

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: P643810

Luminaire Tested: GWS-SA6F-760-U-SL3-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P643810
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-34)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SAGF-760-U-SL3-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: (96) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 40668.4 lumens
Efficiency: N/A
Efficacy: 109.1 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G5

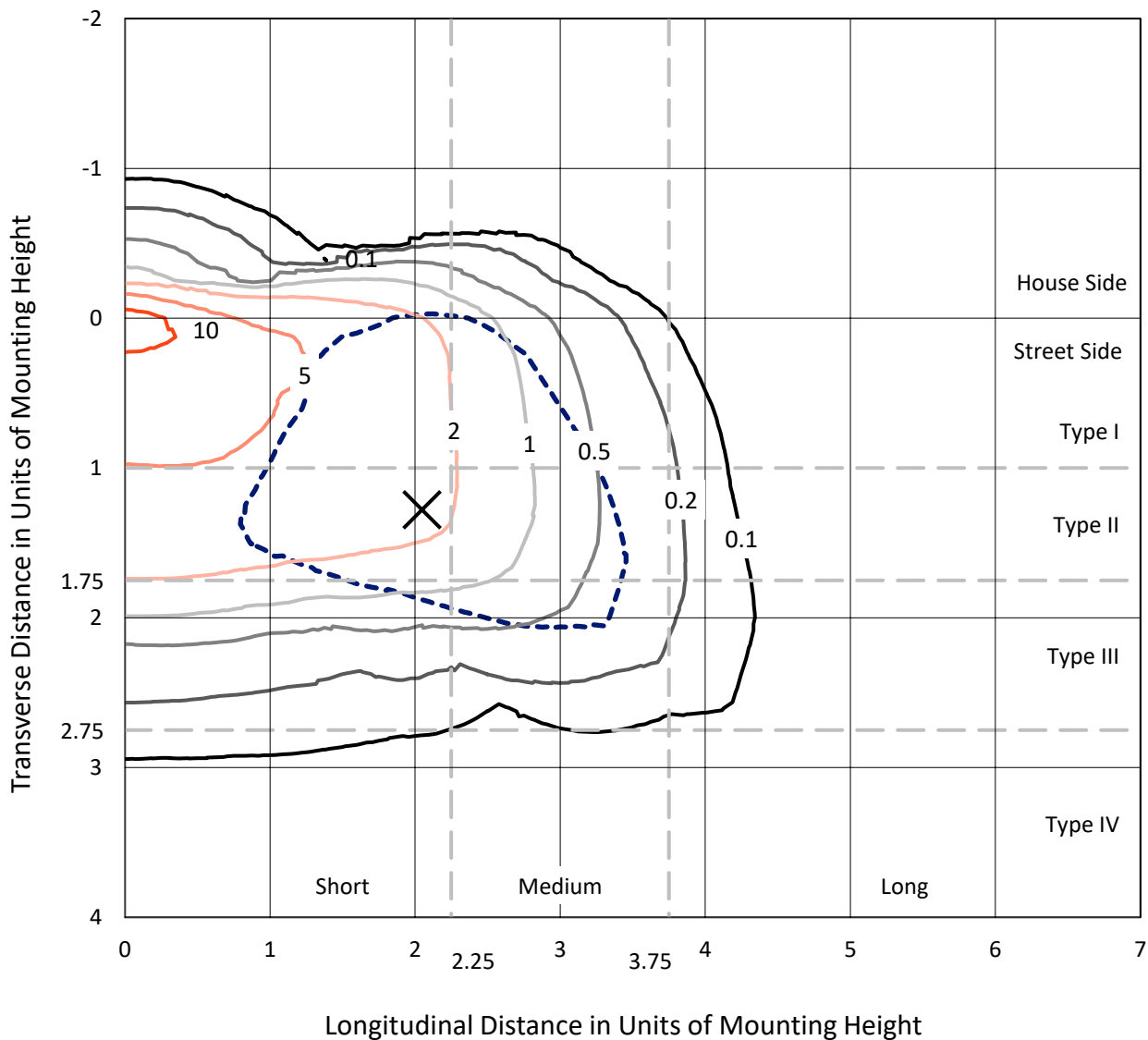
Input Watts (W): 372.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P643810
 CATALOG NUMBER: GWS-SA6F-760-U-SL3-W-HSS

