

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: P640864

Luminaire Tested: GWS-SA5E-760-U-T3-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640864
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-23)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5E-760-U-T3-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: (80) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 37900.4 lumens
Efficiency: N/A
Efficacy: 140.6 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G5

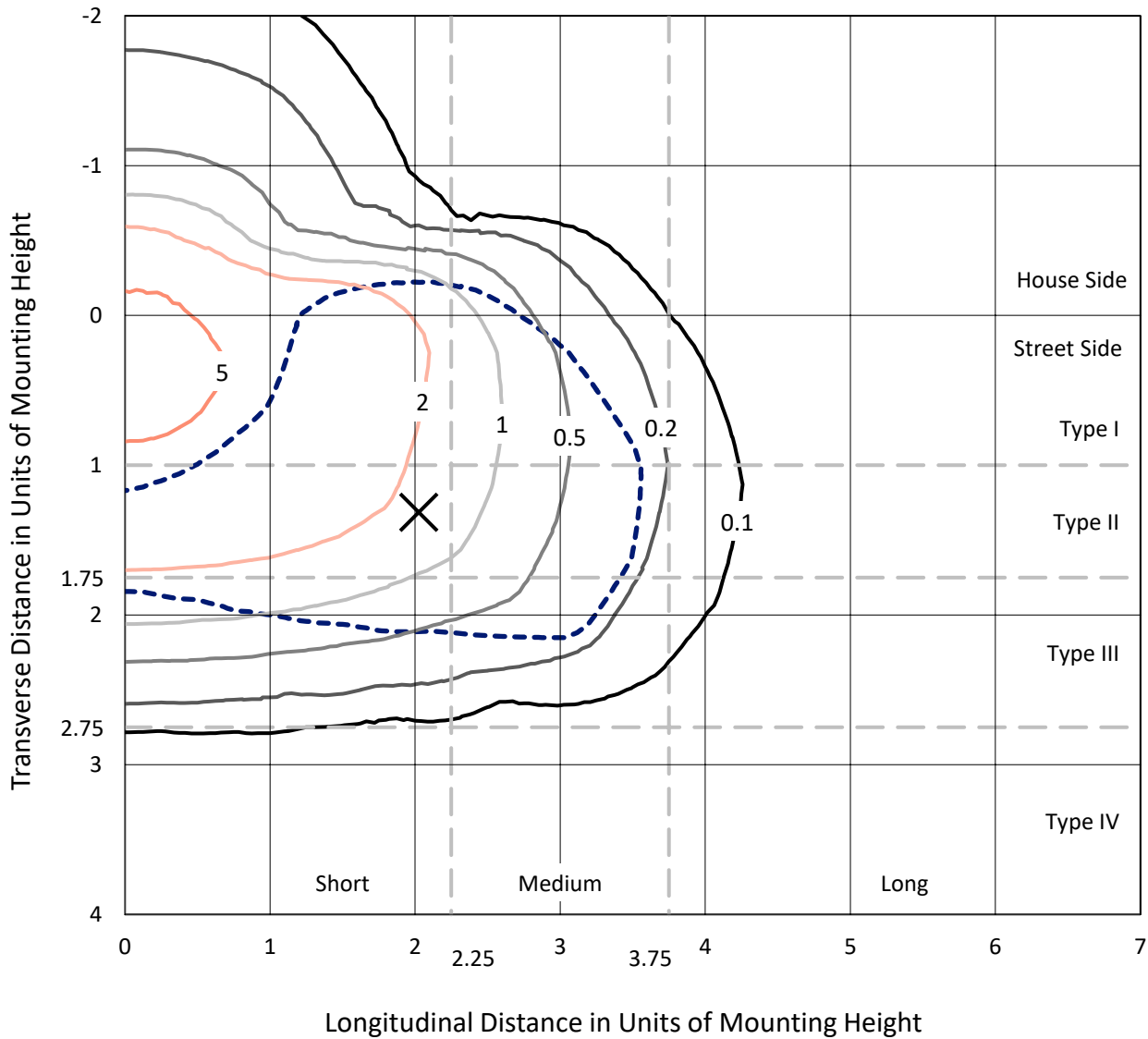
Input Watts (W): 269.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P640864
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Iso-Footcandle Lines of Horizontal Illumination

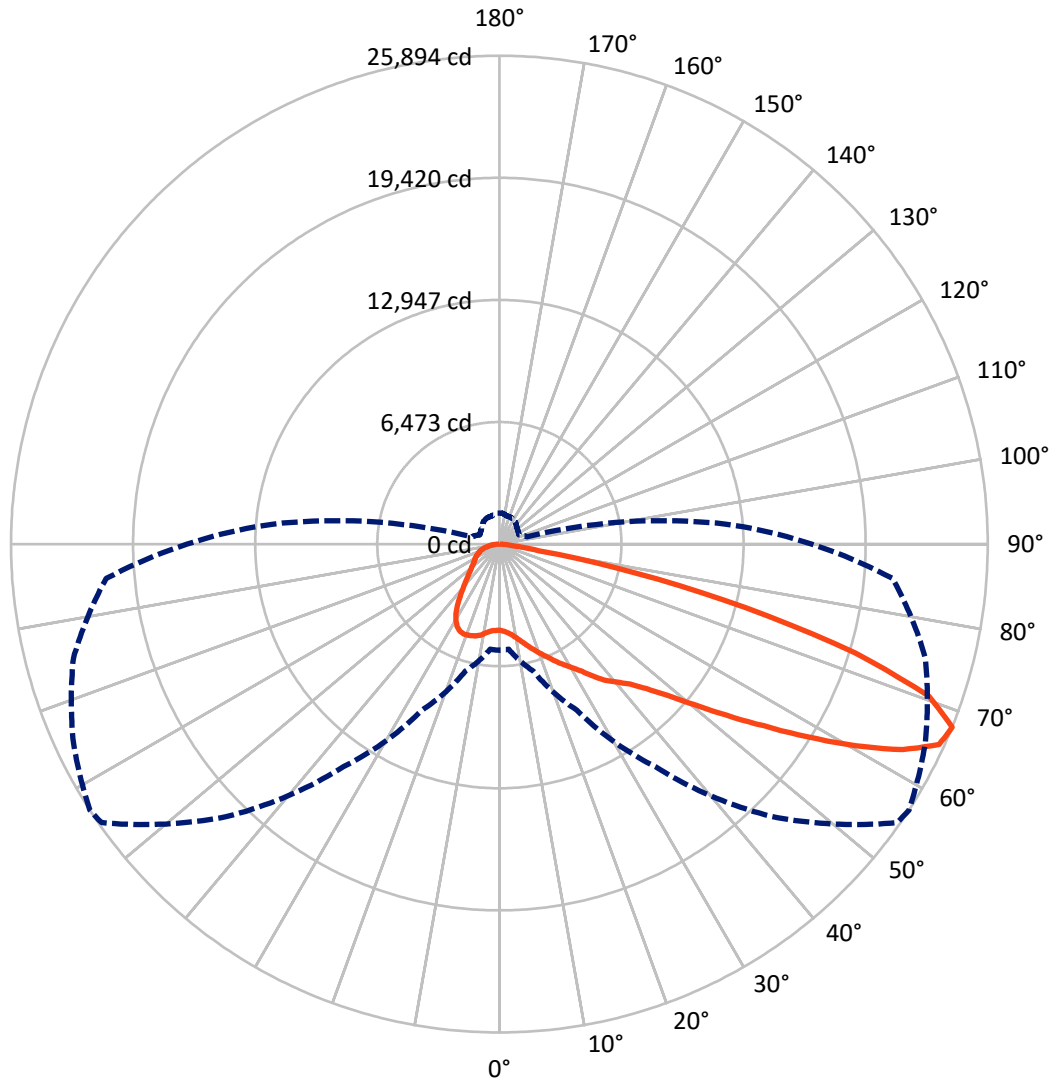
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 5.9 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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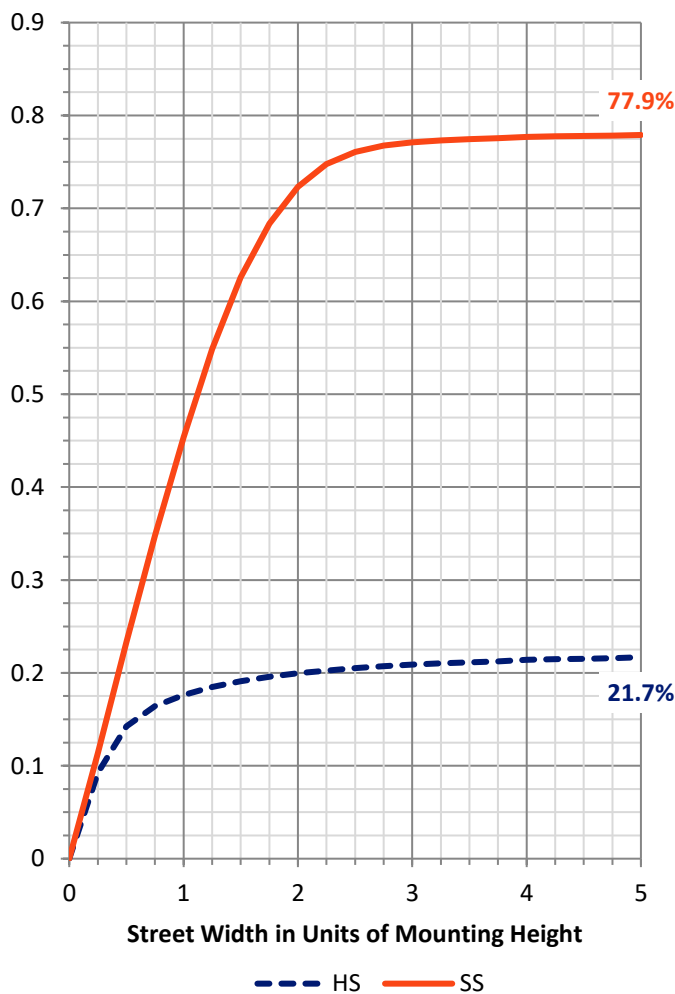
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8332.9 | 0.0 | 8332.9 |
| | % Fixture | 22.0 | 0.0 | 22.0 |
| Street Side | Lumens | 29567.5 | 0.0 | 29567.5 |
| | % Fixture | 78.0 | 0.0 | 78.0 |
| Total | Lumens | 37900.4 | 0.0 | 37900.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 452.9 | 1.2 |
| 10°-20° | 1499.4 | 4.0 |
| 20°-30° | 2673.2 | 7.1 |
| 30°-40° | 3886.4 | 10.3 |
| 40°-50° | 5625.0 | 14.8 |
| 50°-60° | 8802.9 | 23.2 |
| 60°-70° | 10269.2 | 27.1 |
| 70°-80° | 4286.8 | 11.3 |
