

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P642818

Luminaire Tested: GWS-SA6D-760-U-SL3-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P642818
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-32)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA6D-760-U-SL3-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (96) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21138.3 lumens
Efficiency: N/A
Efficacy: 86.0 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G2

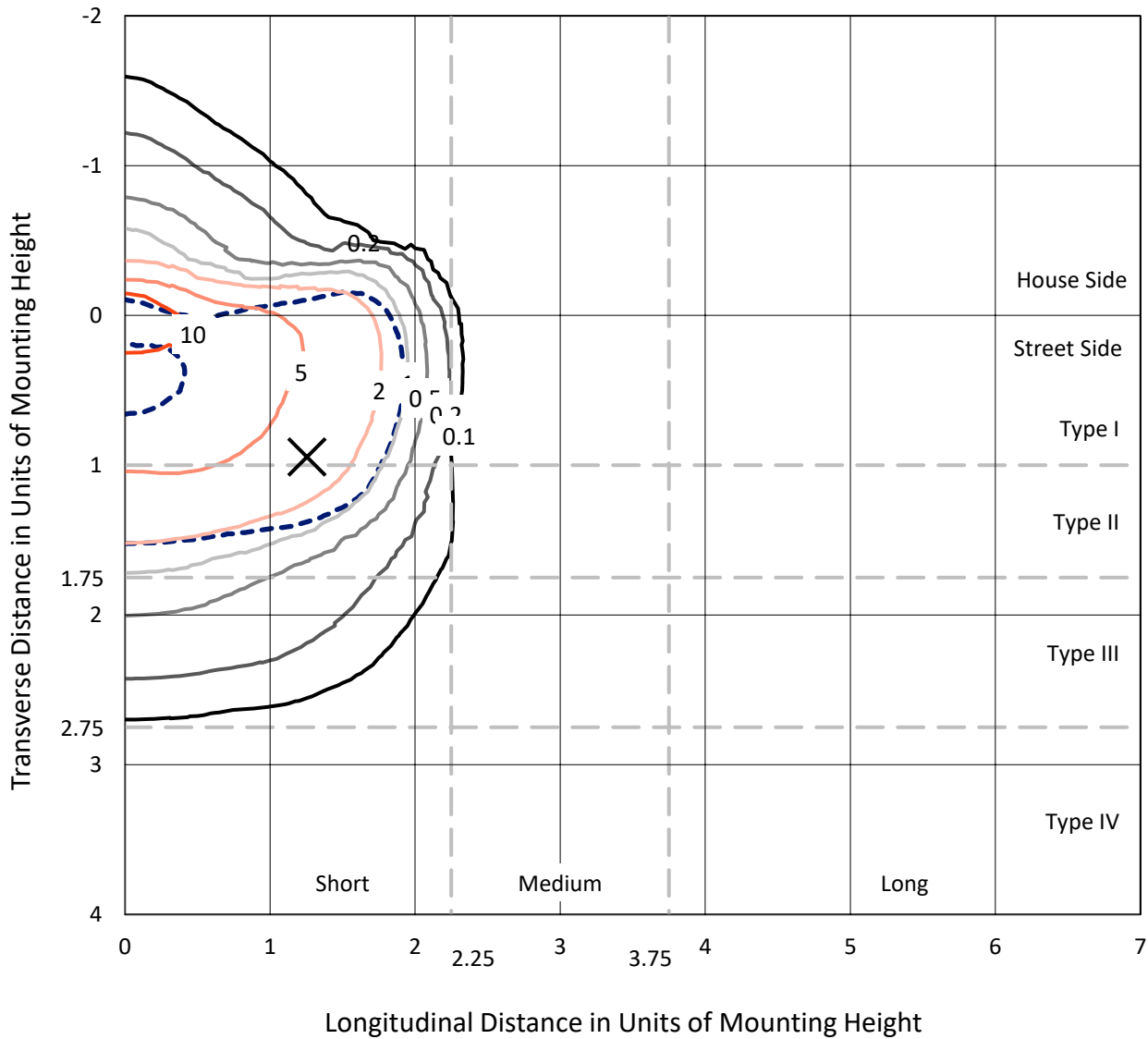
Input Watts (W): 245.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

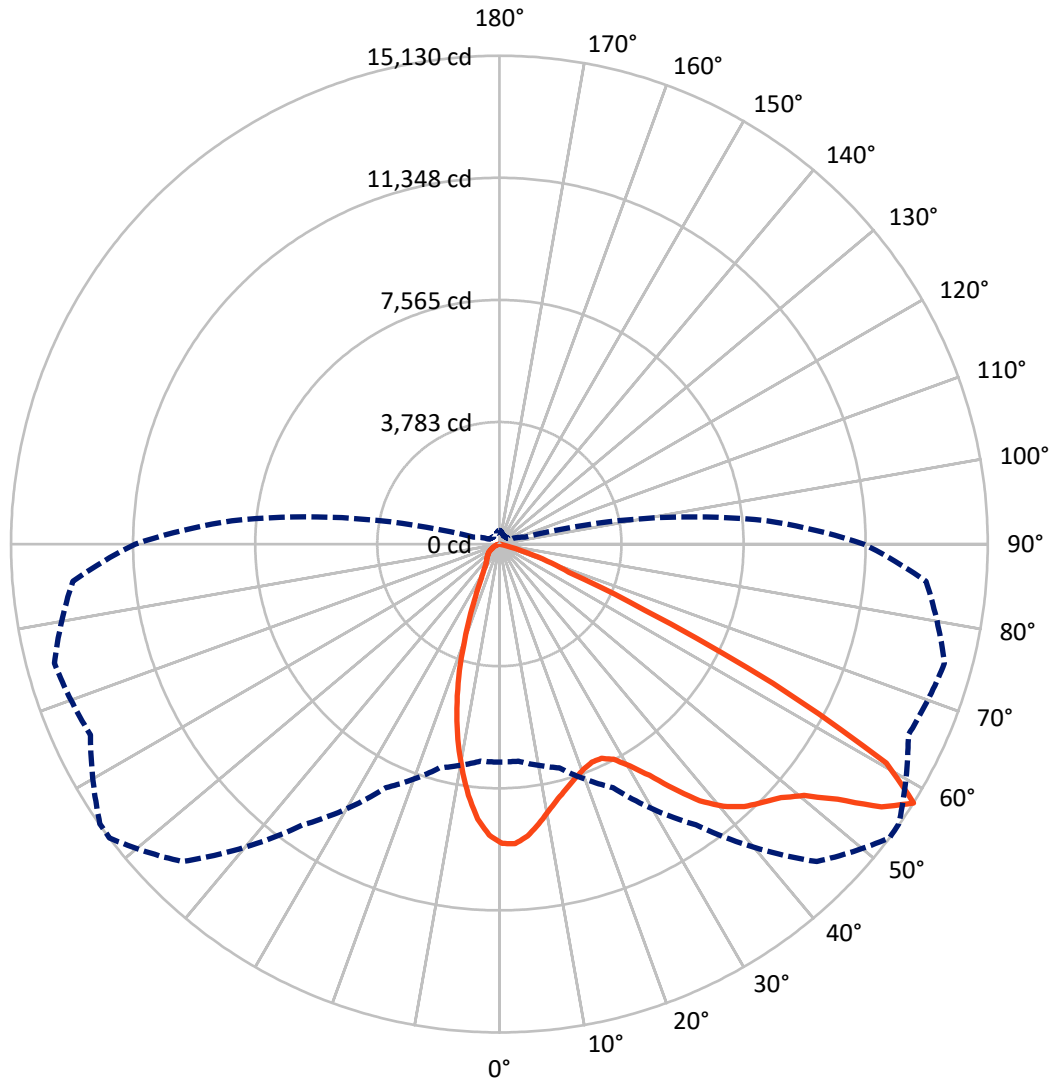
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 14.8 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 53-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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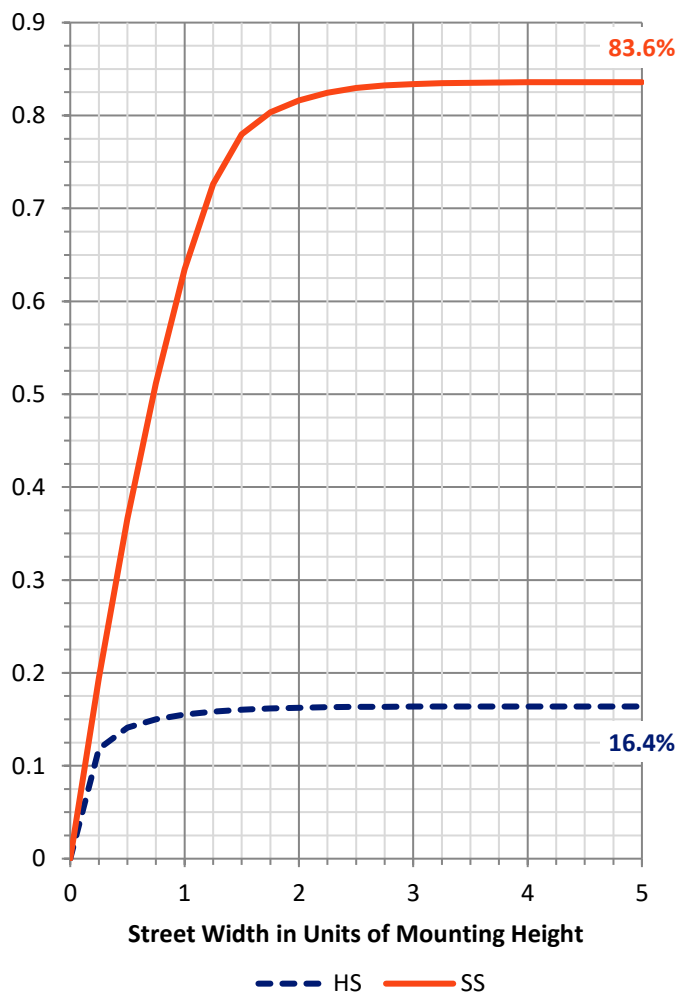
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3491.8 | 0.0 | 3491.8 |
| | % Fixture | 16.5 | 0.0 | 16.5 |
| Street Side | Lumens | 17646.5 | 0.0 | 17646.5 |
| | % Fixture | 83.5 | 0.0 | 83.5 |
| Total | Lumens | 21138.3 | 0.0 | 21138.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 793.3 | 3.8 |
| 10°-20° | 1741.7 | 8.2 |
| 20°-30° | 2268.9 | 10.7 |
| 30°-40° | 3291.1 | 15.6 |
| 40°-50° | 4748.8 | 22.5 |