Iso-Footcandle Lines of Horizontal Illumination

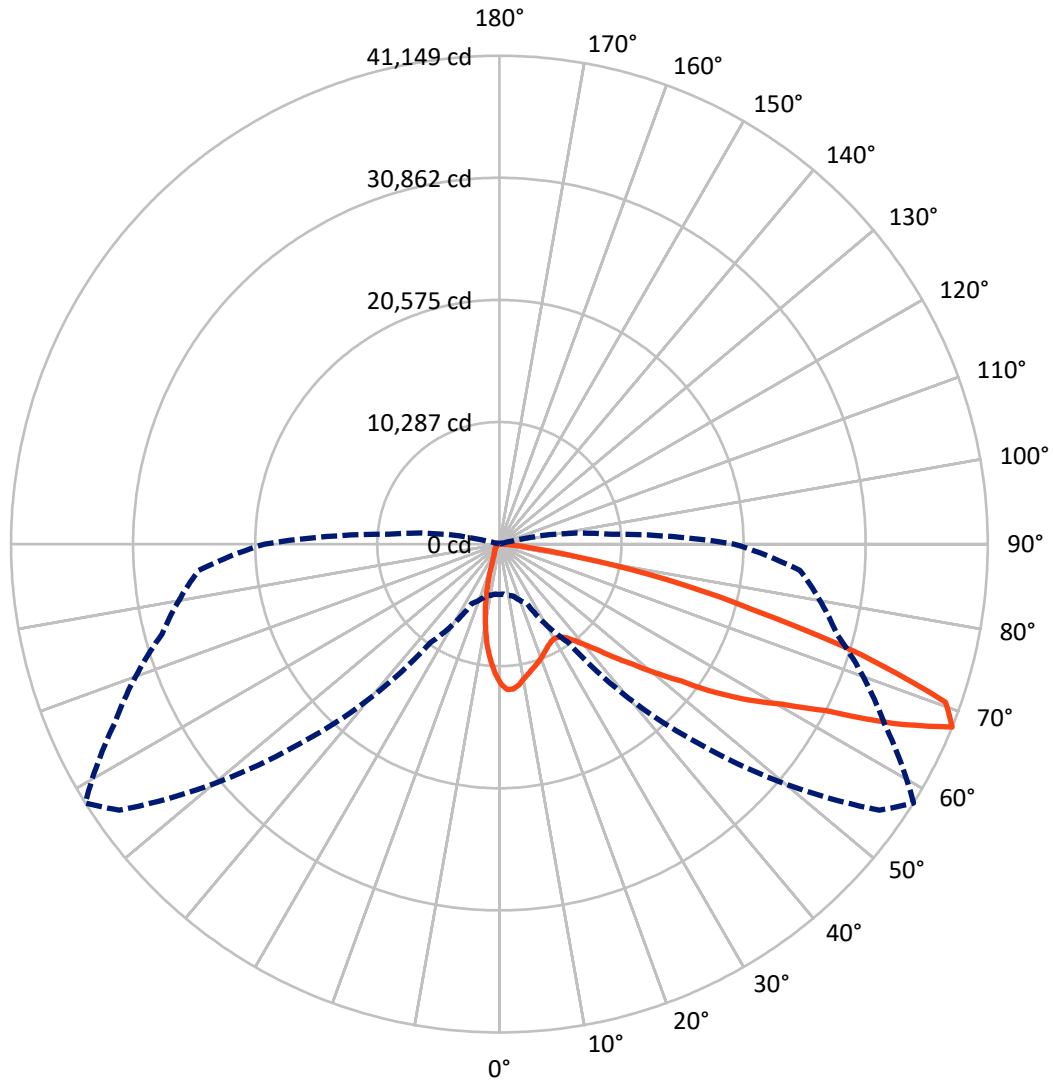
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 13 fc
 Type III - Short - N/A

