

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



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P438844

Luminaire Tested: **ISW-SA1F-730-U-SL2-HSS**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438844
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-15)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISW-SA1F-730-U-SL2-HSS
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 70 CRI, 3000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5690 lumens
Efficiency: N/A
Efficacy: 86.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

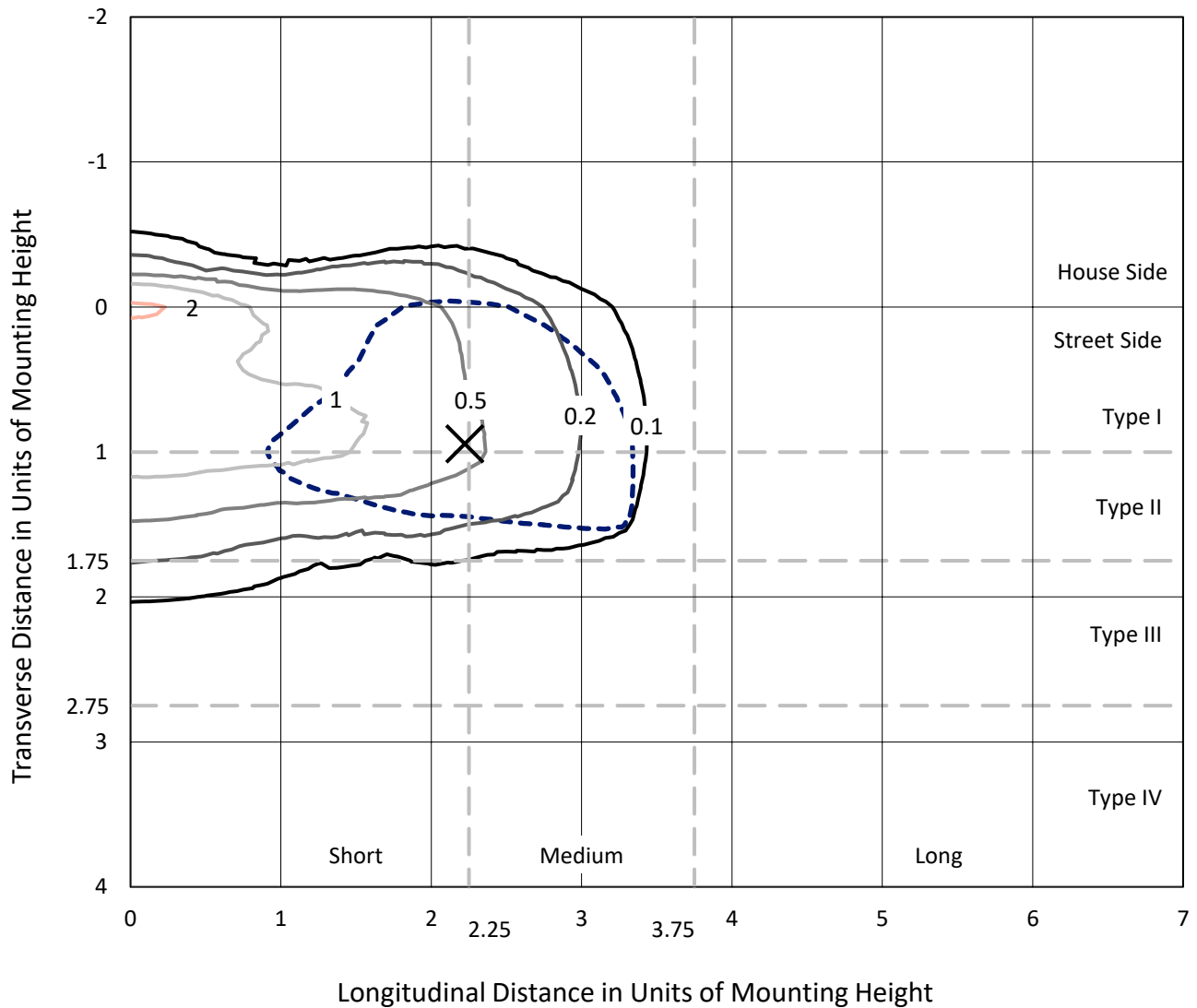
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

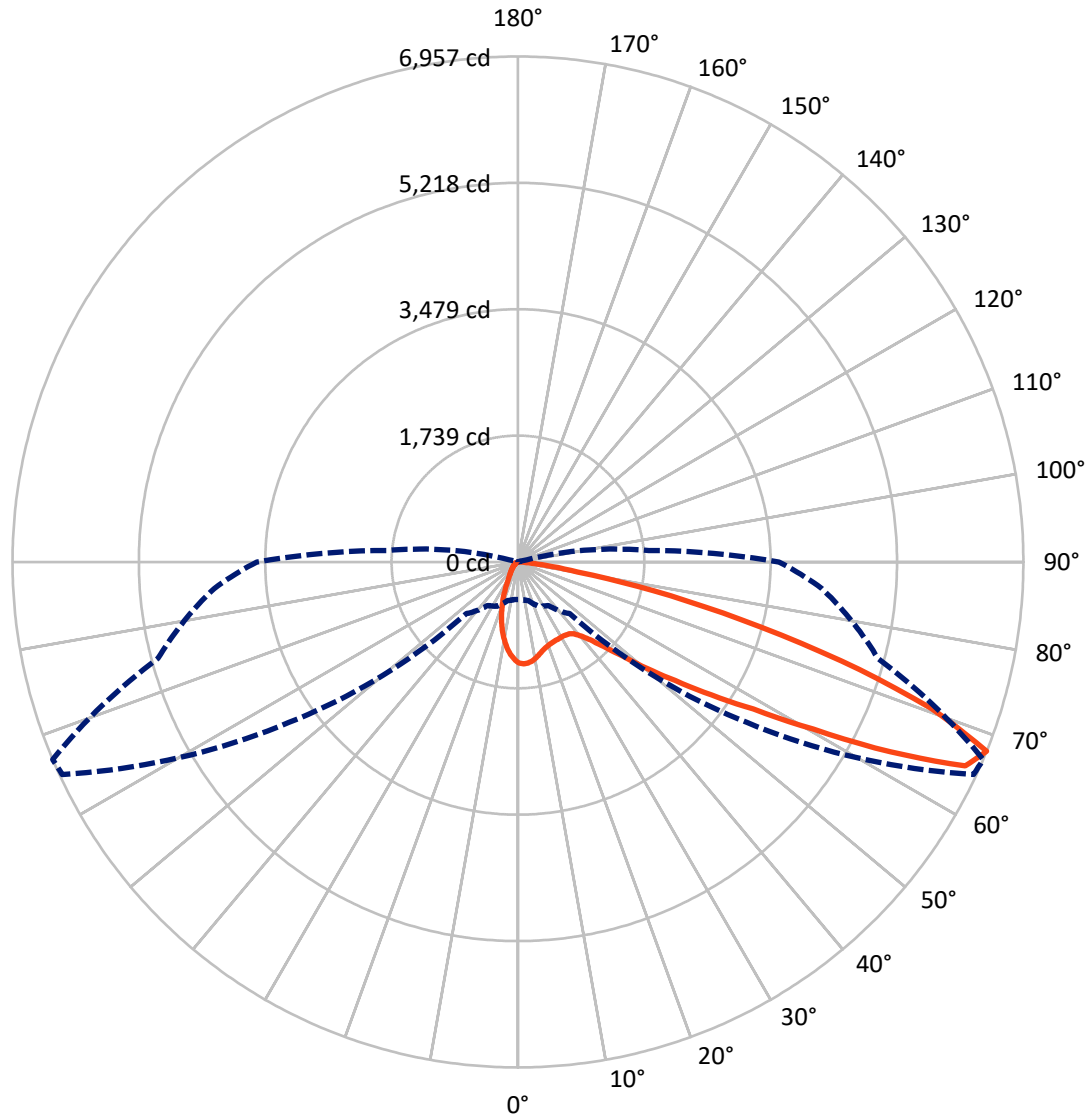
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.2 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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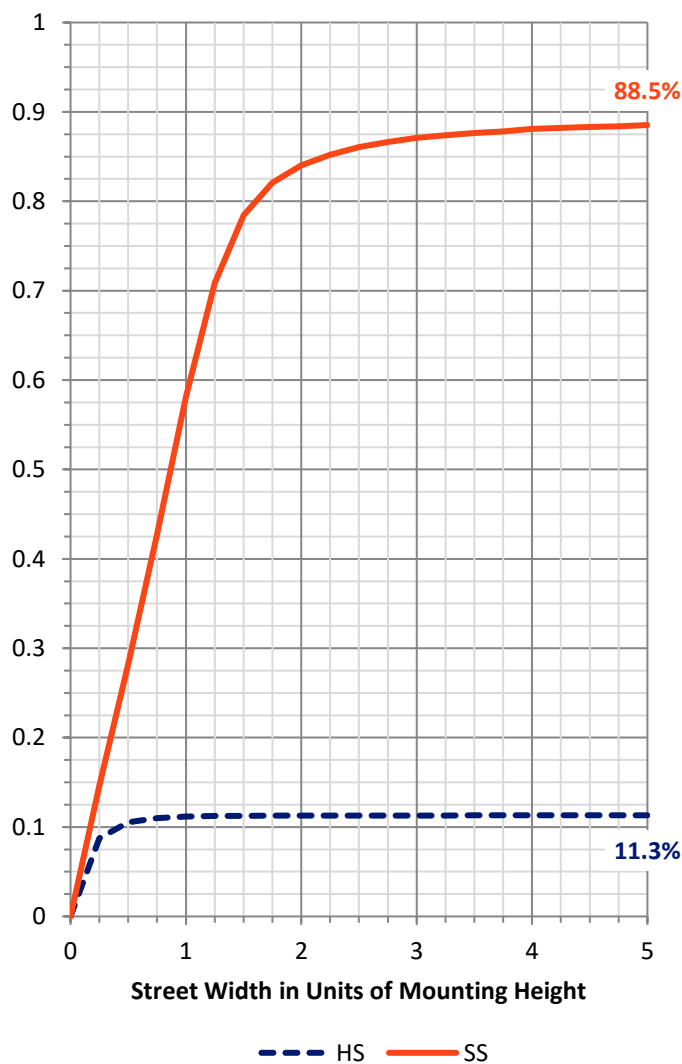
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 649.4 | 0.0 | 649.4 |
| | % Fixture | 11.4 | 0.0 | 11.4 |
| Street Side | Lumens | 5040.7 | 0.0 | 5040.7 |
| | % Fixture | 88.6 | 0.0 | 88.6 |
| Total | Lumens | 5690.0 | 0.0 | 5690.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 113.2 | 2.0 |
| 10°-20° | 245.3 | 4.3 |
| 20°-30° | 351.3 | 6.2 |
| 30°-40° | 517.1 | 9.1 |
| 40°-50° | 854.2 | 15.0 |
| 50°-60° | 1374.1 | 24.1 |
| 60°-70° | 1498.2 | 26.3 |
| 70°-80° | 681.8 | 12.0 |
