

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: P438762

Luminaire Tested: **ISW-SA1E-760-U-T3**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438762
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-8)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISW-SA1E-760-U-T3
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 70 CRI, 5700K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7069 lumens
Efficiency: N/A
Efficacy: 121.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G2

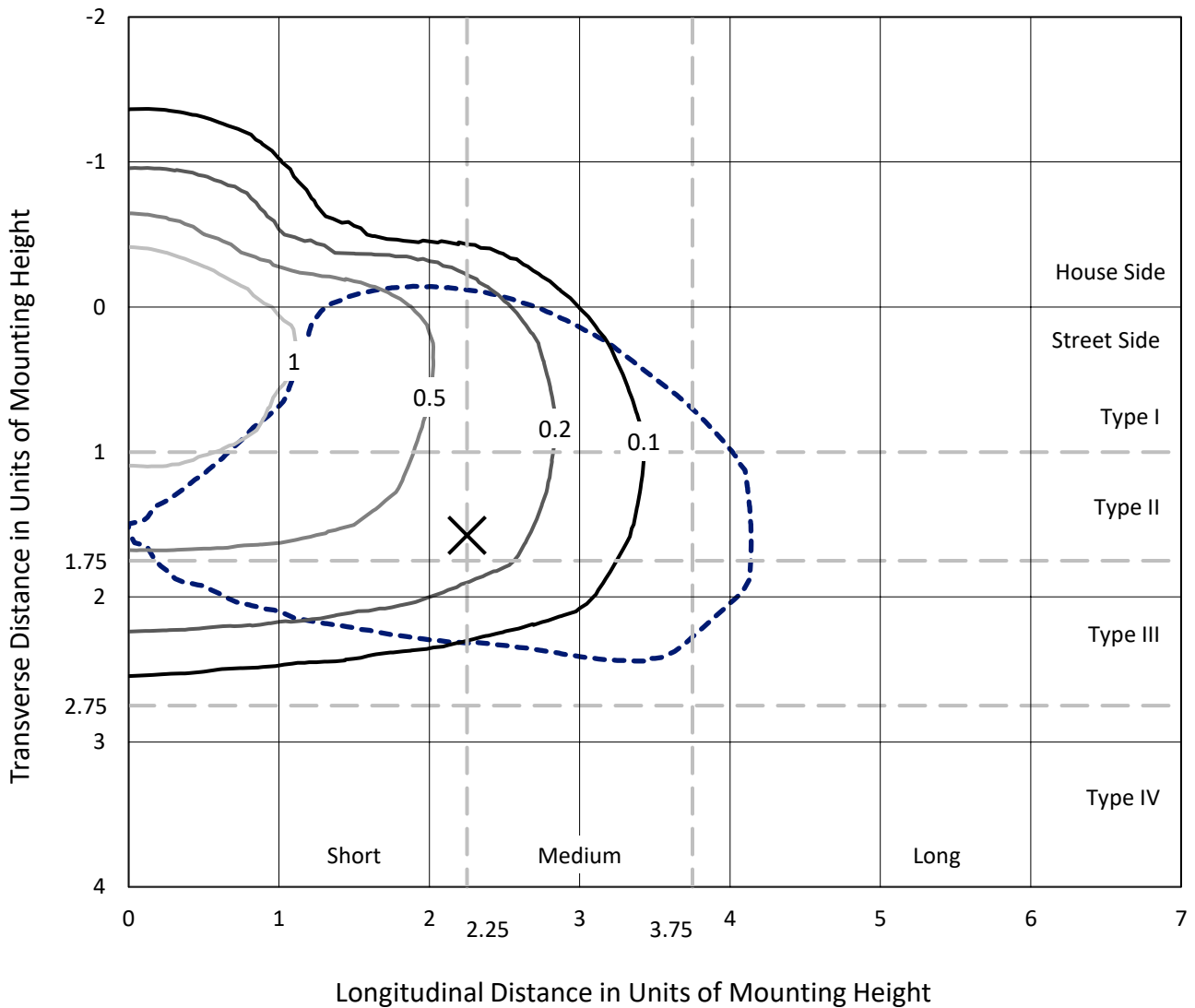
Input Watts (W): 58.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

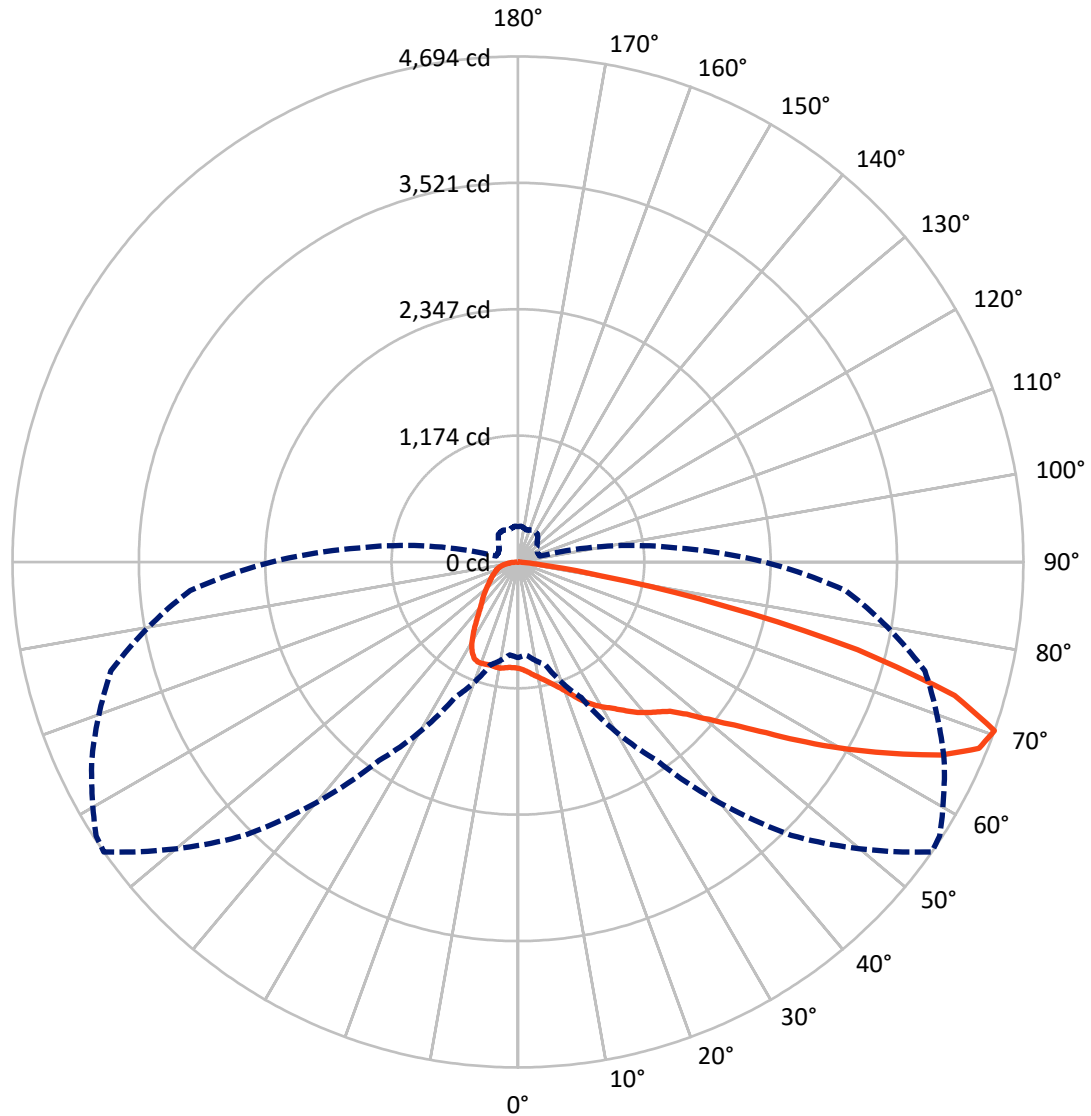
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.8 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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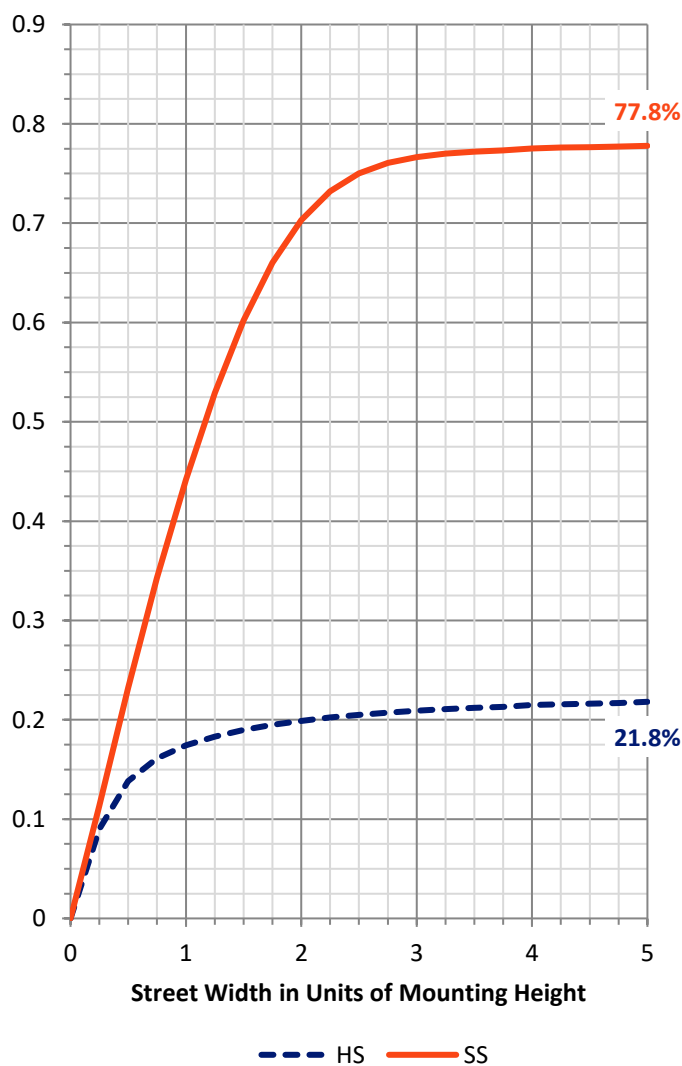
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1563.6 | 0.0 | 1563.6 |
| | % Fixture | 22.1 | 0.0 | 22.1 |
| Street Side | Lumens | 5505.4 | 0.0 | 5505.4 |
| | % Fixture | 77.9 | 0.0 | 77.9 |
| Total | Lumens | 7069.0 | 0.0 | 7069.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 97.2 | 1.4 |
| 10°-20° | 309.5 | 4.4 |
| 20°-30° | 538.2 | 7.6 |
| 30°-40° | 758.6 | 10.7 |
| 40°-50° | 1005.4 | 14.2 |
| 50°-60° | 1464.8 | 20.7 |