| 50°-60° | 5743.3 | 27.2 |
| 60°-70° | 2340.7 | 11.1 |
| 70°-80° | 210.3 | 1.0 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 21138.3 | 100.0 |
| 0°-180° | 21138.3 | 100.0 |

Coefficient of Utilization



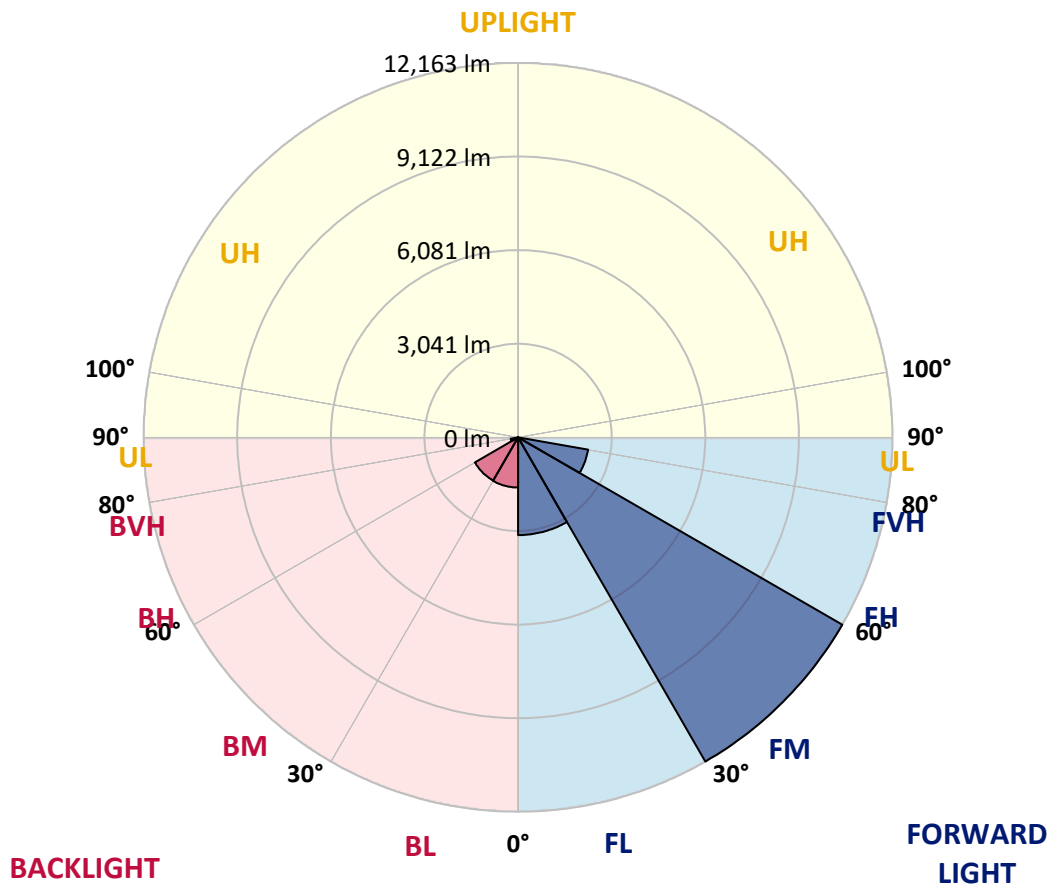
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3174.3 | 15.0 | | | |
| FM (30°-60°) | 12162.6 | 57.5 | | | |
| FH (60°-80°) | 2309.7 | 10.9 | | | G2/5000 |
| FVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL (0°-30°) | 1629.7 | 7.7 | B3/2500 | | |
| BM (30°-60°) | 1620.7 | 7.7 | B2/2500 | | |
| BH (60°-80°) | 241.4 | 1.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G2
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 53° | 55° | 65° | 75° | 85° |
|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 |
| 2.5° | 9142.9 | 9163.6 | 9199.9 | 9246.6 | 9277.6 | 9293.2 | 9293.2 | 9337.2 | 9308.7 | 9285.4 | 9259.5 |
| 5° | 8751.7 | 8772.4 | 8821.7 | 8896.8 | 8971.9 | 9026.3 | 9088.5 | 9135.2 | 9153.3 | 9153.3 | 9109.2 |
| 7.5° | 8199.9 | 8228.4 | 8259.5 | 8363.1 | 8526.3 | 8648.1 | 8754.3 | 8821.7 | 8920.1 | 8951.2 | 8889.0 |
| 10° | 7606.6 | 7635.1 | 7705.0 | 7847.5 | 8034.1 | 8215.4 | 8396.8 | 8482.3 | 8650.7 | 8738.8 | 8668.8 |
| 12.5° | 7104.0 | 7116.9 | 7210.2 | 7381.2 | 7619.5 | 7868.3 | 8088.5 | 8176.6 | 8414.9 | 8547.0 | 8464.1 |