| 80°-90° | 54.8 | 1.0 |
| 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° | 5690.0 | 100.0 |
| 0°-180° | 5690.0 | 100.0 |

Coefficient of Utilization



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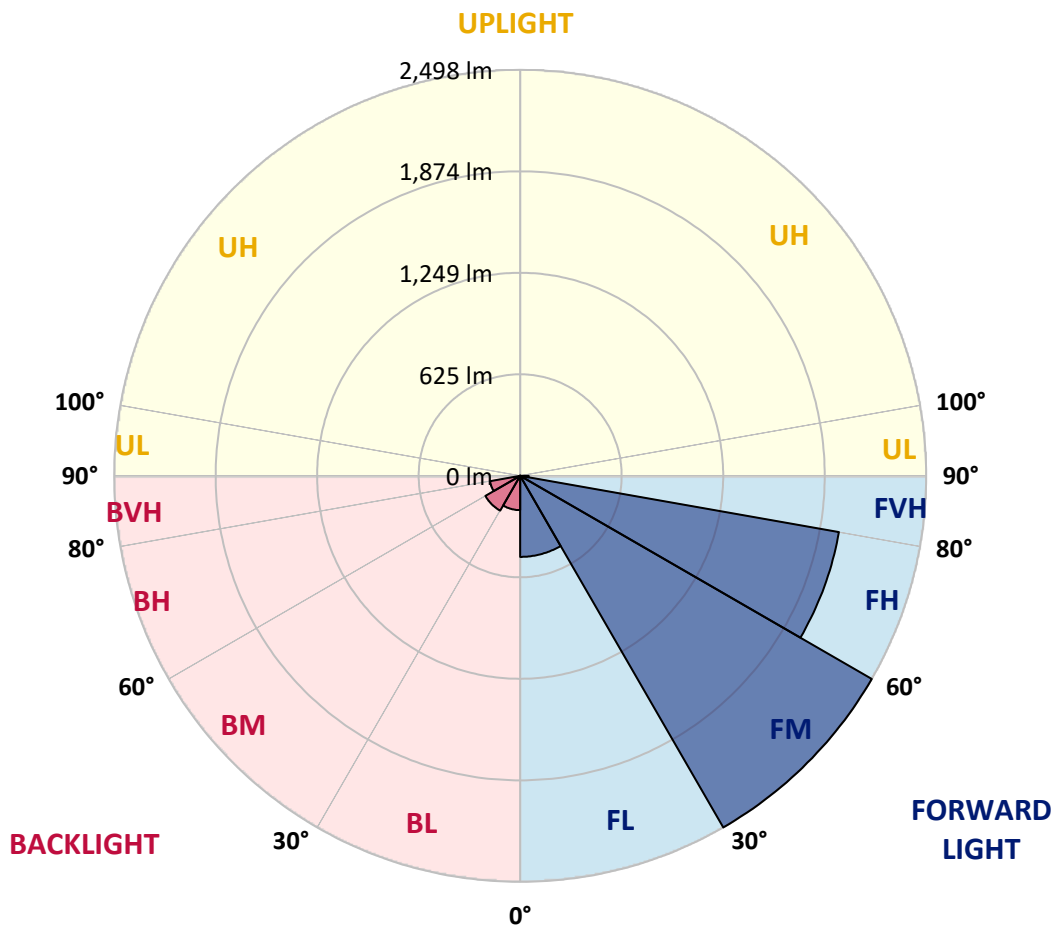
CATALOG NUMBER: ISW-SA1F-730-U-SL2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 498.8 | 8.8 | | | |
| FM (30°-60°) | 2498.2 | 43.9 | | | |
| FH (60°-80°) | 1991.5 | 35.0 | | | G2/5000 |
| FVH (80°-90°) | 52.1 | 0.9 | | | G1/100 |
| BL (0°-30°) | 210.9 | 3.7 | B1/500 | | |
| BM (30°-60°) | 247.2 | 4.3 | B1/1000 | | |
| BH (60°-80°) | 188.5 | 3.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 2.7 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 |
| 2.5° | 1370.9 | 1383.4 | 1385.9 | 1390.9 | 1390.9 | 1398.4 | 1400.9 | 1405.9 | 1403.4 | 1405.9 | 1400.9 |
| 5° | 1276.0 | 1286.0 | 1281.0 | 1306.0 | 1321.0 | 1348.4 | 1375.9 | 1398.4 | 1398.4 | 1405.9 | 1403.4 |
| 7.5° | 1181.1 | 1191.1 | 1191.1 | 1211.1 | 1236.1 | 1276.0 | 1321.0 | 1373.4 | 1378.4 | 1403.4 | 1395.9 |
| 10° | 1106.2 | 1111.2 | 1116.2 | 1138.7 | 1168.7 | 1208.6 | 1268.5 | 1336.0 | 1346.0 | 1388.4 | 1390.9 |
| 12.5° | 1046.3 | 1053.8 | 1061.3 | 1083.8 | 1111.2 | 1151.2 | 1208.6 | 1286.0 | 1303.5 | 1363.4 | 1385.9 |
| 15° | 1016.3 | 1016.3 | 1023.8 | 1043.8 | 1068.8 | 1111.2 | 1163.7 | 1253.6 | 1268.5 | 1348.4 | 1383.4 |