| 60°-70° | 1827.9 | 25.9 |
| 70°-80° | 973.5 | 13.8 |
| 80°-90° | 93.8 | 1.3 |
| 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° | 7069.0 | 100.0 |
| 0°-180° | 7069.0 | 100.0 |

Coefficient of Utilization

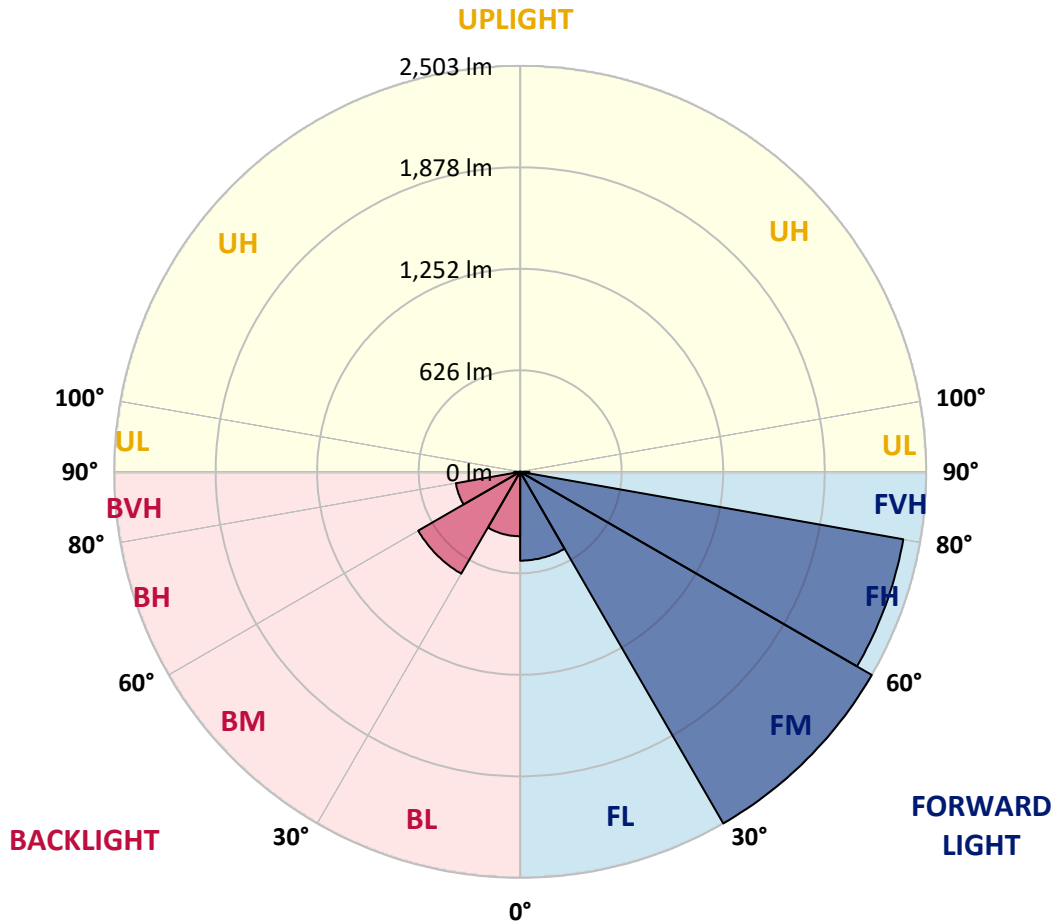


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 547.6 | 7.7 | | | |
| FM (30°-60°) | 2503.4 | 35.4 | | | |
| FH (60°-80°) | 2398.5 | 33.9 | | | G2/5000 |
| FVH (80°-90°) | 56.0 | 0.8 | | | G1/100 |
| BL (0°-30°) | 397.3 | 5.6 | B1/500 | | |
| BM (30°-60°) | 725.5 | 10.3 | B1/1000 | | |
| BH (60°-80°) | 402.9 | 5.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 37.8 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 |
| 2.5° | 1020.3 | 1017.7 | 1017.7 | 1015.2 | 1012.7 | 1010.1 | 1005.0 | 999.9 | 999.9 | 994.8 | 994.8 |
| 5° | 1045.7 | 1040.6 | 1043.2 | 1040.6 | 1040.6 | 1035.6 | 1027.9 | 1027.9 | 1025.4 | 1012.7 | 1002.5 |
| 7.5° | 1071.2 | 1068.6 | 1068.6 | 1071.2 | 1068.6 | 1063.5 | 1061.0 | 1058.5 | 1048.3 | 1033.0 | 1017.7 |
| 10° | 1106.8 | 1106.8 | 1106.8 | 1104.3 | 1104.3 | 1099.2 | 1091.5 | 1091.5 | 1078.8 | 1061.0 | 1043.2 |
| 12.5° | 1160.2 | 1157.7 | 1155.1 | 1155.1 | 1147.5 | 1137.3 | 1129.7 | 1129.7 | 1122.1 | 1094.1 | 1071.2 |
| 15° | 1221.3 | 1213.7 | 1208.6 | 1208.6 | 1198.4 | 1180.6 | 1173.0 | 1175.5 | 1167.9 | 1134.8 | 1101.7 |