| 15° | 6689.4 | 6697.2 | 6790.5 | 6979.6 | 7254.2 | 7559.9 | 7837.2 | 7927.8 | 8220.6 | 8420.1 | 8295.7 |
| 17.5° | 6376.0 | 6378.5 | 6458.9 | 6663.5 | 6951.1 | 7290.5 | 7619.5 | 7730.9 | 8109.2 | 8350.1 | 8163.6 |
| 20° | 6217.9 | 6210.1 | 6267.1 | 6445.9 | 6717.9 | 7057.3 | 7446.0 | 7583.3 | 8047.0 | 8339.8 | 8062.6 |
| 22.5° | 6220.5 | 6202.4 | 6225.7 | 6352.6 | 6583.2 | 6901.9 | 7337.1 | 7492.6 | 8052.2 | 8383.8 | 7977.1 |
| 25° | 6368.2 | 6342.3 | 6347.5 | 6414.8 | 6578.0 | 6868.2 | 7352.7 | 7518.5 | 8155.8 | 8531.5 | 7946.0 |
| 27.5° | 6616.9 | 6588.4 | 6588.4 | 6622.1 | 6710.2 | 6974.4 | 7547.0 | 7736.1 | 8433.0 | 8819.1 | 8010.7 |
| 30° | 6938.2 | 6909.7 | 6899.3 | 6933.0 | 7005.5 | 7249.1 | 7979.7 | 8176.6 | 8907.2 | 9290.6 | 8218.0 |
| 32.5° | 7306.0 | 7272.4 | 7290.5 | 7337.1 | 7407.1 | 7743.9 | 8536.7 | 8798.3 | 9500.5 | 9925.3 | 8591.1 |
| 35° | 7694.7 | 7666.2 | 7749.1 | 7850.1 | 7958.9 | 8430.5 | 9306.1 | 9534.1 | 10228.5 | 10715.5 | 9161.1 |
| 37.5° | 8065.2 | 8052.2 | 8225.8 | 8438.2 | 8663.6 | 9254.3 | 10088.6 | 10264.7 | 10852.8 | 11575.7 | 9858.0 |
| 40° | 8435.6 | 8433.0 | 8731.0 | 9104.1 | 9464.2 | 10075.6 | 10681.9 | 10826.9 | 11233.7 | 12244.1 | 10526.4 |
| 42.5° | 8850.2 | 8850.2 | 9262.1 | 9759.5 | 10238.8 | 10769.9 | 11117.1 | 11181.9 | 11404.7 | 12630.1 | 11029.0 |
| 45° | 9246.6 | 9269.9 | 9746.6 | 10324.3 | 10891.7 | 11311.4 | 11417.6 | 11422.8 | 11474.6 | 12858.1 | 11446.1 |