| 17.5° | 1001.3 | 1003.8 | 1008.8 | 1018.8 | 1038.8 | 1073.8 | 1131.2 | 1218.6 | 1238.6 | 1336.0 | 1383.4 |
| 20° | 1021.3 | 1021.3 | 1013.8 | 1018.8 | 1028.8 | 1056.3 | 1108.7 | 1193.6 | 1218.6 | 1328.5 | 1395.9 |
| 22.5° | 1063.8 | 1063.8 | 1051.3 | 1043.8 | 1036.3 | 1046.3 | 1093.7 | 1183.6 | 1206.1 | 1328.5 | 1403.4 |
| 25° | 1128.7 | 1128.7 | 1121.2 | 1098.7 | 1066.3 | 1058.8 | 1096.2 | 1181.1 | 1198.6 | 1331.0 | 1413.4 |
| 27.5° | 1206.1 | 1208.6 | 1201.1 | 1176.1 | 1126.2 | 1083.8 | 1103.7 | 1176.1 | 1196.1 | 1328.5 | 1418.4 |
| 30° | 1308.5 | 1318.5 | 1308.5 | 1273.5 | 1213.6 | 1133.7 | 1121.2 | 1173.7 | 1193.6 | 1323.5 | 1420.9 |
| 32.5° | 1410.9 | 1418.4 | 1428.4 | 1405.9 | 1321.0 | 1211.1 | 1158.7 | 1183.6 | 1201.1 | 1326.0 | 1415.9 |
| 35° | 1510.8 | 1530.7 | 1548.2 | 1555.7 | 1468.3 | 1321.0 | 1221.1 | 1206.1 | 1213.6 | 1333.5 | 1415.9 |
| 37.5° | 1618.1 | 1638.1 | 1675.6 | 1713.0 | 1640.6 | 1443.3 | 1313.5 | 1256.1 | 1256.1 | 1358.4 | 1430.9 |
| 40° | 1755.5 | 1765.5 | 1837.9 | 1882.8 | 1847.9 | 1640.6 | 1445.8 | 1341.0 | 1338.5 | 1428.4 | 1473.3 |
| 42.5° | 1887.8 | 1915.3 | 2010.2 | 2077.6 | 2055.1 | 1872.8 | 1605.7 | 1490.8 | 1465.8 | 1540.7 | 1550.7 |
| 45° | 2080.1 | 2122.6 | 2197.5 | 2297.4 | 2319.8 | 2132.5 | 1852.9 | 1683.1 | 1658.1 | 1708.0 | 1680.6 |
| 47.5° | 2259.9 | 2289.9 | 2362.3 | 2489.6 | 2619.5 | 2467.2 | 2132.5 | 1952.8 | 1930.3 | 1950.3 | 1905.3 |
