

Classified
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: P459710

Luminaire Tested: **GLEON-SA5A-AMB-U-SL4-HSS**

Issue Date: 1/6/2021

Test Information

Test Method: LM-79-08
Report Number: P459710
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2003-697-9)
Test Lab: INNOVATION CENTER
Issue Date: 1/6/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA5A-AMB-U-SL4-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(5) NARROW BAND AMBER, 500mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3942 lumens
Efficiency: N/A
Efficacy: 39.0 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type IV - Medium - Non-Cutoff
BUG Rating: B0 - U0 - G1

Input Watts (W): 101
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: 28.75 FT

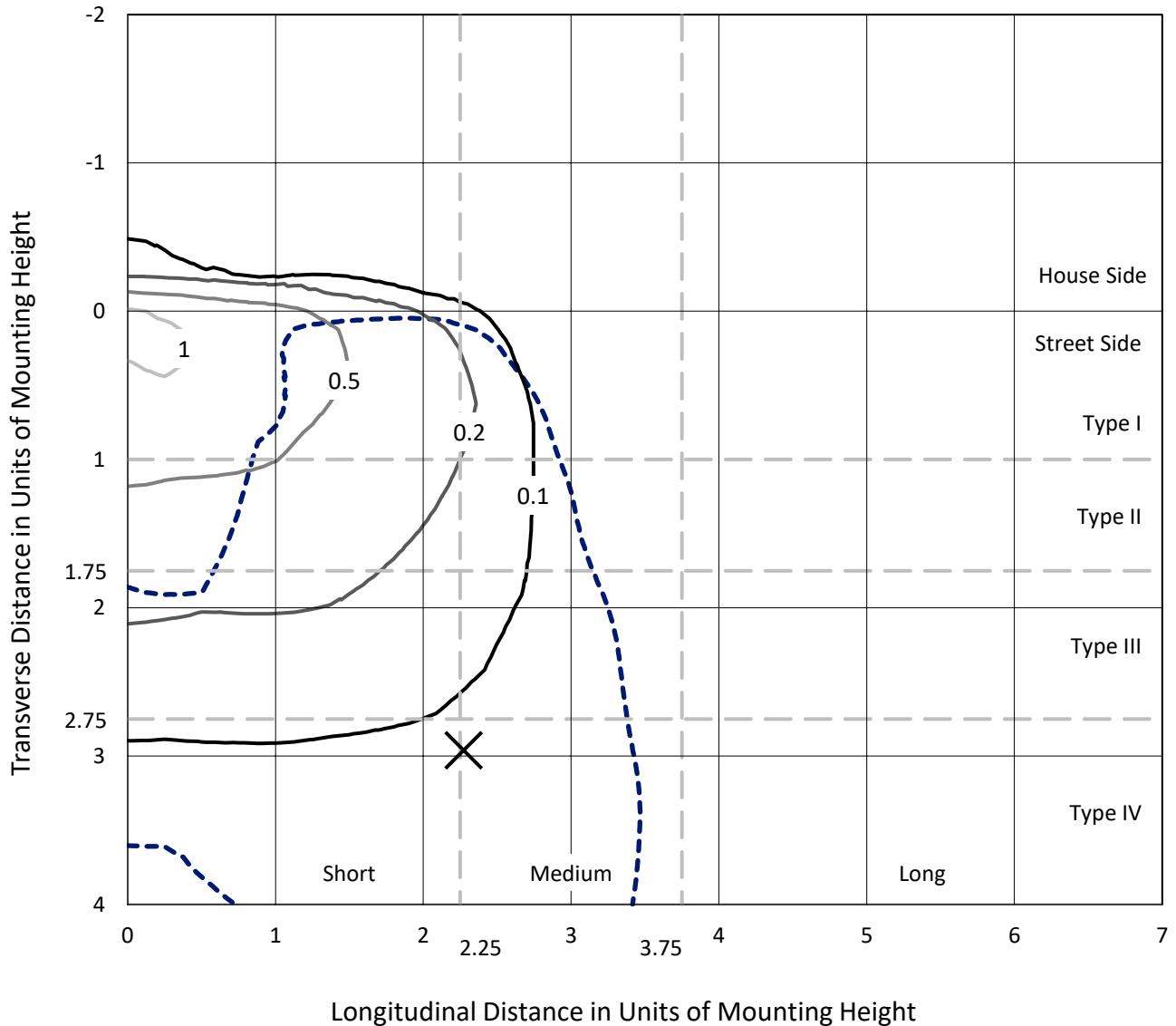




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Iso-Footcandle Lines of Horizontal Illumination