| 47.5° | 9560.0 | 9580.8 | 10150.7 | 10816.6 | 11428.0 | 11723.4 | 11738.9 | 11715.6 | 11658.6 | 13075.8 | 11767.4 |
| 50° | 9813.9 | 9845.0 | 10440.9 | 11145.6 | 11795.9 | 12119.7 | 12238.9 | 12215.6 | 12070.5 | 13308.9 | 11992.8 |
| 52.5° | 9938.3 | 9982.3 | 10542.0 | 11308.8 | 12205.2 | 12798.5 | 13130.2 | 13184.6 | 12687.1 | 13438.5 | 12207.8 |
| 55° | 8943.4 | 9008.2 | 9523.8 | 10573.0 | 12433.2 | 13847.8 | 14368.6 | 14358.2 | 13355.6 | 13824.5 | 12731.2 |
| 57.5° | 6754.2 | 6749.0 | 7176.5 | 8324.2 | 10619.7 | 13907.4 | 15130.3 | 15109.5 | 13979.9 | 14272.7 | 13267.5 |
| 60° | 4598.7 | 4567.6 | 4681.6 | 5236.0 | 7425.2 | 11329.6 | 13770.1 | 14049.9 | 13536.9 | 13184.6 | 11264.8 |
| 62.5° | 3785.2 | 3756.7 | 3720.4 | 3567.5 | 4264.5 | 7057.3 | 9513.4 | 9938.3 | 9870.9 | 9163.6 | 7065.1 |
| 65° | 3098.6 | 3121.9 | 3223.0 | 3158.2 | 2966.5 | 3619.3 | 4938.1 | 5189.4 | 4743.7 | 3992.4 | 2469.0 |
| 67.5° | 2285.1 | 2295.4 | 2427.6 | 2769.6 | 2665.9 | 2409.4 | 2323.9 | 2365.4 | 1386.1 | 637.3 | 411.9 |
| 70° | 1349.8 | 1357.6 | 1479.3 | 1937.9 | 2163.3 | 1849.8 | 1570.0 | 1546.7 | 549.2 | 171.0 | 186.5 |
| 72.5° | 764.3 | 748.7 | 772.1 | 922.3 | 1178.8 | 981.9 | 808.3 | 735.8 | 165.8 | 95.9 | 95.9 |
| 75° | 362.7 | 352.3 | 303.1 | 285.0 | 259.1 | 165.8 | 103.6 | 88.1 | 41.5 | 38.9 | 38.9 |