| 50° | 2317.3 | 2332.3 | 2414.7 | 2572.0 | 2879.2 | 2946.6 | 2517.1 | 2302.4 | 2299.9 | 2284.9 | 2210.0 |
| 52.5° | 2217.5 | 2219.9 | 2314.8 | 2507.1 | 2986.6 | 3471.0 | 3061.5 | 2754.3 | 2711.9 | 2679.4 | 2579.5 |
| 55° | 1912.8 | 1935.3 | 2015.2 | 2254.9 | 2881.7 | 3773.2 | 3933.0 | 3301.2 | 3231.3 | 3113.9 | 2989.1 |
| 57.5° | 1495.8 | 1485.8 | 1550.7 | 1770.5 | 2559.6 | 3893.0 | 4792.0 | 3995.4 | 3820.6 | 3468.5 | 3301.2 |
| 60° | 1088.7 | 1063.8 | 1106.2 | 1231.1 | 1860.4 | 3658.3 | 5288.9 | 4974.3 | 4674.6 | 3850.6 | 3685.8 |
| 62.5° | 809.1 | 809.1 | 854.0 | 911.5 | 1141.2 | 2854.2 | 5366.3 | 6095.5 | 5758.4 | 4335.0 | 4092.8 |
| 65° | 646.8 | 644.3 | 681.7 | 769.1 | 814.1 | 1770.5 | 4976.8 | 6894.6 | 6767.2 | 4839.4 | 4360.0 |
| 67.5° | 516.9 | 516.9 | 549.4 | 669.2 | 731.7 | 1006.3 | 3850.6 | 6919.5 | 6957.0 | 5129.1 | 4197.7 |
| 70° | 364.6 | 377.1 | 417.0 | 559.4 | 706.7 | 769.1 | 2334.8 | 5943.2 | 6040.6 | 5041.7 | 3765.7 |
| 72.5° | 204.8 | 214.8 | 287.2 | 414.5 | 679.2 | 739.2 | 1306.0 | 4489.8 | 4654.6 | 4225.1 | 3071.5 |
| 75° | 97.4 | 107.4 | 167.3 | 284.7 | 566.8 | 704.2 | 794.1 | 3183.8 | 3161.4 | 2744.3 | 1907.8 |
| 77.5° | 42.5 | 47.4 | 74.9 | 164.8 | 402.0 | 656.7 | 581.8 | 1990.2 | 1900.3 | 1288.5 | 801.6 |
| 80° | 15.0 | 17.5 | 32.5 | 94.9 | 227.2 | 536.9 | 484.4 | 918.9 | 831.5 | 357.1 | 209.8 |
| 82.5° | 2.5 | 2.5 | 12.5 | 44.9 | 102.4 | 299.7 | 399.5 | 439.5 | 379.6 | 89.9 | 89.9 |