| 80°-90° | 404.5 | 1.1 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 37900.4 | 100.0 |
| 0°-180° | 37900.4 | 100.0 |

Coefficient of Utilization



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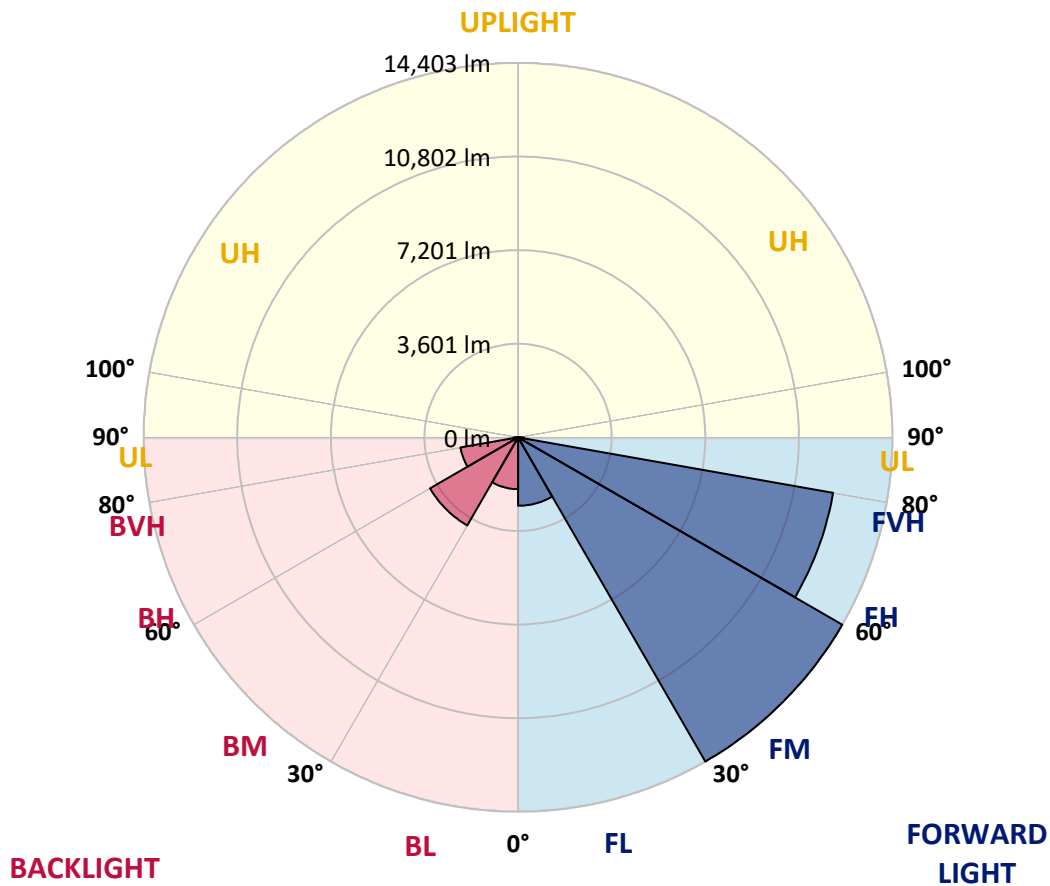
CATALOG NUMBER: GWS-SA5E-760-U-T3-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2632.6 | 6.9 | | | |
| FM (30°-60°) | 14402.7 | 38.0 | | | |
| FH (60°-80°) | 12306.9 | 32.5 | | | G5 |
| FVH (80°-90°) | 225.4 | 0.6 | | | G3/500 |
| BL (0°-30°) | 1993.0 | 5.3 | B3/2500 | | |
| BM (30°-60°) | 3911.7 | 10.3 | B3/5000 | | |
| BH (60°-80°) | 2249.1 | 5.9 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 179.2 | 0.5 | | | G2/225 |
| 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





REPORT NUMBER: P640864

CATALOG NUMBER: GWS-SA5E-760-U-T3-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 |
| 2.5° | 4631.9 | 4626.5 | 4623.8 | 4640.0 | 4634.6 | 4631.9 | 4631.9 | 4629.2 | 4623.8 | 4602.0 | 4572.2 |
| 5° | 4759.5 | 4748.6 | 4737.8 | 4751.4 | 4740.5 | 4729.6 | 4726.9 | 4721.5 | 4702.5 | 4669.9 | 4623.8 |
| 7.5° | 4892.5 | 4881.7 | 4884.4 | 4892.5 | 4884.4 | 4879.0 | 4870.8 | 4865.4 | 4835.5 | 4783.9 | 4721.5 |
| 10° | 5079.9 | 5079.9 | 5085.3 | 5093.5 | 5096.2 | 5088.0 | 5071.7 | 5063.6 | 5028.3 | 4963.1 | 4876.3 |
| 12.5° | 5351.4 | 5346.0 | 5346.0 | 5340.5 | 5348.7 | 5340.5 | 5324.2 | 5310.7 | 5267.2 | 5183.1 | 5058.2 |
| 15° | 5709.8 | 5688.1 | 5669.1 | 5633.8 | 5622.9 | 5593.0 | 5598.5 | 5590.3 | 5549.6 | 5435.6 | 5278.1 |