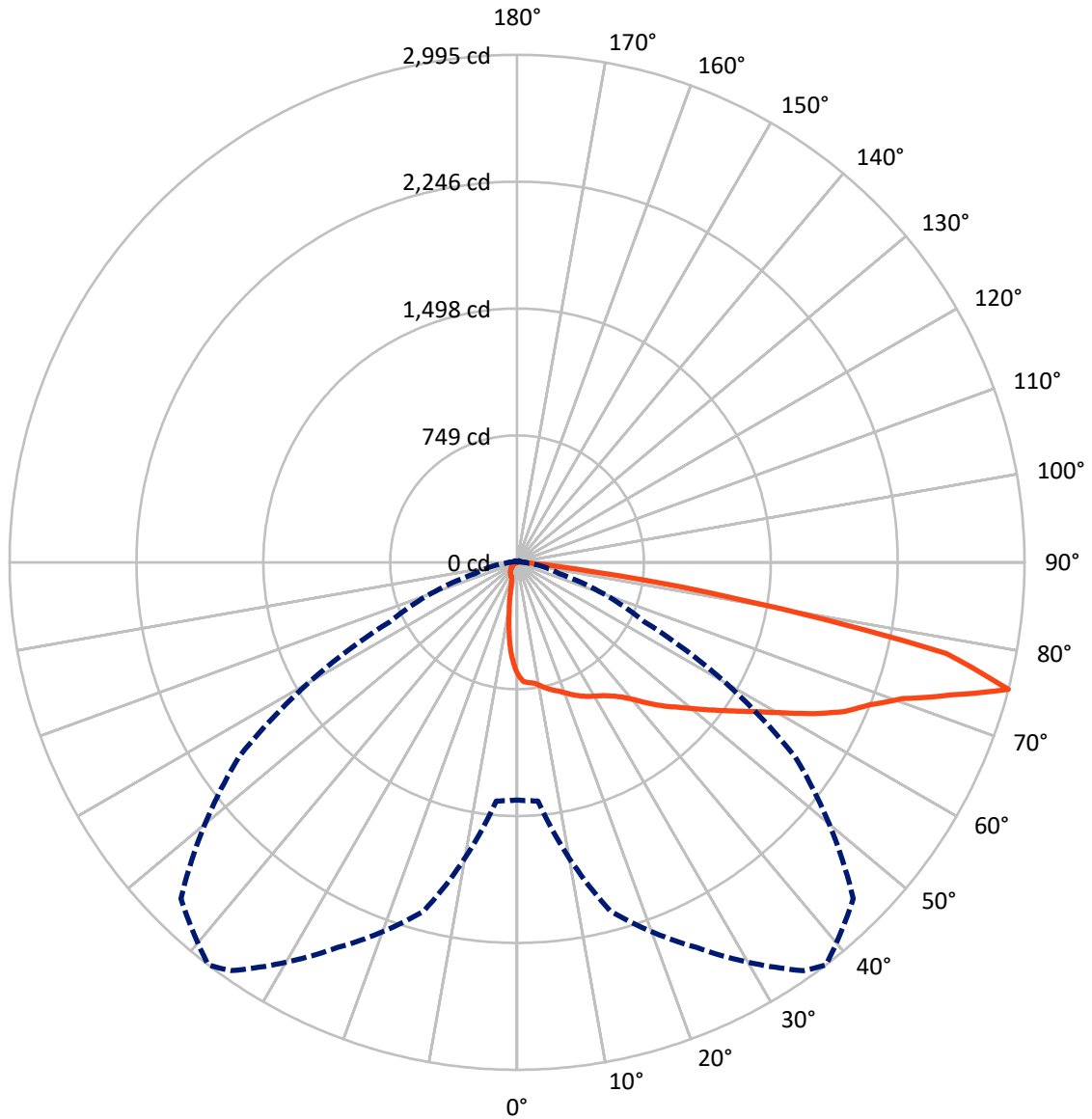
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc
 Type IV - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 37.5-Deg Lateral - - - Horizontal Cone Through 75-Deg Vertical

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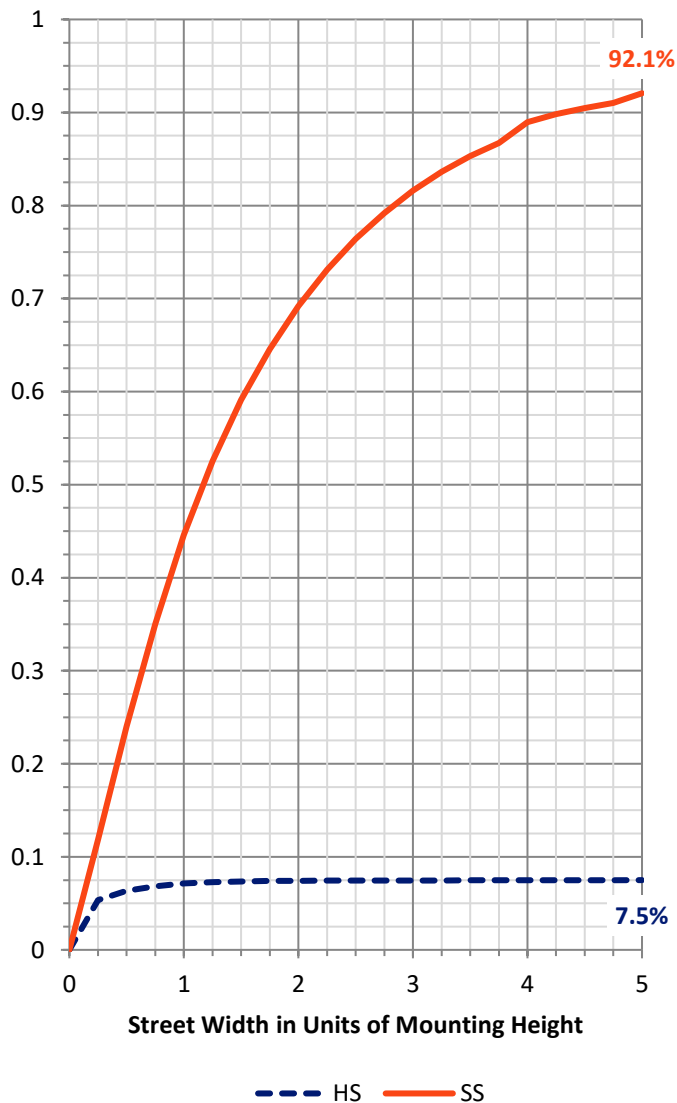
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 297.9 | 0.0 | 297.9 |
| | % Fixture | 7.6 | 0.0 | 7.6 |
| Street Side | Lumens | 3644.1 | 0.0 | 3644.1 |
| | % Fixture | 92.4 | 0.0 | 92.4 |
| Total | Lumens | 3942.0 | 0.0 | 3942.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 56.2 | 1.4 |
| 10°-20° | 142.4 | 3.6 |
| 20°-30° | 233.0 | 5.9 |
| 30°-40° | 346.2 | 8.8 |
| 40°-50° | 518.3 | 13.1 |
| 50°-60° | 744.7 | 18.9 |
| 60°-70° | 998.1 | 25.3 |
| 70°-80° | 808.5 | 20.5 |
| 80°-90° | 94.5 | 2.4 |
| 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° | 3942.0 | 100.0 |
| 0°-180° | 3942.0 | 100.0 |