| 85° | 0.0 | 0.0 | 2.5 | 15.0 | 25.0 | 27.5 | 179.8 | 177.3 | 147.3 | 30.0 | 44.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 7.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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 CATALOG NUMBER: ISW-SA1F-730-U-SL2-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 | 1388.4 |
| 2.5° | 1388.4 | 1385.9 | 1360.9 | 1338.5 | 1308.5 | 1283.5 | 1261.1 | 1238.6 | 1228.6 | 1231.1 | 1236.1 |
| 5° | 1390.9 | 1375.9 | 1323.5 | 1266.0 | 1206.1 | 1146.2 | 1088.7 | 1053.8 | 1026.3 | 1016.3 | 1026.3 |
| 7.5° | 1378.4 | 1353.4 | 1273.5 | 1181.1 | 1086.3 | 981.4 | 894.0 | 829.0 | 781.6 | 751.6 | 764.1 |
| 10° | 1368.4 | 1331.0 | 1213.6 | 1073.8 | 938.9 | 801.6 | 676.7 | 584.3 | 519.4 | 481.9 | 474.5 |
| 12.5° | 1350.9 | 1306.0 | 1143.7 | 966.4 | 779.1 | 591.8 | 442.0 | 344.6 | 292.2 | 264.7 | 272.2 |
| 15° | 1346.0 | 1276.0 | 1073.8 | 841.5 | 609.3 | 399.5 | 267.2 | 212.3 | 189.8 | 184.8 | 184.8 |
| 17.5° | 1341.0 | 1256.1 | 998.9 | 719.2 | 437.0 | 249.7 | 184.8 | 169.8 | 164.8 | 162.3 | 164.8 |
| 20° | 1336.0 | 1228.6 | 923.9 | 586.8 | 294.7 | 179.8 | 159.8 | 152.3 | 147.3 | 147.3 | 144.8 |
| 22.5° | 1341.0 | 1211.1 | 854.0 | 462.0 | 202.3 | 152.3 | 139.8 | 134.8 | 129.9 | 127.4 | 127.4 |
| 25° | 1336.0 | 1188.6 | 769.1 | 339.6 | 157.3 | 134.8 | 124.9 | 114.9 | 109.9 | 107.4 | 104.9 |