| 17.5° | 1282.4 | 1282.4 | 1277.3 | 1264.5 | 1251.8 | 1239.1 | 1221.3 | 1226.4 | 1218.8 | 1185.7 | 1142.4 |
| 20° | 1338.3 | 1333.2 | 1333.2 | 1325.6 | 1307.8 | 1292.5 | 1282.4 | 1279.8 | 1274.7 | 1239.1 | 1188.2 |
| 22.5° | 1399.4 | 1396.9 | 1389.2 | 1384.1 | 1371.4 | 1363.8 | 1358.7 | 1358.7 | 1338.3 | 1290.0 | 1223.8 |
| 25° | 1473.2 | 1470.6 | 1470.6 | 1450.3 | 1440.1 | 1427.4 | 1435.0 | 1427.4 | 1417.2 | 1346.0 | 1262.0 |
| 27.5° | 1547.0 | 1547.0 | 1544.4 | 1534.3 | 1506.3 | 1498.6 | 1503.7 | 1498.6 | 1496.1 | 1399.4 | 1297.6 |
| 30° | 1625.8 | 1623.3 | 1615.7 | 1613.1 | 1585.1 | 1564.8 | 1562.2 | 1552.1 | 1552.1 | 1447.7 | 1323.1 |
| 32.5° | 1692.0 | 1689.5 | 1694.5 | 1684.4 | 1666.6 | 1638.6 | 1620.8 | 1620.8 | 1603.0 | 1496.1 | 1353.6 |
| 35° | 1753.1 | 1758.2 | 1758.2 | 1753.1 | 1737.8 | 1709.8 | 1692.0 | 1697.1 | 1671.6 | 1539.3 | 1391.8 |
| 37.5° | 1821.8 | 1816.7 | 1809.0 | 1804.0 | 1783.6 | 1770.9 | 1770.9 | 1776.0 | 1737.8 | 1585.1 | 1442.7 |
| 40° | 1837.0 | 1849.8 | 1867.6 | 1847.2 | 1837.0 | 1834.5 | 1839.6 | 1826.9 | 1788.7 | 1656.4 | 1529.2 |
| 42.5° | 1867.6 | 1877.7 | 1910.8 | 1903.2 | 1895.6 | 1903.2 | 1903.2 | 1885.4 | 1867.6 | 1753.1 | 1646.2 |
| 45° | 1943.9 | 1961.7 | 1987.1 | 1989.7 | 1987.1 | 1999.9 | 1977.0 | 1974.4 | 1971.9 | 1893.0 | 1804.0 |
