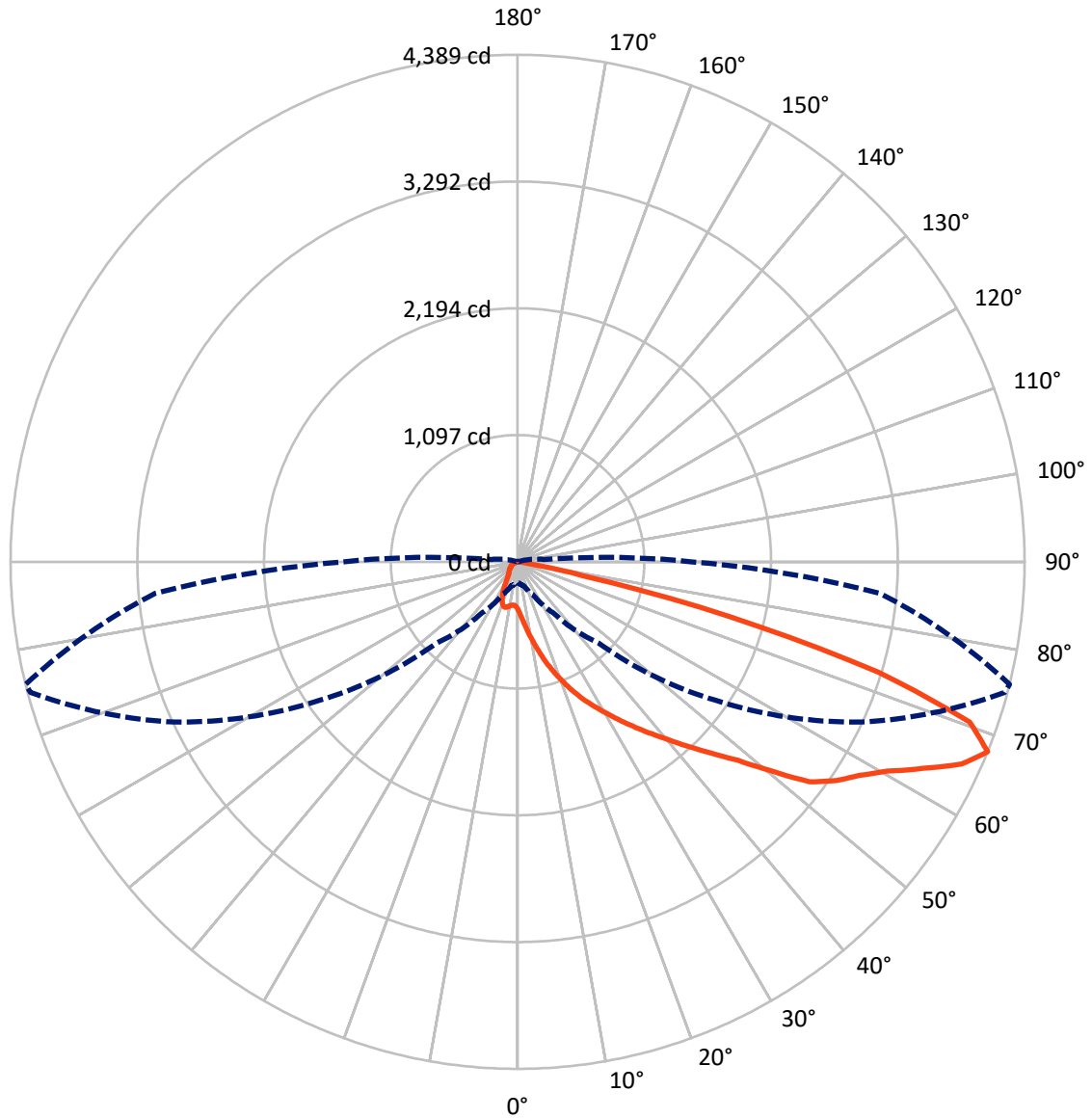
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.3 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