Coefficient of Utilization

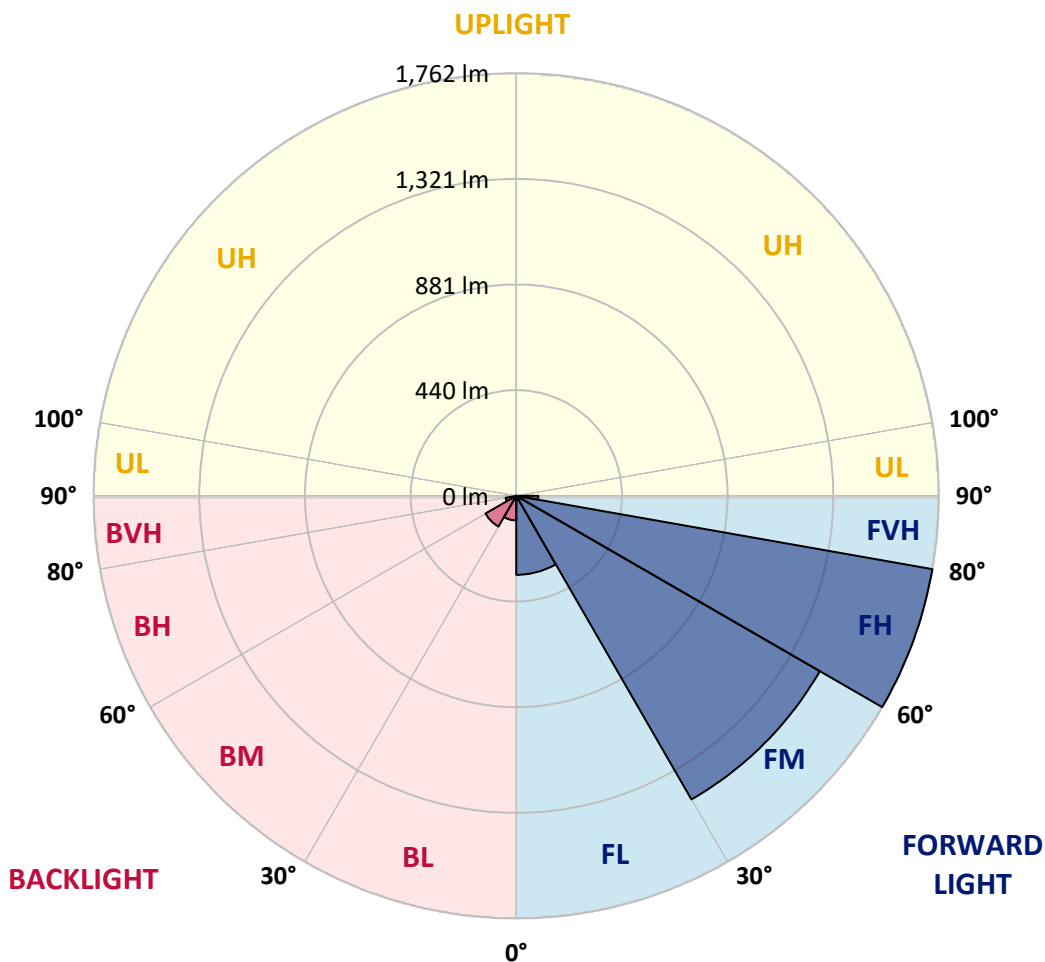


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 329.2 | 8.4 | | | |
| FM (30°-60°) | 1461.3 | 37.1 | | | |
| FH (60°-80°) | 1761.6 | 44.7 | | | G1/1800 |
| FVH (80°-90°) | 91.8 | 2.3 | | | G1/100 |
| BL (0°-30°) | 102.3 | 2.6 | B0/110 | | |
| BM (30°-60°) | 148.0 | 3.8 | B0/220 | | |
| BH (60°-80°) | 45.0 | 1.1 | B0/110 | | G0/110 |
| BVH (80°-90°) | 2.7 | 0.1 | | | 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 IV Medium