| 27.5° | 1328.5 | 1161.2 | 689.2 | 244.7 | 137.3 | 119.9 | 107.4 | 97.4 | 89.9 | 87.4 | 87.4 |
| 30° | 1321.0 | 1126.2 | 596.8 | 179.8 | 124.9 | 107.4 | 92.4 | 82.4 | 74.9 | 69.9 | 69.9 |
| 32.5° | 1301.0 | 1093.7 | 506.9 | 144.8 | 112.4 | 94.9 | 79.9 | 67.4 | 62.4 | 59.9 | 59.9 |
| 35° | 1288.5 | 1056.3 | 412.0 | 124.9 | 102.4 | 82.4 | 67.4 | 57.4 | 52.4 | 49.9 | 49.9 |
| 37.5° | 1286.0 | 1016.3 | 327.1 | 112.4 | 92.4 | 72.4 | 57.4 | 49.9 | 44.9 | 42.5 | 42.5 |
| 40° | 1296.0 | 996.4 | 252.2 | 102.4 | 79.9 | 62.4 | 49.9 | 42.5 | 37.5 | 35.0 | 35.0 |
| 42.5° | 1336.0 | 993.9 | 192.3 | 92.4 | 72.4 | 54.9 | 44.9 | 35.0 | 30.0 | 27.5 | 27.5 |
| 45° | 1425.9 | 1008.8 | 152.3 | 84.9 | 62.4 | 47.4 | 37.5 | 30.0 | 25.0 | 22.5 | 22.5 |
| 47.5° | 1573.2 | 1071.3 | 127.4 | 77.4 | 52.4 | 40.0 | 30.0 | 25.0 | 17.5 | 17.5 | 17.5 |
| 50° | 1812.9 | 1203.6 | 112.4 | 67.4 | 44.9 | 32.5 | 25.0 | 17.5 | 12.5 | 12.5 | 12.5 |
| 52.5° | 2167.5 | 1405.9 | 102.4 | 59.9 | 37.5 | 27.5 | 20.0 | 12.5 | 10.0 | 10.0 | 10.0 |
| 55° | 2534.6 | 1658.1 | 94.9 | 49.9 | 32.5 | 22.5 | 15.0 | 10.0 | 7.5 | 7.5 | 5.0 |
| 57.5° | 2869.2 | 1865.4 | 84.9 | 42.5 | 25.0 | 17.5 | 10.0 | 7.5 | 5.0 | 5.0 | 5.0 |
| 60° | 3266.2 | 2072.6 | 72.4 | 32.5 | 20.0 | 12.5 | 7.5 | 5.0 | 2.5 | 2.5 | 2.5 |
| 62.5° | 3650.8 | 2190.0 | 59.9 | 25.0 | 15.0 | 10.0 | 5.0 | 2.5 | 2.5 | 2.5 | 2.5 |