| 77.5° | 2.6 | 7.8 | 5.2 | 7.8 | 7.8 | 5.2 | 2.6 | 2.6 | 7.8 | 7.8 | 10.4 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 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 |



REPORT NUMBER: P642818

CATALOG NUMBER: GWS-SA6D-760-U-SL3-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 | 9272.5 |
| 2.5° | 9212.9 | 9135.2 | 9117.0 | 9111.8 | 9039.3 | 8961.6 | 8881.3 | 8850.2 | 8803.5 | 8775.0 | 8798.3 |
| 5° | 9039.3 | 8927.9 | 8829.4 | 8738.8 | 8578.1 | 8402.0 | 8249.1 | 8150.6 | 8057.4 | 7995.2 | 8010.7 |
| 7.5° | 8793.2 | 8648.1 | 8422.7 | 8192.1 | 7896.8 | 7632.5 | 7337.1 | 7155.8 | 6987.4 | 6894.1 | 6938.2 |
| 10° | 8531.5 | 8339.8 | 7979.7 | 7588.4 | 7124.7 | 6710.2 | 6287.9 | 5943.3 | 5743.8 | 5554.7 | 5575.4 |
| 12.5° | 8275.0 | 8021.1 | 7482.2 | 6888.9 | 6303.4 | 5692.0 | 5054.6 | 4577.9 | 4251.5 | 4015.7 | 3979.5 |
| 15° | 8036.7 | 7710.2 | 6997.7 | 6215.3 | 5417.4 | 4603.8 | 3790.3 | 3109.0 | 2730.7 | 2497.5 | 2482.0 |
| 17.5° | 7824.2 | 7420.0 | 6495.1 | 5510.6 | 4510.6 | 3469.1 | 2533.8 | 2023.4 | 1805.8 | 1704.7 | 1694.4 |
| 20° | 7619.5 | 7127.3 | 5982.2 | 4795.6 | 3520.9 | 2435.3 | 1748.8 | 1513.0 | 1443.1 | 1401.6 | 1406.8 |
| 22.5° | 7422.6 | 6808.6 | 5443.3 | 4002.8 | 2640.0 | 1709.9 | 1355.0 | 1264.3 | 1256.5 | 1261.7 | 1264.3 |
| 25° | 7256.8 | 6515.9 | 4888.8 | 3238.5 | 1883.5 | 1303.2 | 1132.2 | 1106.3 | 1129.6 | 1163.3 | 1168.4 |