REPORT NUMBER: P459710

CATALOG NUMBER: GLEON-SA5A-AMB-U-SL4-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 37.5° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 |
| 2.5° | 713.5 | 711.3 | 711.3 | 706.9 | 704.7 | 704.7 | 695.9 | 693.7 | 684.9 | 676.1 | 665.1 |
| 5° | 715.7 | 715.7 | 713.5 | 715.7 | 713.5 | 713.5 | 709.1 | 706.9 | 698.1 | 680.5 | 660.7 |
| 7.5° | 729.0 | 726.8 | 724.6 | 724.6 | 720.1 | 720.1 | 709.1 | 704.7 | 695.9 | 684.9 | 656.3 |
| 10° | 729.0 | 729.0 | 733.4 | 737.8 | 737.8 | 737.8 | 726.8 | 713.5 | 700.3 | 689.3 | 656.3 |
| 12.5° | 726.8 | 726.8 | 733.4 | 748.8 | 759.8 | 762.0 | 755.4 | 737.8 | 715.7 | 695.9 | 665.1 |
| 15° | 724.6 | 726.8 | 735.6 | 757.6 | 777.4 | 781.8 | 779.6 | 766.4 | 737.8 | 709.1 | 676.1 |
| 17.5° | 729.0 | 733.4 | 744.4 | 775.2 | 797.2 | 799.4 | 801.6 | 792.8 | 762.0 | 726.8 | 693.7 |
| 20° | 735.6 | 737.8 | 762.0 | 799.4 | 821.5 | 823.7 | 821.5 | 808.2 | 781.8 | 748.8 | 713.5 |
| 22.5° | 746.6 | 751.0 | 781.8 | 823.7 | 847.9 | 850.1 | 843.5 | 821.5 | 792.8 | 766.4 | 735.6 |
| 25° | 768.6 | 773.0 | 810.4 | 852.3 | 869.9 | 874.3 | 867.7 | 841.3 | 803.8 | 786.2 | 759.8 |
| 27.5° | 795.0 | 801.6 | 841.3 | 880.9 | 891.9 | 896.3 | 889.7 | 858.9 | 819.2 | 812.6 | 790.6 |
| 30° | 834.7 | 839.1 | 876.5 | 909.5 | 913.9 | 916.1 | 911.7 | 876.5 | 841.3 | 841.3 | 821.5 |
| 32.5° | 883.1 | 889.7 | 913.9 | 938.2 | 936.0 | 938.2 | 936.0 | 898.5 | 867.7 | 885.3 | 858.9 |
| 35° | 940.4 | 933.8 | 962.4 | 973.4 | 964.6 | 969.0 | 971.2 | 933.8 | 907.3 | 942.6 | 909.5 |
| 37.5° | 984.4 | 984.4 | 999.8 | 1010.8 | 1004.2 | 1008.6 | 1015.3 | 980.0 | 962.4 | 1024.1 | 986.6 |
| 40° | 1021.9 | 1021.9 | 1032.9 | 1054.9 | 1057.1 | 1065.9 | 1079.1 | 1037.3 | 1037.3 | 1118.8 | 1076.9 |
| 42.5° | 1050.5 | 1054.9 | 1063.7 | 1092.3 | 1121.0 | 1136.4 | 1149.6 | 1107.7 | 1127.6 | 1239.9 | 1195.8 |
| 45° | 1079.1 | 1083.5 | 1087.9 | 1129.8 | 1187.0 | 1209.1 | 1235.5 | 1195.8 | 1231.1 | 1367.6 | 1319.2 |
| 47.5° | 1114.4 | 1114.4 | 1112.2 | 1178.2 | 1248.7 | 1277.3 | 1323.6 | 1290.5 | 1354.4 | 1524.0 | 1449.1 |
| 50° | 1158.4 | 1154.0 | 1134.2 | 1228.9 | 1323.6 | 1358.8 | 1429.3 | 1396.2 | 1493.1 | 1686.9 | 1546.0 |
| 52.5° | 1209.1 | 1198.0 | 1167.2 | 1281.7 | 1405.1 | 1449.1 | 1539.4 | 1517.4 | 1638.5 | 1816.9 | 1601.1 |
| 55° | 1272.9 | 1255.3 | 1213.5 | 1345.6 | 1504.2 | 1548.2 | 1653.9 | 1667.1 | 1777.2 | 1891.8 | 1658.3 |
| 57.5° | 1354.4 | 1321.4 | 1275.1 | 1424.9 | 1618.7 | 1660.5 | 1783.8 | 1812.5 | 1869.7 | 1964.4 | 1731.0 |
| 60° | 1435.9 | 1400.7 | 1358.8 | 1532.8 | 1744.2 | 1801.5 | 1922.6 | 1933.6 | 1944.6 | 2065.7 | 1810.3 |
| 62.5° | 1508.6 | 1488.7 | 1464.5 | 1653.9 | 1916.0 | 1966.6 | 2041.5 | 2026.1 | 2039.3 | 2184.7 | 1874.1 |
| 65° | 1601.1 | 1581.2 | 1576.8 | 1792.7 | 2079.0 | 2123.0 | 2131.8 | 2138.4 | 2186.9 | 2301.4 | 1907.2 |
| 67.5° | 1680.3 | 1673.7 | 1713.4 | 1957.8 | 2226.5 | 2244.1 | 2277.2 | 2314.6 | 2341.0 | 2354.2 | 1686.9 |
| 70° | 1792.7 | 1781.6 | 1869.7 | 2123.0 | 2374.1 | 2411.5 | 2528.2 | 2565.7 | 2382.9 | 1929.2 | 1032.9 |
| 72.5° | 1803.7 | 1823.5 | 2063.5 | 2294.8 | 2594.3 | 2675.8 | 2821.1 | 2620.7 | 1852.1 | 1035.1 | 321.5 |
| 75° | 1402.9 | 1413.9 | 2131.8 | 2508.4 | 2942.2 | 2995.1 | 2805.7 | 2004.1 | 828.1 | 255.5 | 72.7 |
| 77.5° | 781.8 | 823.7 | 1424.9 | 2327.8 | 2673.6 | 2589.9 | 1918.2 | 885.3 | 213.6 | 57.3 | 37.4 |
| 80° | 572.6 | 592.4 | 687.1 | 1332.4 | 1513.0 | 1330.2 | 799.4 | 336.9 | 116.7 | 39.6 | 26.4 |
| 82.5° | 169.6 | 182.8 | 354.6 | 429.4 | 535.2 | 425.0 | 240.0 | 257.7 | 74.9 | 28.6 | 22.0 |
| 85° | 46.2 | 48.5 | 121.1 | 169.6 | 154.2 | 99.1 | 88.1 | 222.4 | 30.8 | 19.8 | 17.6 |
| 87.5° | 22.0 | 22.0 | 37.4 | 74.9 | 63.9 | 52.9 | 72.7 | 129.9 | 6.6 | 6.6 | 4.4 |
| 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: P459710