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

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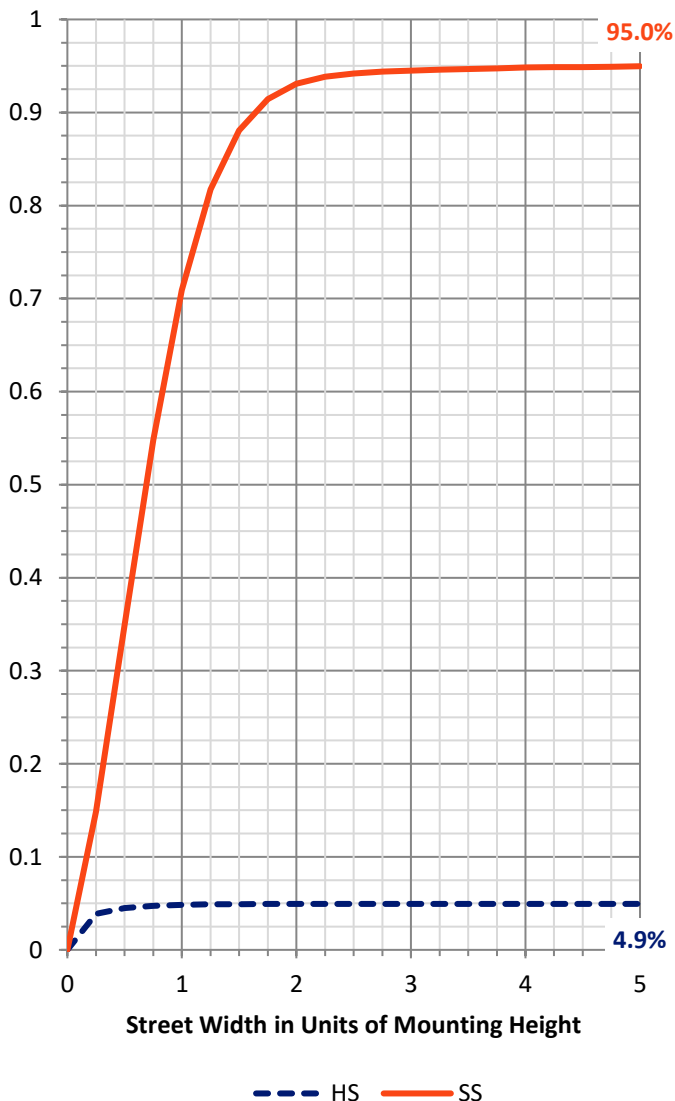
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 239.8 | 0.0 | 239.8 |
| | % Fixture | 5.0 | 0.0 | 5.0 |
| Street Side | Lumens | 4590.2 | 0.0 | 4590.2 |
| | % Fixture | 95.0 | 0.0 | 95.0 |
| Total | Lumens | 4830.0 | 0.0 | 4830.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 50.9 | 1.1 |
| 10°-20° | 202.0 | 4.2 |
| 20°-30° | 410.9 | 8.5 |
| 30°-40° | 713.3 | 14.8 |
| 40°-50° | 1007.7 | 20.9 |
| 50°-60° | 1142.8 | 23.7 |
| 60°-70° | 947.9 | 19.6 |
| 70°-80° | 343.3 | 7.1 |
| 80°-90° | 11.1 | 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° | 4830.0 | 100.0 |
| 0°-180° | 4830.0 | 100.0 |