| 17.5° | 6092.6 | 6089.9 | 6060.0 | 5989.4 | 5918.8 | 5870.0 | 5880.8 | 5878.1 | 5856.4 | 5701.6 | 5500.7 |
| 20° | 6429.3 | 6442.9 | 6415.7 | 6361.4 | 6266.4 | 6174.1 | 6168.6 | 6182.2 | 6155.1 | 6000.3 | 5720.6 |
| 22.5° | 6806.7 | 6795.8 | 6768.7 | 6698.1 | 6627.5 | 6529.7 | 6497.2 | 6486.3 | 6475.4 | 6299.0 | 5946.0 |
| 25° | 7165.1 | 7197.6 | 7162.3 | 7097.2 | 6988.6 | 6882.7 | 6855.5 | 6866.4 | 6836.5 | 6603.0 | 6187.6 |
| 27.5° | 7618.5 | 7632.0 | 7610.3 | 7520.7 | 7428.4 | 7279.1 | 7227.5 | 7227.5 | 7216.6 | 6888.1 | 6377.7 |
| 30° | 8101.8 | 8139.8 | 8101.8 | 8028.4 | 7933.4 | 7718.9 | 7607.6 | 7596.8 | 7564.2 | 7181.3 | 6600.3 |
| 32.5° | 8587.8 | 8614.9 | 8587.8 | 8517.2 | 8408.6 | 8221.2 | 8061.0 | 8036.6 | 7993.2 | 7501.7 | 6828.4 |
| 35° | 9019.4 | 9043.9 | 9038.5 | 9054.7 | 8965.1 | 8728.9 | 8631.2 | 8620.3 | 8506.3 | 7919.8 | 7137.9 |
| 37.5° | 9491.9 | 9521.7 | 9481.0 | 9513.6 | 9478.3 | 9255.7 | 9225.8 | 9171.5 | 9008.6 | 8313.5 | 7463.7 |
| 40° | 10029.5 | 10056.6 | 9991.4 | 10005.0 | 9964.3 | 9839.4 | 9687.4 | 9614.0 | 9372.4 | 8739.8 | 7976.9 |
| 42.5° | 10605.0 | 10667.5 | 10697.4 | 10672.9 | 10577.9 | 10507.3 | 10241.2 | 10148.9 | 9948.0 | 9508.2 | 8821.2 |
| 45° | 11438.6 | 11530.9 | 11574.3 | 11511.9 | 11471.2 | 11370.7 | 11044.9 | 10933.6 | 10827.7 | 10591.5 | 9999.6 |
| 47.5° | 12337.3 | 12421.4 | 12559.9 | 12587.0 | 12619.6 | 12543.6 | 12084.8 | 11976.2 | 11995.2 | 11968.0 | 11449.4 |