CATALOG NUMBER: GLEON-SA5A-AMB-U-SL4-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 |
| 2.5° | 658.5 | 654.1 | 636.5 | 627.7 | 618.8 | 603.4 | 594.6 | 588.0 | 585.8 | 581.4 | 583.6 |
| 5° | 647.5 | 632.1 | 603.4 | 579.2 | 550.6 | 519.7 | 502.1 | 482.3 | 462.5 | 458.1 | 455.9 |
| 7.5° | 638.7 | 616.6 | 572.6 | 526.3 | 477.9 | 425.0 | 376.6 | 345.8 | 314.9 | 310.5 | 308.3 |
| 10° | 634.3 | 603.4 | 539.6 | 471.3 | 392.0 | 319.3 | 266.5 | 231.2 | 209.2 | 198.2 | 193.8 |
| 12.5° | 634.3 | 596.8 | 513.1 | 416.2 | 314.9 | 235.6 | 182.8 | 147.6 | 132.1 | 125.5 | 123.3 |
| 15° | 638.7 | 592.4 | 482.3 | 352.4 | 246.7 | 167.4 | 127.7 | 110.1 | 103.5 | 101.3 | 103.5 |
| 17.5° | 649.7 | 592.4 | 453.7 | 297.3 | 187.2 | 123.3 | 101.3 | 99.1 | 96.9 | 96.9 | 96.9 |
| 20° | 665.1 | 596.8 | 422.8 | 248.9 | 138.7 | 101.3 | 94.7 | 94.7 | 94.7 | 94.7 | 94.7 |
| 22.5° | 682.7 | 599.0 | 387.6 | 202.6 | 112.3 | 92.5 | 90.3 | 90.3 | 90.3 | 90.3 | 90.3 |
| 25° | 700.3 | 603.4 | 350.2 | 158.6 | 92.5 | 88.1 | 85.9 | 88.1 | 88.1 | 88.1 | 88.1 |
| 27.5° | 722.3 | 607.8 | 312.7 | 125.5 | 85.9 | 83.7 | 83.7 | 83.7 | 83.7 | 83.7 | 83.7 |
| 30° | 742.2 | 607.8 | 277.5 | 103.5 | 81.5 | 79.3 | 79.3 | 79.3 | 79.3 | 79.3 | 79.3 |
| 32.5° | 766.4 | 605.6 | 240.0 | 85.9 | 77.1 | 74.9 | 72.7 | 74.9 | 74.9 | 74.9 | 72.7 |
| 35° | 801.6 | 605.6 | 198.2 | 79.3 | 72.7 | 70.5 | 68.3 | 68.3 | 68.3 | 68.3 | 68.3 |
| 37.5° | 847.9 | 614.4 | 156.4 | 72.7 | 66.1 | 63.9 | 63.9 | 63.9 | 61.7 | 61.7 | 61.7 |
| 40° | 916.1 | 629.9 | 125.5 | 68.3 | 61.7 | 59.5 | 57.3 | 57.3 | 55.1 | 52.9 | 52.9 |
| 42.5° | 997.6 | 647.5 | 103.5 | 63.9 | 57.3 | 55.1 | 52.9 | 50.7 | 48.5 | 46.2 | 46.2 |
| 45° | 1079.1 | 660.7 | 81.5 | 59.5 | 52.9 | 50.7 | 48.5 | 46.2 | 41.8 | 39.6 | 37.4 |
| 47.5° | 1165.0 | 660.7 | 66.1 | 55.1 | 50.7 | 46.2 | 44.0 | 39.6 | 35.2 | 30.8 | 30.8 |
| 50° | 1215.7 | 636.5 | 59.5 | 50.7 | 46.2 | 41.8 | 39.6 | 33.0 | 28.6 | 24.2 | 24.2 |
| 52.5° | 1244.3 | 603.4 | 55.1 | 46.2 | 44.0 | 39.6 | 33.0 | 28.6 | 22.0 | 17.6 | 17.6 |
| 55° | 1268.5 | 588.0 | 50.7 | 44.0 | 39.6 | 35.2 | 28.6 | 22.0 | 15.4 | 13.2 | 13.2 |
| 57.5° | 1299.3 | 563.8 | 46.2 | 39.6 | 35.2 | 30.8 | 24.2 | 17.6 | 11.0 | 8.8 | 8.8 |
| 60° | 1325.8 | 530.7 | 41.8 | 37.4 | 33.0 | 26.4 | 19.8 | 13.2 | 6.6 | 4.4 | 4.4 |
| 62.5° | 1339.0 | 480.1 | 37.4 | 33.0 | 28.6 | 22.0 | 15.4 | 8.8 | 4.4 | 2.2 | 2.2 |
| 65° | 1301.5 | 403.0 | 35.2 | 28.6 | 24.2 | 17.6 | 11.0 | 4.4 | 2.2 | 0.0 | 0.0 |
| 67.5° | 1063.7 | 259.9 | 28.6 | 24.2 | 19.8 | 13.2 | 8.8 | 4.4 | 2.2 | 0.0 | 0.0 |
| 70° | 546.2 | 110.1 | 24.2 | 19.8 | 17.6 | 11.0 | 6.6 | 2.2 | 0.0 | 0.0 | 0.0 |
| 72.5° | 143.1 | 39.6 | 19.8 | 17.6 | 15.4 | 11.0 | 4.4 | 2.2 | 0.0 | 0.0 | 0.0 |
| 75° | 44.0 | 26.4 | 15.4 | 13.2 | 13.2 | 8.8 | 4.4 | 2.2 | 0.0 | 0.0 | 0.0 |
| 77.5° | 30.8 | 19.8 | 13.2 | 11.0 | 11.0 | 8.8 | 4.4 | 2.2 | 0.0 | 0.0 | 0.0 |
| 80° | 24.2 | 17.6 | 11.0 | 8.8 | 11.0 | 11.0 | 4.4 | 2.2 | 0.0 | 0.0 | 0.0 |
| 82.5° | 19.8 | 15.4 | 8.8 | 8.8 | 11.0 | 11.0 | 6.6 | 2.2 | 0.0 | 0.0 | 0.0 |
| 85° | 15.4 | 11.0 | 8.8 | 8.8 | 11.0 | 8.8 | 4.4 | 2.2 | 0.0 | 0.0 | 0.0 |
| 87.5° | 4.4 | 4.4 | 2.2 | 2.2 | 2.2 | 4.4 | 4.4 | 2.2 | 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-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