Coefficient of Utilization

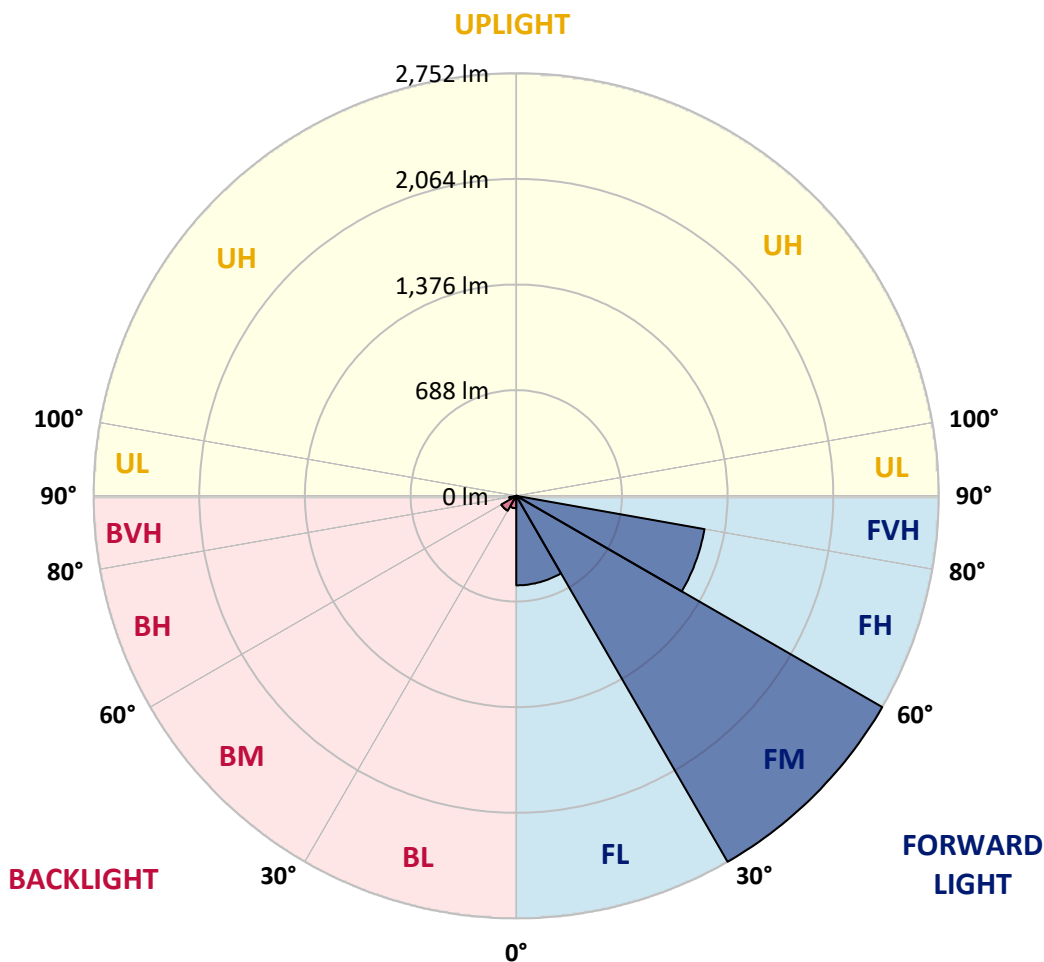


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 583.0 | 12.1 | | | |
| FM (30°-60°) | 2751.6 | 57.0 | | | |
| FH (60°-80°) | 1244.9 | 25.8 | | | G1/1800 |
| FVH (80°-90°) | 10.8 | 0.2 | | | G1/100 |
| BL (0°-30°) | 80.9 | 1.7 | B0/110 | | |
| BM (30°-60°) | 112.3 | 2.3 | B0/220 | | |
| BH (60°-80°) | 46.4 | 1.0 | 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: B0-U0-G1
 Type II Medium