| 50° | 13054.0 | 13124.6 | 13436.9 | 13770.8 | 14047.7 | 14069.5 | 13483.0 | 13366.3 | 13469.4 | 13556.3 | 13195.2 |
| 52.5° | 13575.3 | 13637.8 | 14050.5 | 14740.1 | 15367.3 | 15831.5 | 15198.9 | 15065.9 | 15150.1 | 15345.6 | 15179.9 |
| 55° | 13998.9 | 14085.8 | 14517.5 | 15576.3 | 16844.3 | 17577.3 | 17172.8 | 17004.5 | 16969.2 | 17210.8 | 17305.8 |
| 57.5° | 14221.5 | 14248.7 | 14854.1 | 16230.7 | 17927.6 | 19290.5 | 19467.0 | 19277.0 | 18940.3 | 19073.3 | 19567.5 |
| 60° | 13713.8 | 13760.0 | 14588.0 | 16399.0 | 18782.8 | 20990.2 | 21875.3 | 21717.8 | 21001.0 | 21074.3 | 21620.1 |
| 62.5° | 12310.1 | 12375.3 | 13371.7 | 15598.1 | 18853.4 | 22125.1 | 24098.9 | 23998.5 | 23037.3 | 22640.9 | 22803.8 |
| 65° | 9874.7 | 9896.4 | 10928.1 | 13616.1 | 17449.7 | 22266.3 | 25649.2 | 25624.8 | 24460.0 | 23531.5 | 22833.7 |
| 67.5° | 5631.0 | 5593.0 | 6972.3 | 9711.8 | 14400.7 | 20430.9 | 25749.7 | 25893.6 | 24921.6 | 23384.9 | 20933.2 |
| 70° | 2440.8 | 2446.3 | 3081.6 | 4792.1 | 9320.8 | 16513.0 | 23917.0 | 24164.1 | 23585.8 | 20944.0 | 16654.2 |
| 72.5° | 1129.5 | 1145.8 | 1420.0 | 2074.3 | 3980.3 | 10243.9 | 19502.3 | 19725.0 | 19228.1 | 16762.8 | 12117.3 |
| 75° | 798.2 | 811.8 | 947.6 | 1189.2 | 1830.0 | 3991.1 | 13045.9 | 13512.9 | 13754.5 | 12538.2 | 7985.0 |
| 77.5° | 605.5 | 624.5 | 692.3 | 825.4 | 1129.5 | 1414.5 | 6241.9 | 7355.1 | 8761.5 | 7800.4 | 4113.3 |
| 80° | 385.5 | 385.5 | 458.8 | 551.2 | 689.6 | 735.8 | 1802.8 | 2136.8 | 4287.1 | 3214.6 | 1615.5 |