STREETWORKS

Report Number: SP1-2005-791-1-R5

Test Date: 05/26/2020

Luminaire Tested: Light Squares Family Amber Color

Data in this report applies to families of products including Light Squares Family Amber Color

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2005-791-1-R5
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 02/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: STREETWORKS
 Catalog Number: **Light Squares Family Amber Color**
 Description: Light Squares Family Amber Color

Spectral Parameters

CCT (K): 1525
 CIE u': 0.3546
 CIE v': 0.5459
 Duv: 0.0116
 CIE x: 0.5918
 CIE y: 0.4049
 CIE z: 0.0033
 Peak Wavelength (nm): 597
 Dominant Wavelength (nm): 593
 Purity: 99.6
 Rf: 8.4
 Rg: 12.9

| | | | |
|-----------|--------|------|--------|
| CRI (Ra): | -20.7 | | |
| R1: | -32.5 | R9: | -382.8 |
| R2: | 55.0 | R10: | 34.9 |
| R3: | 15.4 | R11: | -92.4 |
| R4: | -67.7 | R12: | 2.7 |
| R5: | -38.7 | R13: | -12.7 |
| R6: | 47.4 | R14: | 45.0 |
| R7: | -9.2 | | |
| R8: | -135.0 | | |

Test Conditions
 Stabilization Time: 65M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.6/42%
 Sphere Temperature (°C): 25.2



REPORT NUMBER: SP1-2005-791-1-R5

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 1/17/2020 | 7/17/2020 |
| Power Meter | XITRON 2801 IN0071 | 12/3/2019 | 12/3/2020 |
| AC Power Source | CHROMA 61603 IN0063 | 12/3/2019 | 12/3/2020 |
| DC Power Source | AGILENT E3634A IN0208 | 12/3/2019 | 12/3/2020 |
| Sphere Thermometer | ONSET IN0085 | 12/3/2019 | 12/3/2020 |
| Room Thermometer | ONSET IN0046 | 12/3/2019 | 12/3/2020 |

REPORT NUMBER: SP1-2005-791-1-R5

CIE 1931 Chromaticity Diagram



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



Point lies outside the range

REPORT NUMBER: SP1-2005-791-1-R5

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 | 818 | NR | 490 | 224 | NR | 620 | 13485 | NR | 750 | 666 | NR | 880 | 467 | NR |
| 365 | 765 | NR | 495 | 377 | NR | 625 | 6667 | NR | 755 | 63 | NR | 885 | 232 | NR |
| 370 | 529 | NR | 500 | 342 | NR | 630 | 3617 | NR | 760 | 170 | NR | 890 | 396 | NR |
| 375 | 859 | NR | 505 | 327 | NR | 635 | 2624 | NR | 765 | 772 | NR | 895 | 250 | NR |
| 380 | 838 | NR | 510 | 403 | NR | 640 | 2321 | NR | 770 | 684 | NR | 900 | 194 | NR |
| 385 | 931 | NR | 515 | 396 | NR | 645 | 2019 | NR | 775 | 1108 | NR | 905 | 303 | NR |
| 390 | 814 | NR | 520 | 478 | NR | 650 | 1694 | NR | 780 | 562 | NR | 910 | 335 | NR |
| 395 | 695 | NR | 525 | 468 | NR | 655 | 1437 | NR | 785 | 582 | NR | 915 | 255 | NR |
| 400 | 338 | NR | 530 | 527 | NR | 660 | 1541 | NR | 790 | 675 | NR | 920 | 182 | NR |
| 405 | 555 | NR | 535 | 574 | NR | 665 | 1318 | NR | 795 | 578 | NR | 925 | 228 | NR |
| 410 | 491 | NR | 540 | 823 | NR | 670 | 1092 | NR | 800 | 147 | NR | 930 | 239 | NR |
| 415 | 563 | NR | 545 | 1340 | NR | 675 | 936 | NR | 805 | 559 | NR | 935 | 148 | NR |
| 420 | 360 | NR | 550 | 2313 | NR | 680 | 727 | NR | 810 | 727 | NR | 940 | 308 | NR |
| 425 | 598 | NR | 555 | 4294 | NR | 685 | 833 | NR | 815 | 444 | NR | 945 | 313 | NR |
| 430 | 464 | NR | 560 | 8017 | NR | 690 | 1005 | NR | 820 | 479 | NR | 950 | 345 | NR |
| 435 | 440 | NR | 565 | 14123 | NR | 695 | 1012 | NR | 825 | 224 | NR | 955 | 229 | NR |
| 440 | 368 | NR | 570 | 25560 | NR | 700 | 962 | NR | 830 | 333 | NR | 960 | 363 | NR |
| 445 | 428 | NR | 575 | 45938 | NR | 705 | 994 | NR | 835 | 379 | NR | 965 | 412 | NR |
| 450 | 279 | NR | 580 | 84007 | NR | 710 | 1014 | NR | 840 | 285 | NR | 970 | 272 | NR |
| 455 | 407 | NR | 585 | 155807 | NR | 715 | 1458 | NR | 845 | 333 | NR | 975 | 345 | NR |
| 460 | 365 | NR | 590 | 275552 | NR | 720 | 1076 | NR | 850 | 385 | NR | 980 | 449 | NR |
| 465 | 328 | NR | 595 | 421402 | NR | 725 | 1113 | NR | 855 | 558 | NR | 985 | 501 | NR |
| 470 | 249 | NR | 600 | 396839 | NR | 730 | 1144 | NR | 860 | 663 | NR | 990 | 343 | NR |
| 475 | 277 | NR | 605 | 193475 | NR | 735 | 799 | NR | 865 | 591 | NR | 995 | 152 | NR |
| 480 | 229 | NR | 610 | 75719 | NR | 740 | 692 | NR | 870 | 2634 | NR | 1000 | 132 | NR |
| 485 | 185 | NR | 615 | 30466 | NR | 745 | 414 | NR | 875 | 2146 | NR | | | |