REPORT NUMBER: P643810
CATALOG NUMBER: GWS-SA6F-760-U-SL3-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3973.1 | 0.0 | 3973.1 |
| | % Fixture | 9.8 | 0.0 | 9.8 |
| Street Side | Lumens | 36695.4 | 0.0 | 36695.4 |
| | % Fixture | 90.2 | 0.0 | 90.2 |
| Total | Lumens | 40668.4 | 0.0 | 40668.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 953.2 | 2.3 |
| 10°-20° | 1984.3 | 4.9 |
| 20°-30° | 2675.9 | 6.6 |
| 30°-40° | 3760.2 | 9.2 |
| 40°-50° | 5807.3 | 14.3 |
| 50°-60° | 9286.7 | 22.8 |
| 60°-70° | 10996.2 | 27.0 |
| 70°-80° | 4864.4 | 12.0 |
| 80°-90° | 340.1 | 0.8 |
| 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° | 40668.4 | 100.0 |
| 0°-180° | 40668.4 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P643810

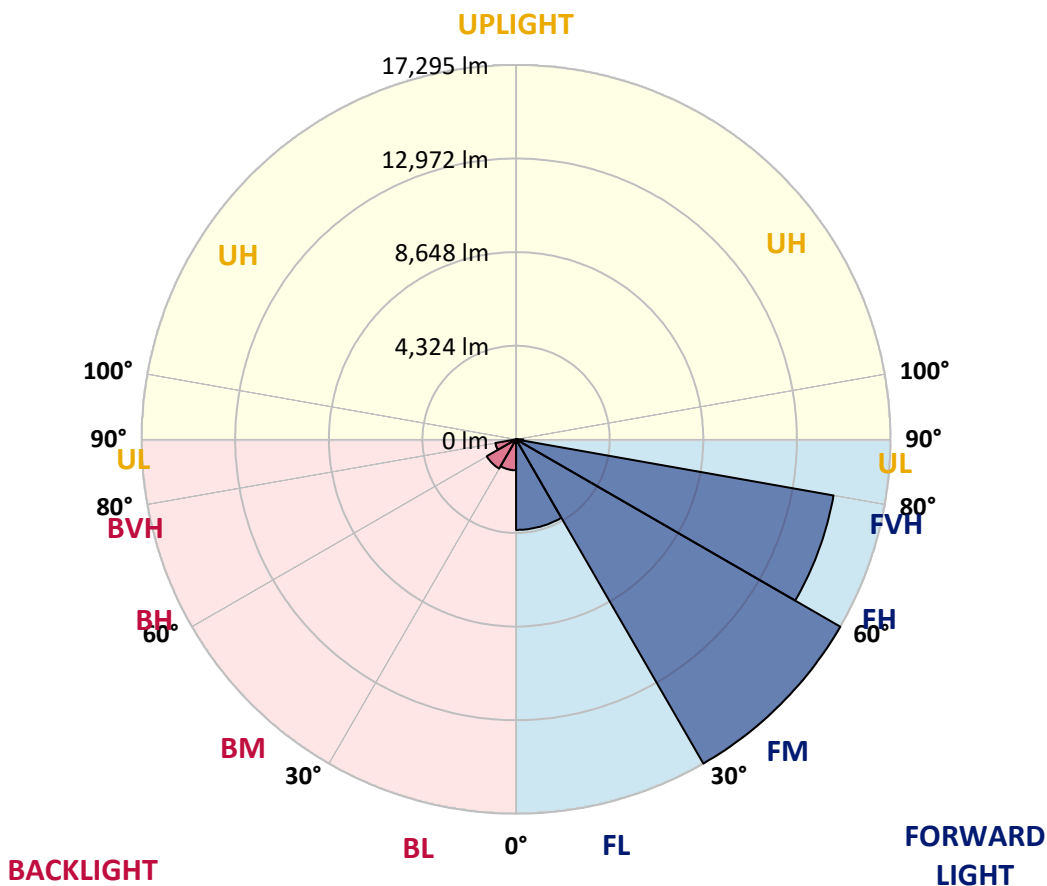
CATALOG NUMBER: GWS-SA6F-760-U-SL3-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 4183.7 | 10.3 | | | |
| FM (30°-60°) | 17295.4 | 42.5 | | | |
| FH (60°-80°) | 14890.6 | 36.6 | | | G5 |
| FVH (80°-90°) | 325.6 | 0.8 | | | G3/500 |
| BL (0°-30°) | 1429.7 | 3.5 | B3/2500 | | |
| BM (30°-60°) | 1558.9 | 3.8 | B2/2500 | | |
| BH (60°-80°) | 970.0 | 2.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 14.5 | 0.0 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 |
| 2.5° | 12339.0 | 12360.6 | 12389.4 | 12425.4 | 12418.2 | 12385.8 | 12346.2 | 12256.2 | 12198.6 | 12018.6 | 11799.1 |
| 5° | 11943.0 | 11939.4 | 12011.4 | 12079.8 | 12202.2 | 12267.0 | 12357.0 | 12274.2 | 12245.4 | 12029.4 | 11673.1 |
| 7.5° | 11169.2 | 11208.8 | 11291.5 | 11399.5 | 11575.9 | 11766.7 | 11982.6 | 11957.4 | 12043.8 | 11899.9 | 11457.1 |
| 10° | 10409.7 | 10388.1 | 10517.7 | 10679.6 | 10949.6 | 11194.4 | 11507.5 | 11503.9 | 11730.7 | 11716.3 | 11212.4 |