| 82.5° | 260.6 | 268.8 | 312.2 | 350.2 | 396.4 | 418.1 | 773.8 | 825.4 | 1238.1 | 1094.2 | 665.2 |
| 85° | 138.5 | 143.9 | 162.9 | 160.2 | 190.1 | 165.6 | 325.8 | 323.1 | 453.4 | 496.9 | 252.5 |
| 87.5° | 0.0 | 0.0 | 2.7 | 2.7 | 5.4 | 8.1 | 35.3 | 38.0 | 95.0 | 152.0 | 84.2 |
| 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: P640864
 CATALOG NUMBER: GWS-SA5E-760-U-T3-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 | 4566.7 |
| 2.5° | 4588.5 | 4555.9 | 4572.2 | 4566.7 | 4583.0 | 4583.0 | 4553.2 | 4545.0 | 4547.7 | 4515.2 | 4504.3 |
| 5° | 4629.2 | 4591.2 | 4599.3 | 4588.5 | 4604.8 | 4618.3 | 4604.8 | 4604.8 | 4621.0 | 4596.6 | 4583.0 |
| 7.5° | 4721.5 | 4678.1 | 4678.1 | 4664.5 | 4683.5 | 4694.3 | 4683.5 | 4699.8 | 4729.6 | 4705.2 | 4691.6 |
| 10° | 4868.1 | 4816.5 | 4819.2 | 4803.0 | 4811.1 | 4805.7 | 4762.2 | 4748.6 | 4756.8 | 4735.1 | 4724.2 |
| 12.5° | 5058.2 | 4987.6 | 4987.6 | 4955.0 | 4936.0 | 4879.0 | 4789.4 | 4756.8 | 4762.2 | 4743.2 | 4735.1 |
| 15° | 5240.1 | 5174.9 | 5161.3 | 5096.2 | 5009.3 | 4903.4 | 4822.0 | 4800.2 | 4805.7 | 4786.7 | 4773.1 |
| 17.5° | 5454.6 | 5370.4 | 5321.5 | 5202.1 | 5041.9 | 4933.3 | 4851.8 | 4800.2 | 4756.8 | 4713.4 | 4702.5 |
| 20° | 5652.8 | 5546.9 | 5457.3 | 5272.7 | 5077.2 | 4927.8 | 4775.8 | 4648.2 | 4542.3 | 4485.3 | 4471.7 |
| 22.5° | 5856.4 | 5720.6 | 5563.2 | 5321.5 | 5074.5 | 4830.1 | 4550.4 | 4357.7 | 4200.2 | 4116.0 | 4132.3 |