REPORT NUMBER: SP1-2005-791-1-R5

Scotopic Flux vs. Wavelength



Scotopic Lumens: 939.9

S/P: 0.23

| 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 | 818 | NR | 490 | 224 | NR | 620 | 13485 | NR | 750 | 666 | NR | 880 | 467 | NR |
| 365 | 765 | NR | 495 | 377 | NR | 625 | 6667 | NR | 755 | 63 | NR | 885 | 232 | NR |
| 370 | 529 | NR | 500 | 342 | NR | 630 | 3617 | NR | 760 | 170 | NR | 890 | 396 | NR |
| 375 | 859 | NR | 505 | 327 | NR | 635 | 2624 | NR | 765 | 772 | NR | 895 | 250 | NR |
| 380 | 838 | NR | 510 | 403 | NR | 640 | 2321 | NR | 770 | 684 | NR | 900 | 194 | NR |
| 385 | 931 | NR | 515 | 396 | NR | 645 | 2019 | NR | 775 | 1108 | NR | 905 | 303 | NR |
| 390 | 814 | NR | 520 | 478 | NR | 650 | 1694 | NR | 780 | 562 | NR | 910 | 335 | NR |
| 395 | 695 | NR | 525 | 468 | NR | 655 | 1437 | NR | 785 | 582 | NR | 915 | 255 | NR |
| 400 | 338 | NR | 530 | 527 | NR | 660 | 1541 | NR | 790 | 675 | NR | 920 | 182 | NR |
| 405 | 555 | NR | 535 | 574 | NR | 665 | 1318 | NR | 795 | 578 | NR | 925 | 228 | NR |
| 410 | 491 | NR | 540 | 823 | NR | 670 | 1092 | NR | 800 | 147 | NR | 930 | 239 | NR |
| 415 | 563 | NR | 545 | 1340 | NR | 675 | 936 | NR | 805 | 559 | NR | 935 | 148 | NR |
| 420 | 360 | NR | 550 | 2313 | NR | 680 | 727 | NR | 810 | 727 | NR | 940 | 308 | NR |
| 425 | 598 | NR | 555 | 4294 | NR | 685 | 833 | NR | 815 | 444 | NR | 945 | 313 | NR |
| 430 | 464 | NR | 560 | 8017 | NR | 690 | 1005 | NR | 820 | 479 | NR | 950 | 345 | NR |
| 435 | 440 | NR | 565 | 14123 | NR | 695 | 1012 | NR | 825 | 224 | NR | 955 | 229 | NR |
| 440 | 368 | NR | 570 | 25560 | NR | 700 | 962 | NR | 830 | 333 | NR | 960 | 363 | NR |
| 445 | 428 | NR | 575 | 45938 | NR | 705 | 994 | NR | 835 | 379 | NR | 965 | 412 | NR |
| 450 | 279 | NR | 580 | 84007 | NR | 710 | 1014 | NR | 840 | 285 | NR | 970 | 272 | NR |
| 455 | 407 | NR | 585 | 155807 | NR | 715 | 1458 | NR | 845 | 333 | NR | 975 | 345 | NR |
| 460 | 365 | NR | 590 | 275552 | NR | 720 | 1076 | NR | 850 | 385 | NR | 980 | 449 | NR |
| 465 | 328 | NR | 595 | 421402 | NR | 725 | 1113 | NR | 855 | 558 | NR | 985 | 501 | NR |
| 470 | 249 | NR | 600 | 396839 | NR | 730 | 1144 | NR | 860 | 663 | NR | 990 | 343 | NR |
| 475 | 277 | NR | 605 | 193475 | NR | 735 | 799 | NR | 865 | 591 | NR | 995 | 152 | NR |
| 480 | 229 | NR | 610 | 75719 | NR | 740 | 692 | NR | 870 | 2634 | NR | 1000 | 132 | NR |
| 485 | 185 | NR | 615 | 30466 | NR | 745 | 414 | NR | 875 | 2146 | NR | | | |