| 12.5° | 9743.8 | 9740.2 | 9841.0 | 10024.5 | 10341.3 | 10683.2 | 11108.0 | 11118.8 | 11399.5 | 11514.7 | 11003.6 |
| 15° | 9182.2 | 9189.4 | 9286.6 | 9477.4 | 9805.0 | 10222.5 | 10715.6 | 10805.6 | 11122.4 | 11356.3 | 10798.4 |
| 17.5° | 8782.7 | 8786.3 | 8843.9 | 9009.5 | 9329.8 | 9776.2 | 10370.1 | 10492.5 | 10899.2 | 11237.5 | 10632.8 |
| 20° | 8599.1 | 8584.7 | 8595.5 | 8678.3 | 8926.7 | 9333.4 | 10017.3 | 10175.7 | 10694.0 | 11154.8 | 10481.7 |
| 22.5° | 8624.3 | 8602.7 | 8552.3 | 8541.5 | 8653.1 | 8962.7 | 9643.0 | 9837.4 | 10470.9 | 11104.4 | 10344.9 |
| 25° | 8847.5 | 8800.7 | 8728.7 | 8620.7 | 8577.5 | 8732.3 | 9315.4 | 9517.0 | 10262.1 | 11108.0 | 10240.5 |
| 27.5° | 9189.4 | 9139.1 | 9049.1 | 8905.1 | 8735.9 | 8671.1 | 9092.3 | 9283.0 | 10114.5 | 11190.8 | 10190.1 |
| 30° | 9625.0 | 9585.4 | 9499.0 | 9326.2 | 9099.5 | 8833.1 | 9045.5 | 9203.8 | 10042.5 | 11359.9 | 10211.7 |
| 32.5° | 10139.7 | 10110.9 | 10038.9 | 9880.5 | 9621.4 | 9214.6 | 9203.8 | 9326.2 | 10100.1 | 11604.7 | 10294.5 |
| 35° | 10636.4 | 10647.2 | 10650.8 | 10564.4 | 10287.3 | 9794.2 | 9639.4 | 9682.6 | 10337.7 | 11971.8 | 10481.7 |
| 37.5° | 11172.8 | 11147.6 | 11277.1 | 11338.3 | 11072.0 | 10546.4 | 10312.5 | 10316.1 | 10791.2 | 12515.4 | 10834.4 |
| 40° | 11579.5 | 11586.7 | 11867.5 | 12119.4 | 12007.8 | 11500.3 | 11165.6 | 11162.0 | 11489.5 | 13260.5 | 11403.1 |
| 42.5° | 11961.0 | 12007.8 | 12421.8 | 12853.7 | 13008.5 | 12558.6 | 12317.4 | 12227.4 | 12468.6 | 14268.3 | 12256.2 |
| 45° | 12367.8 | 12436.2 | 13015.7 | 13631.2 | 14037.9 | 13771.6 | 13580.8 | 13616.8 | 13645.6 | 15441.7 | 13404.4 |
| 47.5° | 12842.9 | 12886.1 | 13602.4 | 14469.9 | 15229.4 | 15161.0 | 15171.8 | 15128.6 | 15114.2 | 16921.1 | 14923.4 |
| 50° | 13418.8 | 13519.6 | 14343.9 | 15380.5 | 16417.2 | 16870.7 | 17021.9 | 17039.9 | 16805.9 | 18533.7 | 16496.4 |