| 47.5° | 2027.9 | 2048.2 | 2106.7 | 2099.1 | 2127.1 | 2152.5 | 2111.8 | 2109.3 | 2116.9 | 2078.7 | 2005.0 |
| 50° | 2127.1 | 2147.4 | 2221.2 | 2249.2 | 2325.6 | 2371.3 | 2297.6 | 2264.5 | 2317.9 | 2315.4 | 2259.4 |
| 52.5° | 2241.6 | 2267.0 | 2317.9 | 2414.6 | 2544.4 | 2592.7 | 2513.8 | 2485.8 | 2549.5 | 2580.0 | 2529.1 |
| 55° | 2320.5 | 2340.8 | 2419.7 | 2569.8 | 2781.0 | 2844.6 | 2798.8 | 2773.4 | 2842.1 | 2867.5 | 2814.1 |
| 57.5° | 2348.4 | 2353.5 | 2470.6 | 2707.2 | 2999.8 | 3162.6 | 3155.0 | 3137.2 | 3109.2 | 3172.8 | 3157.6 |
| 60° | 2300.1 | 2328.1 | 2478.2 | 2768.3 | 3195.7 | 3503.6 | 3531.6 | 3490.9 | 3455.2 | 3470.5 | 3419.6 |
| 62.5° | 2236.5 | 2259.4 | 2417.1 | 2775.9 | 3328.0 | 3811.5 | 3915.8 | 3870.0 | 3780.9 | 3740.2 | 3620.6 |
| 65° | 2012.6 | 2012.6 | 2167.8 | 2620.7 | 3305.1 | 4063.4 | 4320.3 | 4241.5 | 4078.6 | 3933.6 | 3613.0 |
| 67.5° | 1539.3 | 1531.7 | 1681.8 | 2152.5 | 2982.0 | 4088.8 | 4618.0 | 4577.3 | 4315.2 | 4007.4 | 3470.5 |
| 70° | 888.0 | 865.1 | 989.8 | 1389.2 | 2251.8 | 3590.1 | 4694.4 | 4671.5 | 4368.7 | 3913.2 | 3055.8 |
| 72.5° | 307.9 | 328.2 | 409.6 | 590.3 | 1239.1 | 2585.1 | 4241.5 | 4289.8 | 4114.2 | 3554.5 | 2455.3 |
| 75° | 160.3 | 160.3 | 188.3 | 257.0 | 524.1 | 1333.2 | 3259.3 | 3409.4 | 3447.6 | 2974.4 | 1753.1 |