REPORT NUMBER: SP1-2005-791-1-R5

Melanopic Flux vs. Wavelength



Melanopic Lumens: 115.1 M/P: 0.03

| 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 | 818 | NR | 490 | 224 | NR | 620 | 13485 | NR | 750 | 666 | NR | 880 | 467 | NR |
| 365 | 765 | NR | 495 | 377 | NR | 625 | 6667 | NR | 755 | 63 | NR | 885 | 232 | NR |
| 370 | 529 | NR | 500 | 342 | NR | 630 | 3617 | NR | 760 | 170 | NR | 890 | 396 | NR |
| 375 | 859 | NR | 505 | 327 | NR | 635 | 2624 | NR | 765 | 772 | NR | 895 | 250 | NR |
| 380 | 838 | NR | 510 | 403 | NR | 640 | 2321 | NR | 770 | 684 | NR | 900 | 194 | NR |
| 385 | 931 | NR | 515 | 396 | NR | 645 | 2019 | NR | 775 | 1108 | NR | 905 | 303 | NR |
| 390 | 814 | NR | 520 | 478 | NR | 650 | 1694 | NR | 780 | 562 | NR | 910 | 335 | NR |
| 395 | 695 | NR | 525 | 468 | NR | 655 | 1437 | NR | 785 | 582 | NR | 915 | 255 | NR |
| 400 | 338 | NR | 530 | 527 | NR | 660 | 1541 | NR | 790 | 675 | NR | 920 | 182 | NR |
| 405 | 555 | NR | 535 | 574 | NR | 665 | 1318 | NR | 795 | 578 | NR | 925 | 228 | NR |
| 410 | 491 | NR | 540 | 823 | NR | 670 | 1092 | NR | 800 | 147 | NR | 930 | 239 | NR |
| 415 | 563 | NR | 545 | 1340 | NR | 675 | 936 | NR | 805 | 559 | NR | 935 | 148 | NR |
| 420 | 360 | NR | 550 | 2313 | NR | 680 | 727 | NR | 810 | 727 | NR | 940 | 308 | NR |
| 425 | 598 | NR | 555 | 4294 | NR | 685 | 833 | NR | 815 | 444 | NR | 945 | 313 | NR |
| 430 | 464 | NR | 560 | 8017 | NR | 690 | 1005 | NR | 820 | 479 | NR | 950 | 345 | NR |
| 435 | 440 | NR | 565 | 14123 | NR | 695 | 1012 | NR | 825 | 224 | NR | 955 | 229 | NR |
| 440 | 368 | NR | 570 | 25560 | NR | 700 | 962 | NR | 830 | 333 | NR | 960 | 363 | NR |
| 445 | 428 | NR | 575 | 45938 | NR | 705 | 994 | NR | 835 | 379 | NR | 965 | 412 | NR |
| 450 | 279 | NR | 580 | 84007 | NR | 710 | 1014 | NR | 840 | 285 | NR | 970 | 272 | NR |
| 455 | 407 | NR | 585 | 155807 | NR | 715 | 1458 | NR | 845 | 333 | NR | 975 | 345 | NR |
| 460 | 365 | NR | 590 | 275552 | NR | 720 | 1076 | NR | 850 | 385 | NR | 980 | 449 | NR |
| 465 | 328 | NR | 595 | 421402 | NR | 725 | 1113 | NR | 855 | 558 | NR | 985 | 501 | NR |
| 470 | 249 | NR | 600 | 396839 | NR | 730 | 1144 | NR | 860 | 663 | NR | 990 | 343 | NR |
| 475 | 277 | NR | 605 | 193475 | NR | 735 | 799 | NR | 865 | 591 | NR | 995 | 152 | NR |
| 480 | 229 | NR | 610 | 75719 | NR | 740 | 692 | NR | 870 | 2634 | NR | 1000 | 132 | NR |
| 485 | 185 | NR | 615 | 30466 | NR | 745 | 414 | NR | 875 | 2146 | NR | | | |

REPORT NUMBER: SP1-2005-791-1-R5

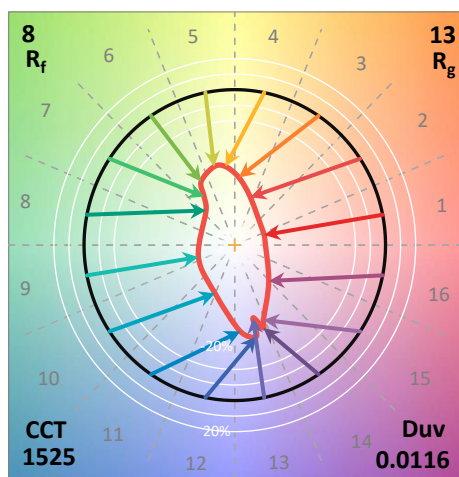
TM-30-18

Summary

$R_f = 8.4$
 $R_g = 12.9$
 CIE $R_a = -20.7$
 $R_9 = -382.8$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 90 | CES26 = 15 | CES51 = 20 | CES76 = 12 |
| CES02 = 69 | CES27 = 67 | CES52 = 2 | CES77 = 33 |
| CES03 = 31 | CES28 = 58 | CES53 = 0 | CES78 = 19 |
| CES04 = 77 | CES29 = 32 | CES54 = 14 | CES79 = 47 |
| CES05 = 52 | CES30 = 61 | CES55 = 10 | CES80 = 37 |
| CES06 = 56 | CES31 = 36 | CES56 = 0 | CES81 = 4 |
| CES07 = 41 | CES32 = 24 | CES57 = 0 | CES82 = 72 |
| CES08 = 38 | CES33 = 64 | CES58 = 0 | CES83 = 58 |
| CES09 = 29 | CES34 = 25 | CES59 = 13 | CES84 = 61 |
| CES10 = 87 | CES35 = 53 | CES60 = 67 | CES85 = 21 |
| CES11 = 70 | CES36 = 88 | CES61 = 22 | CES86 = 0 |
| CES12 = 75 | CES37 = 31 | CES62 = 61 | CES87 = 17 |
| CES13 = 47 | CES38 = 86 | CES63 = 62 | CES88 = 5 |
| CES14 = 76 | CES39 = 88 | CES64 = 0 | CES89 = 1 |
| CES15 = 74 | CES40 = 74 | CES65 = 1 | CES90 = 5 |
| CES16 = 49 | CES41 = 91 | CES66 = 0 | CES91 = 54 |
| CES17 = 55 | CES42 = 2 | CES67 = 0 | CES92 = 0 |
| CES18 = 59 | CES43 = 3 | CES68 = 7 | CES93 = 3 |
| CES19 = 80 | CES44 = 98 | CES69 = 57 | CES94 = 0 |
| CES20 = 71 | CES45 = 3 | CES70 = 3 | CES95 = 0 |
| CES21 = 94 | CES46 = 11 | CES71 = 5 | CES96 = 2 |
| CES22 = 86 | CES47 = 83 | CES72 = 62 | CES97 = 1 |
| CES23 = 93 | CES48 = 0 | CES73 = 1 | CES98 = 0 |
| CES24 = 95 | CES49 = 7 | CES74 = 66 | CES99 = 0 |
| CES25 = 78 | CES50 = 10 | CES75 = 12 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)