| 52.5° | 14642.6 | 14765.0 | 15470.5 | 16377.6 | 17713.0 | 18666.9 | 19282.4 | 19160.0 | 18800.0 | 20095.8 | 18220.5 |
| 55° | 16086.0 | 16179.6 | 16859.9 | 17799.4 | 19296.8 | 20635.8 | 22097.2 | 22046.8 | 21164.9 | 21740.8 | 19638.7 |
| 57.5° | 16222.8 | 16327.2 | 17381.8 | 18821.6 | 21330.5 | 23069.0 | 24606.0 | 24768.0 | 23475.7 | 22907.0 | 20905.7 |
| 60° | 14685.8 | 14898.2 | 16338.0 | 18274.5 | 22107.9 | 26340.9 | 27356.0 | 27388.4 | 25171.1 | 24091.3 | 22453.5 |
| 62.5° | 11770.3 | 11871.1 | 13321.6 | 15848.5 | 20909.3 | 28248.6 | 31556.6 | 30872.7 | 27348.8 | 25923.4 | 24904.7 |
| 65° | 6169.5 | 6579.8 | 7843.2 | 10640.0 | 16957.1 | 27582.7 | 36610.2 | 36423.0 | 31265.0 | 28547.4 | 26812.5 |
| 67.5° | 4233.0 | 4229.4 | 4528.1 | 5546.8 | 10110.9 | 23749.3 | 39090.3 | 41149.1 | 35793.1 | 29447.3 | 25430.3 |
| 70° | 3221.5 | 3232.3 | 3498.7 | 4161.0 | 5237.2 | 15808.9 | 36369.1 | 39889.3 | 36635.4 | 26736.9 | 20567.4 |
| 72.5° | 2138.1 | 2159.7 | 2602.4 | 3361.9 | 4182.6 | 7749.7 | 28263.0 | 31916.5 | 30825.9 | 21474.4 | 14477.1 |
| 75° | 1277.8 | 1295.8 | 1612.6 | 2444.0 | 3718.3 | 4337.4 | 17957.8 | 22064.8 | 21218.9 | 14801.0 | 7760.5 |
| 77.5° | 525.5 | 539.9 | 827.9 | 1522.6 | 2721.2 | 3369.1 | 9930.9 | 14437.5 | 12709.7 | 5885.1 | 2120.1 |
| 80° | 219.6 | 226.8 | 399.5 | 1065.4 | 1961.7 | 2112.9 | 4600.1 | 6785.0 | 5208.4 | 1267.0 | 647.9 |
| 82.5° | 79.2 | 82.8 | 147.6 | 586.7 | 1220.2 | 1591.0 | 2321.7 | 2681.6 | 1468.6 | 413.9 | 349.1 |
| 85° | 3.6 | 3.6 | 36.0 | 198.0 | 464.3 | 449.9 | 1328.2 | 1285.0 | 485.9 | 172.8 | 208.8 |
| 87.5° | 0.0 | 0.0 | 3.6 | 3.6 | 7.2 | 18.0 | 126.0 | 223.2 | 104.4 | 43.2 | 90.0 |
| 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: P643810