REPORT NUMBER: P321355

CATALOG NUMBER: GLEON-SA1B-760-U-T2R-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 |
| 2.5° | 611.6 | 597.9 | 601.0 | 592.2 | 576.1 | 543.1 | 514.9 | 488.2 | 457.1 | 456.1 | 430.5 |
| 5° | 824.7 | 813.1 | 811.6 | 793.6 | 764.4 | 708.3 | 653.7 | 591.5 | 522.1 | 517.0 | 462.6 |
| 7.5° | 1018.2 | 1008.9 | 1005.5 | 984.1 | 929.7 | 875.1 | 804.0 | 712.6 | 604.0 | 594.7 | 506.0 |
| 10° | 1166.7 | 1162.3 | 1163.1 | 1147.9 | 1101.3 | 1050.6 | 957.2 | 840.6 | 696.9 | 682.5 | 558.1 |
| 12.5° | 1279.3 | 1280.4 | 1288.0 | 1278.7 | 1252.7 | 1215.0 | 1115.3 | 977.1 | 799.8 | 780.1 | 617.5 |
| 15° | 1362.1 | 1367.4 | 1381.3 | 1393.0 | 1391.1 | 1358.5 | 1267.1 | 1115.7 | 909.0 | 887.2 | 683.8 |
| 17.5° | 1415.6 | 1421.5 | 1441.9 | 1467.7 | 1491.4 | 1483.8 | 1413.5 | 1249.5 | 1019.4 | 994.3 | 754.7 |
| 20° | 1462.6 | 1469.6 | 1491.4 | 1525.5 | 1569.7 | 1579.2 | 1533.1 | 1379.2 | 1129.7 | 1099.0 | 827.9 |
| 22.5° | 1564.4 | 1564.2 | 1577.5 | 1597.4 | 1639.5 | 1664.1 | 1634.9 | 1499.6 | 1238.7 | 1206.7 | 902.6 |
| 25° | 1748.5 | 1741.5 | 1736.9 | 1721.2 | 1730.5 | 1745.8 | 1729.5 | 1612.2 | 1348.3 | 1315.9 | 978.4 |
| 27.5° | 1967.4 | 1971.6 | 1933.9 | 1891.8 | 1859.2 | 1843.5 | 1816.9 | 1716.6 | 1453.7 | 1418.2 | 1052.5 |
| 30° | 2198.2 | 2199.5 | 2155.1 | 2101.3 | 2029.6 | 1970.1 | 1924.0 | 1816.2 | 1562.1 | 1523.3 | 1124.4 |
| 32.5° | 2406.5 | 2398.2 | 2354.2 | 2281.0 | 2190.4 | 2123.5 | 2027.7 | 1927.6 | 1676.8 | 1639.3 | 1204.4 |
| 35° | 2571.6 | 2561.8 | 2508.3 | 2441.6 | 2347.7 | 2280.4 | 2165.0 | 2038.7 | 1797.4 | 1760.8 | 1284.6 |
| 37.5° | 2692.2 | 2680.8 | 2625.7 | 2557.2 | 2476.1 | 2437.0 | 2324.4 | 2159.5 | 1929.0 | 1889.7 | 1369.1 |
| 40° | 2734.1 | 2724.2 | 2689.7 | 2639.5 | 2574.3 | 2565.4 | 2493.5 | 2298.6 | 2072.3 | 2030.4 | 1464.7 |
| 42.5° | 2709.1 | 2699.4 | 2687.1 | 2670.2 | 2643.1 | 2651.6 | 2653.0 | 2457.1 | 2231.5 | 2190.2 | 1570.3 |