| 77.5° | 117.0 | 119.6 | 134.9 | 165.4 | 249.3 | 511.4 | 1956.6 | 2099.1 | 2386.6 | 2048.2 | 1012.7 |
| 80° | 78.9 | 81.4 | 96.7 | 109.4 | 152.7 | 198.5 | 781.1 | 857.5 | 1183.1 | 916.0 | 391.8 |
| 82.5° | 58.5 | 61.1 | 61.1 | 63.6 | 84.0 | 91.6 | 206.1 | 254.4 | 407.1 | 272.2 | 139.9 |
| 85° | 12.7 | 12.7 | 25.4 | 25.4 | 25.4 | 25.4 | 45.8 | 50.9 | 76.3 | 81.4 | 45.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 5.1 | 5.1 | 5.1 | 7.6 | 7.6 |
| 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-SA1E-760-U-T3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 | 987.2 |
| 2.5° | 992.3 | 989.8 | 987.2 | 984.7 | 982.1 | 979.6 | 977.0 | 979.6 | 979.6 | 984.7 | 987.2 |
| 5° | 999.9 | 992.3 | 989.8 | 984.7 | 982.1 | 982.1 | 982.1 | 984.7 | 987.2 | 989.8 | 992.3 |
| 7.5° | 1012.7 | 1010.1 | 1002.5 | 992.3 | 989.8 | 989.8 | 984.7 | 984.7 | 984.7 | 989.8 | 989.8 |
| 10° | 1035.6 | 1027.9 | 1017.7 | 1007.6 | 999.9 | 984.7 | 971.9 | 961.8 | 966.9 | 974.5 | 974.5 |
| 12.5° | 1061.0 | 1048.3 | 1035.6 | 1017.7 | 997.4 | 971.9 | 959.2 | 961.8 | 961.8 | 969.4 | 971.9 |
| 15° | 1094.1 | 1083.9 | 1055.9 | 1025.4 | 989.8 | 969.4 | 964.3 | 959.2 | 959.2 | 964.3 | 969.4 |
| 17.5° | 1129.7 | 1111.9 | 1076.3 | 1030.5 | 994.8 | 971.9 | 961.8 | 941.4 | 931.2 | 928.7 | 933.8 |