CATALOG NUMBER: GWS-SA6F-760-U-SL3-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 | 11730.7 |
| 2.5° | 11655.1 | 11464.3 | 11255.5 | 11061.2 | 10751.6 | 10568.0 | 10341.3 | 10240.5 | 10096.5 | 10060.5 | 10082.1 |
| 5° | 11417.5 | 11090.0 | 10589.6 | 10136.1 | 9549.4 | 9077.9 | 8602.7 | 8401.2 | 8142.0 | 7969.2 | 7897.2 |
| 7.5° | 11082.8 | 10654.4 | 9873.3 | 9049.1 | 8242.8 | 7382.5 | 6727.4 | 6295.5 | 5903.1 | 5687.2 | 5644.0 |
| 10° | 10744.4 | 10186.5 | 9067.1 | 7886.4 | 6637.4 | 5608.0 | 4722.5 | 4067.4 | 3534.7 | 3293.5 | 3106.3 |
| 12.5° | 10395.3 | 9700.6 | 8246.4 | 6705.8 | 5255.2 | 3851.4 | 2757.2 | 2120.1 | 1738.5 | 1587.4 | 1612.6 |
| 15° | 10074.9 | 9232.6 | 7432.9 | 5525.2 | 3700.3 | 2325.3 | 1522.6 | 1285.0 | 1195.0 | 1166.2 | 1162.6 |
| 17.5° | 9769.0 | 8789.9 | 6623.0 | 4377.0 | 2440.4 | 1425.4 | 1166.2 | 1108.6 | 1083.4 | 1069.0 | 1069.0 |
| 20° | 9491.8 | 8365.2 | 5831.1 | 3297.1 | 1576.6 | 1130.2 | 1054.6 | 1025.8 | 1004.3 | 993.5 | 993.5 |
| 22.5° | 9232.6 | 7954.8 | 5057.3 | 2332.5 | 1162.6 | 1015.1 | 968.3 | 939.5 | 914.3 | 899.9 | 899.9 |
| 25° | 8998.7 | 7584.1 | 4319.4 | 1605.4 | 1000.7 | 928.7 | 878.3 | 845.9 | 802.7 | 777.5 | 777.5 |
| 27.5° | 8829.5 | 7252.9 | 3610.3 | 1169.8 | 903.5 | 835.1 | 777.5 | 734.3 | 687.5 | 658.7 | 651.5 |
| 30° | 8728.7 | 6972.2 | 2894.0 | 961.1 | 813.5 | 745.1 | 680.3 | 626.3 | 572.3 | 543.5 | 539.9 |
| 32.5° | 8671.1 | 6713.0 | 2238.9 | 838.7 | 737.9 | 658.7 | 586.7 | 529.1 | 475.1 | 442.7 | 439.1 |
| 35° | 8692.7 | 6511.4 | 1677.4 | 755.9 | 665.9 | 583.1 | 503.9 | 446.3 | 399.5 | 370.7 | 363.5 |
| 37.5° | 8879.9 | 6421.5 | 1259.8 | 691.1 | 604.7 | 518.3 | 435.5 | 381.5 | 338.4 | 316.8 | 313.2 |
| 40° | 9243.4 | 6439.5 | 989.9 | 640.7 | 554.3 | 453.5 | 374.3 | 324.0 | 291.6 | 273.6 | 270.0 |
| 42.5° | 9808.6 | 6590.6 | 817.1 | 597.5 | 500.3 | 395.9 | 324.0 | 284.4 | 252.0 | 234.0 | 230.4 |
| 45° | 10650.8 | 6903.8 | 712.7 | 547.1 | 442.7 | 341.9 | 280.8 | 244.8 | 216.0 | 194.4 | 190.8 |
| 47.5° | 11871.1 | 7447.3 | 644.3 | 500.3 | 392.3 | 295.2 | 241.2 | 205.2 | 180.0 | 162.0 | 158.4 |
| 50° | 13170.5 | 8098.8 | 586.7 | 453.5 | 349.1 | 255.6 | 205.2 | 169.2 | 147.6 | 129.6 | 126.0 |
| 52.5° | 14556.3 | 8800.7 | 543.5 | 410.3 | 309.6 | 219.6 | 172.8 | 140.4 | 118.8 | 100.8 | 97.2 |
| 55° | 15888.1 | 9506.2 | 493.1 | 381.5 | 262.8 | 187.2 | 144.0 | 115.2 | 93.6 | 79.2 | 79.2 |
| 57.5° | 17183.9 | 10154.1 | 439.1 | 334.8 | 216.0 | 158.4 | 118.8 | 93.6 | 75.6 | 64.8 | 61.2 |
| 60° | 18731.6 | 11050.4 | 377.9 | 284.4 | 180.0 | 133.2 | 97.2 | 75.6 | 61.2 | 50.4 | 50.4 |
| 62.5° | 21031.7 | 11982.6 | 324.0 | 237.6 | 151.2 | 111.6 | 79.2 | 61.2 | 50.4 | 43.2 | 39.6 |
| 65° | 21784.0 | 11478.7 | 273.6 | 194.4 | 122.4 | 90.0 | 64.8 | 54.0 | 43.2 | 39.6 | 36.0 |
| 67.5° | 19775.5 | 9409.0 | 226.8 | 158.4 | 100.8 | 75.6 | 57.6 | 46.8 | 39.6 | 36.0 | 32.4 |
| 70° | 15430.9 | 6677.0 | 176.4 | 118.8 | 82.8 | 61.2 | 50.4 | 43.2 | 36.0 | 32.4 | 32.4 |
| 72.5° | 10496.1 | 3948.6 | 140.4 | 90.0 | 68.4 | 54.0 | 43.2 | 39.6 | 36.0 | 32.4 | 28.8 |
| 75° | 5168.8 | 1403.8 | 108.0 | 68.4 | 54.0 | 46.8 | 39.6 | 36.0 | 32.4 | 28.8 | 28.8 |
| 77.5° | 1393.0 | 388.7 | 82.8 | 54.0 | 43.2 | 36.0 | 36.0 | 36.0 | 32.4 | 25.2 | 25.2 |
| 80° | 471.5 | 162.0 | 61.2 | 39.6 | 36.0 | 28.8 | 25.2 | 32.4 | 28.8 | 25.2 | 21.6 |
| 82.5° | 259.2 | 79.2 | 43.2 | 32.4 | 25.2 | 21.6 | 21.6 | 21.6 | 21.6 | 18.0 | 18.0 |
| 85° | 165.6 | 43.2 | 28.8 | 25.2 | 25.2 | 18.0 | 14.4 | 14.4 | 10.8 | 10.8 | 10.8 |
| 87.5° | 75.6 | 25.2 | 25.2 | 21.6 | 21.6 | 18.0 | 10.8 | 7.2 | 3.6 | 3.6 | 3.6 |
| 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