| 45° | 2610.1 | 2601.4 | 2614.1 | 2638.9 | 2672.5 | 2714.4 | 2798.7 | 2627.4 | 2409.2 | 2365.2 | 1692.4 |
| 47.5° | 2464.3 | 2457.9 | 2493.1 | 2554.8 | 2653.3 | 2768.8 | 2931.8 | 2806.5 | 2608.8 | 2568.0 | 1844.8 |
| 50° | 2256.9 | 2255.8 | 2326.1 | 2438.9 | 2590.2 | 2795.1 | 3069.3 | 3010.1 | 2886.1 | 2843.1 | 2056.7 |
| 52.5° | 1933.9 | 1936.0 | 2074.2 | 2254.8 | 2479.5 | 2777.3 | 3157.8 | 3271.7 | 3208.6 | 3163.9 | 2240.1 |
| 55° | 1626.4 | 1639.1 | 1737.1 | 1997.4 | 2309.8 | 2711.2 | 3188.3 | 3393.8 | 3386.6 | 3344.2 | 2342.2 |
| 57.5° | 1325.3 | 1348.3 | 1442.7 | 1685.9 | 2062.0 | 2559.1 | 3171.6 | 3446.7 | 3519.1 | 3486.7 | 2476.8 |
| 60° | 998.9 | 1009.5 | 1118.3 | 1345.6 | 1743.9 | 2281.4 | 3050.3 | 3475.5 | 3700.2 | 3677.8 | 2672.1 |
| 62.5° | 635.5 | 662.0 | 758.5 | 977.8 | 1357.8 | 1895.8 | 2845.8 | 3475.0 | 3926.9 | 3939.1 | 2924.2 |
| 65° | 334.8 | 365.7 | 416.9 | 605.9 | 933.1 | 1465.1 | 2538.3 | 3442.4 | 4205.0 | 4222.1 | 3121.2 |
| 67.5° | 180.5 | 189.4 | 216.5 | 314.5 | 541.1 | 992.6 | 2086.5 | 3281.6 | 4366.0 | 4388.7 | 3148.7 |
| 70° | 132.1 | 136.9 | 147.1 | 174.0 | 272.4 | 576.5 | 1522.5 | 2917.0 | 4158.4 | 4149.9 | 2797.6 |
| 72.5° | 101.4 | 109.0 | 116.6 | 127.4 | 156.6 | 307.7 | 947.9 | 2284.2 | 3318.0 | 3262.1 | 2091.2 |
| 75° | 80.0 | 81.3 | 92.1 | 101.8 | 117.5 | 175.2 | 420.9 | 1330.3 | 2025.1 | 1892.9 | 1084.4 |
| 77.5° | 63.9 | 64.8 | 71.1 | 79.6 | 94.4 | 115.1 | 130.4 | 523.4 | 646.5 | 576.9 | 235.3 |
| 80° | 37.9 | 40.0 | 52.9 | 61.4 | 78.3 | 72.6 | 47.6 | 113.6 | 100.9 | 91.4 | 39.6 |
| 82.5° | 21.2 | 22.9 | 29.8 | 48.5 | 54.6 | 34.7 | 23.7 | 30.7 | 23.7 | 23.1 | 11.2 |
| 85° | 0.0 | 1.1 | 19.3 | 30.1 | 22.2 | 7.6 | 9.9 | 10.2 | 7.0 | 6.6 | 4.4 |
| 87.5° | 0.0 | 0.0 | 5.9 | 5.7 | 0.8 | 1.3 | 2.3 | 3.4 | 2.8 | 2.8 | 2.3 |
| 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: P321355