| 20° | 1162.8 | 1142.4 | 1094.1 | 1035.6 | 999.9 | 969.4 | 933.8 | 900.7 | 875.3 | 870.2 | 865.1 |
| 22.5° | 1190.8 | 1165.3 | 1106.8 | 1045.7 | 999.9 | 944.0 | 882.9 | 834.6 | 798.9 | 788.8 | 793.8 |
| 25° | 1221.3 | 1183.1 | 1122.1 | 1055.9 | 982.1 | 893.1 | 809.1 | 750.6 | 715.0 | 699.7 | 699.7 |
| 27.5° | 1246.7 | 1208.6 | 1137.3 | 1048.3 | 936.3 | 824.4 | 727.7 | 669.2 | 641.2 | 625.9 | 623.4 |
| 30° | 1269.6 | 1228.9 | 1167.9 | 1025.4 | 870.2 | 730.2 | 646.3 | 605.6 | 587.7 | 569.9 | 572.5 |
| 32.5° | 1300.2 | 1264.5 | 1190.8 | 977.0 | 781.1 | 643.7 | 580.1 | 559.8 | 541.9 | 529.2 | 534.3 |
| 35° | 1343.4 | 1323.1 | 1198.4 | 916.0 | 689.5 | 582.7 | 539.4 | 516.5 | 501.2 | 483.4 | 483.4 |
| 37.5° | 1404.5 | 1386.7 | 1173.0 | 824.4 | 608.1 | 536.9 | 506.3 | 475.8 | 450.4 | 430.0 | 424.9 |
| 40° | 1478.3 | 1452.8 | 1129.7 | 722.6 | 544.5 | 506.3 | 478.3 | 440.2 | 404.6 | 376.6 | 371.5 |
| 42.5° | 1595.3 | 1521.5 | 1066.1 | 618.3 | 498.7 | 480.9 | 442.7 | 394.4 | 358.8 | 338.4 | 333.3 |
| 45° | 1720.0 | 1600.4 | 974.5 | 529.2 | 463.1 | 450.4 | 407.1 | 358.8 | 333.3 | 318.0 | 315.5 |
| 47.5° | 1877.7 | 1686.9 | 888.0 | 463.1 | 422.4 | 419.8 | 368.9 | 338.4 | 318.0 | 307.9 | 305.3 |
| 50° | 2086.4 | 1796.3 | 801.5 | 412.2 | 386.7 | 379.1 | 351.1 | 325.7 | 310.4 | 302.8 | 300.2 |