| 65° | 3818.1 | 2135.0 | 47.4 | 20.0 | 12.5 | 7.5 | 2.5 | 2.5 | 2.5 | 0.0 | 0.0 |
| 67.5° | 3593.4 | 1805.4 | 37.5 | 15.0 | 10.0 | 5.0 | 2.5 | 2.5 | 0.0 | 0.0 | 0.0 |
| 70° | 3093.9 | 1460.8 | 30.0 | 12.5 | 7.5 | 2.5 | 2.5 | 2.5 | 0.0 | 0.0 | 0.0 |
| 72.5° | 2429.7 | 1076.3 | 25.0 | 10.0 | 5.0 | 2.5 | 2.5 | 2.5 | 0.0 | 0.0 | 0.0 |
| 75° | 1478.3 | 541.9 | 22.5 | 7.5 | 5.0 | 5.0 | 2.5 | 2.5 | 2.5 | 0.0 | 0.0 |
| 77.5° | 501.9 | 169.8 | 15.0 | 7.5 | 5.0 | 5.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 80° | 147.3 | 54.9 | 12.5 | 5.0 | 5.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 82.5° | 77.4 | 25.0 | 7.5 | 5.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 85° | 42.5 | 12.5 | 5.0 | 2.5 | 2.5 | 2.5 | 0.0 | 0.0 | 2.5 | 2.5 | 2.5 |
| 87.5° | 7.5 | 5.0 | 5.0 | 2.5 | 2.5 | 2.5 | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 |
| 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



Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-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-730-U-5WQ**
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 2993 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| Rf: | 75.7 | | | | |
| Rg: | 93.9 | | | | |



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

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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 3000K 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)