CATALOG NUMBER: GLEON-SA1B-760-U-T2R-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 | 409.7 |
| 2.5° | 417.8 | 406.3 | 384.8 | 363.6 | 345.8 | 331.2 | 318.1 | 312.8 | 308.6 | 307.9 | 304.5 |
| 5° | 436.4 | 413.3 | 372.1 | 338.2 | 315.5 | 299.5 | 285.7 | 277.2 | 270.7 | 268.1 | 265.8 |
| 7.5° | 464.5 | 429.6 | 370.4 | 331.4 | 304.3 | 277.2 | 251.8 | 224.3 | 207.2 | 200.6 | 196.8 |
| 10° | 498.8 | 451.2 | 376.7 | 329.5 | 282.1 | 225.0 | 182.9 | 147.9 | 133.8 | 129.1 | 127.8 |
| 12.5° | 538.8 | 478.1 | 387.7 | 317.7 | 234.7 | 159.8 | 126.1 | 114.3 | 111.1 | 109.6 | 109.6 |
| 15° | 584.7 | 507.5 | 395.5 | 283.4 | 173.5 | 120.8 | 109.2 | 103.7 | 100.3 | 98.4 | 98.6 |
| 17.5° | 631.7 | 536.3 | 391.7 | 233.6 | 128.0 | 107.5 | 98.8 | 92.9 | 88.3 | 86.3 | 85.9 |
| 20° | 679.1 | 562.9 | 370.6 | 174.0 | 108.4 | 97.6 | 87.8 | 81.3 | 76.6 | 74.7 | 74.3 |
| 22.5° | 728.2 | 585.6 | 333.3 | 127.6 | 97.4 | 86.6 | 77.0 | 70.5 | 66.0 | 64.3 | 63.5 |
| 25° | 776.1 | 604.0 | 281.3 | 103.3 | 87.0 | 76.2 | 67.1 | 61.0 | 56.9 | 55.2 | 55.0 |
| 27.5° | 820.7 | 615.6 | 220.9 | 91.2 | 77.9 | 66.9 | 58.6 | 53.1 | 49.7 | 48.5 | 48.3 |
| 30° | 860.9 | 616.7 | 163.4 | 82.3 | 69.8 | 58.8 | 51.2 | 46.3 | 43.4 | 42.1 | 41.7 |
| 32.5° | 901.6 | 607.8 | 118.9 | 74.3 | 62.4 | 51.9 | 44.4 | 40.6 | 38.5 | 37.5 | 37.5 |
| 35° | 939.9 | 587.3 | 92.7 | 67.3 | 55.2 | 45.1 | 39.2 | 36.4 | 35.1 | 34.1 | 34.1 |
| 37.5° | 977.3 | 557.9 | 78.7 | 61.2 | 48.5 | 39.4 | 34.5 | 32.8 | 31.7 | 30.7 | 30.7 |
| 40° | 1015.4 | 520.8 | 71.5 | 55.4 | 43.0 | 34.9 | 30.7 | 29.2 | 28.1 | 27.3 | 27.1 |
| 42.5° | 1062.2 | 478.1 | 66.9 | 50.2 | 38.1 | 30.9 | 27.1 | 25.4 | 24.5 | 23.7 | 23.3 |
| 45° | 1116.4 | 441.3 | 63.1 | 44.9 | 34.1 | 27.5 | 23.5 | 21.8 | 20.5 | 19.5 | 19.3 |
| 47.5° | 1194.5 | 414.6 | 58.0 | 39.2 | 30.3 | 23.9 | 20.3 | 18.4 | 16.5 | 15.4 | 15.2 |
| 50° | 1294.1 | 392.6 | 51.4 | 34.1 | 26.5 | 20.3 | 16.9 | 14.6 | 12.9 | 11.9 | 11.9 |
| 52.5° | 1343.7 | 363.8 | 45.5 | 29.6 | 22.2 | 17.1 | 13.8 | 11.0 | 10.2 | 9.1 | 9.1 |
| 55° | 1363.6 | 341.8 | 39.6 | 25.2 | 18.4 | 14.2 | 10.8 | 8.5 | 7.8 | 7.2 | 7.0 |
| 57.5° | 1419.4 | 335.4 | 34.5 | 21.4 | 15.2 | 11.2 | 8.3 | 6.3 | 5.9 | 5.1 | 5.1 |
| 60° | 1509.4 | 338.6 | 29.8 | 18.2 | 12.3 | 8.7 | 6.1 | 4.9 | 4.4 | 3.6 | 3.6 |
| 62.5° | 1606.5 | 334.6 | 25.2 | 15.7 | 9.5 | 6.3 | 4.2 | 3.6 | 3.6 | 2.1 | 1.9 |
| 65° | 1625.1 | 298.0 | 21.6 | 12.9 | 7.4 | 4.7 | 2.8 | 2.3 | 3.2 | 0.4 | 0.0 |
| 67.5° | 1508.3 | 231.1 | 18.6 | 9.9 | 5.5 | 3.6 | 2.1 | 1.1 | 2.8 | 0.0 | 0.0 |
| 70° | 1206.1 | 146.9 | 15.0 | 7.2 | 4.2 | 3.0 | 1.7 | 0.4 | 2.1 | 0.0 | 0.0 |
| 72.5° | 852.9 | 85.3 | 11.9 | 5.1 | 3.6 | 2.3 | 1.3 | 0.0 | 1.3 | 0.0 | 0.0 |
| 75° | 431.3 | 45.5 | 7.4 | 3.8 | 2.8 | 1.7 | 0.8 | 0.0 | 0.2 | 0.0 | 0.0 |
| 77.5° | 93.3 | 21.2 | 4.7 | 2.8 | 1.9 | 1.1 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 20.3 | 9.3 | 3.0 | 1.7 | 1.1 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 7.4 | 4.9 | 1.5 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 4.0 | 2.5 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 2.1 | 0.8 | 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 |

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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 5700K 4-step quadrangle

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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 | 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 | | | |

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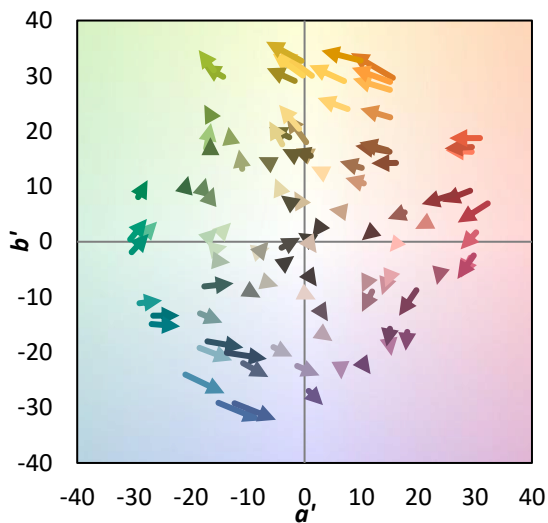
TM-30-18

Summary

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



Color Vector Graphics



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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 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)