| 27.5° | 7171.3 | 6277.5 | 4347.4 | 2469.0 | 1362.8 | 1059.6 | 981.9 | 992.3 | 1033.7 | 1070.0 | 1075.2 |
| 30° | 7194.6 | 6098.7 | 3787.7 | 1790.2 | 1049.3 | 893.8 | 867.9 | 888.6 | 930.1 | 963.8 | 969.0 |
| 32.5° | 7360.5 | 6008.1 | 3215.2 | 1303.2 | 862.7 | 779.8 | 769.5 | 785.0 | 821.3 | 847.2 | 849.8 |
| 35° | 7689.5 | 6028.8 | 2671.1 | 997.5 | 741.0 | 694.3 | 691.7 | 702.1 | 720.2 | 738.4 | 741.0 |
| 37.5° | 8174.0 | 6197.2 | 2134.8 | 829.1 | 671.0 | 637.3 | 627.0 | 627.0 | 639.9 | 647.7 | 652.9 |
| 40° | 8694.7 | 6451.1 | 1709.9 | 733.2 | 621.8 | 585.5 | 564.8 | 557.0 | 567.4 | 577.7 | 580.3 |
| 42.5° | 9124.8 | 6705.0 | 1388.7 | 665.8 | 582.9 | 533.7 | 507.8 | 502.6 | 515.6 | 533.7 | 538.9 |
| 45° | 9453.8 | 6901.9 | 1158.1 | 611.4 | 538.9 | 484.5 | 456.0 | 456.0 | 479.3 | 510.4 | 515.6 |
| 47.5° | 9754.4 | 7059.9 | 987.1 | 562.2 | 497.4 | 440.4 | 411.9 | 417.1 | 456.0 | 497.4 | 505.2 |
| 50° | 9959.0 | 7186.9 | 860.1 | 518.2 | 463.8 | 404.2 | 378.3 | 388.6 | 435.3 | 484.5 | 492.3 |
| 52.5° | 10179.2 | 7342.3 | 777.2 | 479.3 | 432.7 | 375.7 | 352.3 | 360.1 | 411.9 | 466.3 | 476.7 |
| 55° | 10788.1 | 7863.1 | 774.6 | 427.5 | 378.3 | 336.8 | 326.4 | 329.0 | 380.8 | 443.0 | 456.0 |
| 57.5° | 11285.5 | 8321.6 | 826.5 | 360.1 | 316.1 | 295.4 | 290.2 | 292.8 | 339.4 | 409.3 | 424.9 |