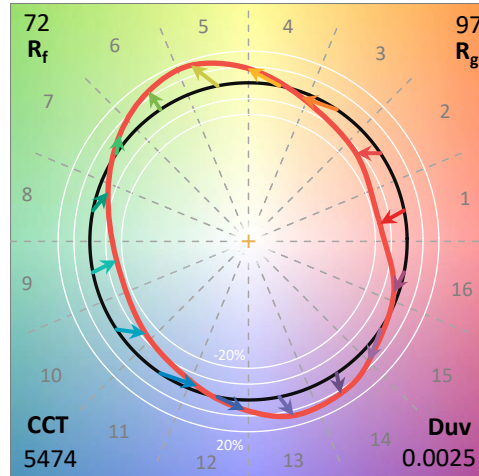
THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

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

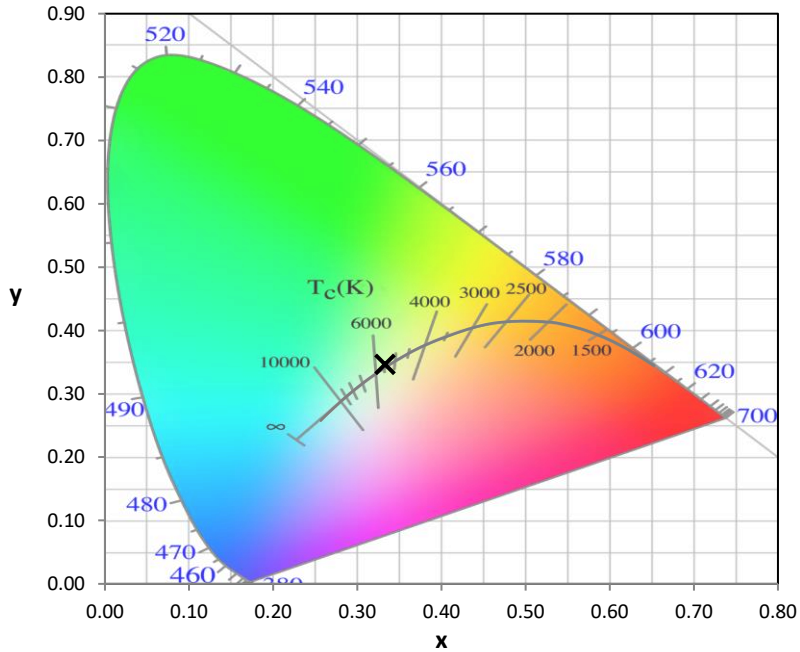
Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

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 | | | |

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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)