| 25° | 6049.2 | 5878.1 | 5663.6 | 5367.7 | 4987.6 | 4612.9 | 4232.8 | 3945.0 | 3765.8 | 3700.6 | 3681.6 |
| 27.5° | 6209.4 | 5997.6 | 5755.9 | 5346.0 | 4808.4 | 4300.7 | 3798.4 | 3478.0 | 3304.2 | 3230.9 | 3211.9 |
| 30° | 6388.5 | 6149.6 | 5889.0 | 5245.5 | 4526.0 | 3863.5 | 3306.9 | 3046.3 | 2921.4 | 2850.8 | 2853.5 |
| 32.5° | 6594.9 | 6345.1 | 6076.3 | 5052.7 | 4164.9 | 3391.1 | 2902.4 | 2723.2 | 2622.8 | 2552.2 | 2541.3 |
| 35° | 6871.8 | 6624.8 | 6201.2 | 4762.2 | 3706.1 | 2956.7 | 2625.5 | 2478.9 | 2354.0 | 2261.6 | 2242.6 |
| 37.5° | 7213.9 | 7045.6 | 6214.8 | 4374.0 | 3214.6 | 2658.0 | 2427.3 | 2269.8 | 2117.8 | 1995.6 | 1982.0 |
| 40° | 7800.4 | 7607.6 | 6103.5 | 3888.0 | 2796.5 | 2465.3 | 2261.6 | 2079.7 | 1903.3 | 1767.5 | 1748.5 |
| 42.5° | 8636.6 | 8240.2 | 5864.5 | 3339.5 | 2481.6 | 2313.2 | 2104.2 | 1873.4 | 1694.2 | 1599.2 | 1585.6 |
| 45° | 9700.9 | 8946.1 | 5506.2 | 2823.7 | 2248.1 | 2163.9 | 1938.6 | 1696.9 | 1601.9 | 1534.0 | 1520.4 |
| 47.5° | 11004.2 | 9768.8 | 5093.5 | 2421.8 | 2066.2 | 2028.2 | 1770.2 | 1637.2 | 1553.0 | 1496.0 | 1482.4 |
| 50° | 12562.6 | 10816.8 | 4754.1 | 2106.9 | 1903.3 | 1870.7 | 1715.9 | 1601.9 | 1534.0 | 1487.9 | 1477.0 |
| 52.5° | 14341.0 | 11981.6 | 4588.5 | 1881.5 | 1762.1 | 1729.5 | 1696.9 | 1593.7 | 1536.7 | 1501.4 | 1487.9 |
| 55° | 16187.2 | 13208.8 | 4433.7 | 1707.8 | 1642.6 | 1661.6 | 1699.6 | 1620.9 | 1577.5 | 1531.3 | 1517.7 |
| 57.5° | 17971.0 | 14360.0 | 4053.6 | 1572.0 | 1555.7 | 1629.0 | 1713.2 | 1648.0 | 1596.5 | 1550.3 | 1534.0 |