| 60° | 9337.2 | 6466.6 | 684.0 | 297.9 | 264.3 | 259.1 | 251.3 | 256.5 | 300.5 | 362.7 | 375.7 |
| 62.5° | 5526.2 | 3697.1 | 326.4 | 228.0 | 225.4 | 220.2 | 212.4 | 222.8 | 264.3 | 318.7 | 326.4 |
| 65° | 1888.7 | 1095.9 | 207.3 | 186.5 | 191.7 | 183.9 | 176.2 | 186.5 | 222.8 | 253.9 | 256.5 |
| 67.5° | 362.7 | 290.2 | 165.8 | 155.4 | 158.0 | 142.5 | 139.9 | 150.3 | 171.0 | 176.2 | 173.6 |
| 70° | 189.1 | 168.4 | 126.9 | 126.9 | 121.8 | 101.0 | 101.0 | 111.4 | 111.4 | 103.6 | 101.0 |
| 72.5° | 98.5 | 93.3 | 82.9 | 93.3 | 77.7 | 62.2 | 62.2 | 67.4 | 62.2 | 51.8 | 51.8 |
| 75° | 38.9 | 38.9 | 36.3 | 46.6 | 33.7 | 28.5 | 25.9 | 31.1 | 23.3 | 18.1 | 18.1 |
| 77.5° | 10.4 | 10.4 | 10.4 | 13.0 | 7.8 | 7.8 | 5.2 | 5.2 | 2.6 | 0.0 | 0.0 |
| 80° | 0.0 | 2.6 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 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
 CIE u': 0.2052
 CIE v': 0.4804
 Duv: 0.0025
 CIE x: 0.3330
 CIE y: 0.3466
 CIE z: 0.3204
 Peak Wavelength (nm): 442
 Dominant Wavelength (nm): 554
 Purity: 4.1

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 70.6 | R9: | -27.1 |
| R2: | 74.6 | R10: | 40.8 |
| R3: | 78.3 | R11: | 74.6 |
| R4: | 73.8 | R12: | 50.4 |
| R5: | 72.4 | R13: | 70.0 |
| R6: | 67.5 | R14: | 87.8 |
| R7: | 77.5 | | |
| R8: | 58.9 | | |

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)