| 60° | 19200.9 | 14989.9 | 3410.1 | 1463.4 | 1490.6 | 1588.3 | 1677.9 | 1607.3 | 1542.2 | 1523.2 | 1515.0 |
| 62.5° | 19532.2 | 14913.9 | 2647.2 | 1352.1 | 1411.8 | 1498.7 | 1585.6 | 1539.4 | 1471.6 | 1501.4 | 1504.1 |
| 65° | 18758.4 | 14099.3 | 1987.4 | 1243.5 | 1308.7 | 1382.0 | 1490.6 | 1471.6 | 1447.1 | 1528.6 | 1531.3 |
| 67.5° | 16567.3 | 12098.3 | 1515.0 | 1148.5 | 1202.8 | 1292.4 | 1460.7 | 1539.4 | 1544.9 | 1648.0 | 1637.2 |
| 70° | 12535.5 | 9038.5 | 1186.5 | 1058.9 | 1121.3 | 1292.4 | 1555.7 | 1591.0 | 1525.9 | 1620.9 | 1599.2 |
| 72.5° | 8666.5 | 5965.0 | 1010.0 | 980.1 | 1020.9 | 1232.6 | 1553.0 | 1553.0 | 1482.4 | 1482.4 | 1441.7 |
| 75° | 5384.0 | 3507.9 | 879.7 | 879.7 | 879.7 | 1077.9 | 1509.6 | 1430.8 | 1305.9 | 1248.9 | 1216.3 |
| 77.5° | 2658.0 | 1705.1 | 738.5 | 765.6 | 735.8 | 901.4 | 1232.6 | 1170.2 | 1094.2 | 1034.4 | 1012.7 |
| 80° | 1134.9 | 852.5 | 597.3 | 627.2 | 591.9 | 678.8 | 977.4 | 963.8 | 890.5 | 811.8 | 787.4 |
| 82.5° | 521.3 | 439.8 | 477.9 | 491.4 | 431.7 | 510.4 | 714.1 | 714.1 | 673.3 | 564.7 | 524.0 |
| 85° | 222.6 | 233.5 | 331.2 | 331.2 | 271.5 | 287.8 | 382.8 | 363.8 | 325.8 | 266.1 | 244.4 |
| 87.5° | 76.0 | 114.0 | 168.3 | 146.6 | 57.0 | 24.4 | 13.6 | 5.4 | 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

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| 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 ($\mu\text{W}/\text{nm}$) | 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)