| 52.5° | 2328.1 | 1923.5 | 732.8 | 374.0 | 353.7 | 348.6 | 340.9 | 320.6 | 310.4 | 302.8 | 300.2 |
| 55° | 2557.1 | 2055.8 | 659.0 | 338.4 | 325.7 | 330.8 | 335.9 | 320.6 | 313.0 | 307.9 | 302.8 |
| 57.5° | 2809.0 | 2167.8 | 575.0 | 310.4 | 302.8 | 315.5 | 330.8 | 323.1 | 318.0 | 310.4 | 307.9 |
| 60° | 2964.2 | 2246.7 | 463.1 | 285.0 | 285.0 | 302.8 | 323.1 | 318.0 | 307.9 | 307.9 | 307.9 |
| 62.5° | 3032.9 | 2234.0 | 366.4 | 259.5 | 264.6 | 287.5 | 310.4 | 305.3 | 297.7 | 310.4 | 310.4 |
| 65° | 2943.8 | 2088.9 | 297.7 | 236.6 | 244.3 | 267.2 | 297.7 | 297.7 | 297.7 | 318.0 | 318.0 |
| 67.5° | 2712.3 | 1870.1 | 244.3 | 216.3 | 223.9 | 251.9 | 297.7 | 315.5 | 313.0 | 335.9 | 335.9 |
| 70° | 2289.9 | 1483.4 | 211.2 | 201.0 | 211.2 | 251.9 | 315.5 | 325.7 | 307.9 | 333.3 | 328.2 |
| 72.5° | 1745.4 | 1035.6 | 188.3 | 185.7 | 198.5 | 244.3 | 318.0 | 313.0 | 290.1 | 297.7 | 290.1 |
| 75° | 1147.5 | 628.5 | 165.4 | 170.5 | 175.6 | 216.3 | 302.8 | 292.6 | 264.6 | 259.5 | 254.4 |
| 77.5° | 631.0 | 315.5 | 145.0 | 152.7 | 152.7 | 183.2 | 274.8 | 251.9 | 229.0 | 216.3 | 211.2 |
| 80° | 251.9 | 160.3 | 127.2 | 134.9 | 124.7 | 147.6 | 206.1 | 195.9 | 175.6 | 165.4 | 160.3 |
| 82.5° | 114.5 | 89.1 | 106.9 | 112.0 | 94.1 | 109.4 | 152.7 | 147.6 | 132.3 | 114.5 | 109.4 |
| 85° | 43.3 | 50.9 | 81.4 | 76.3 | 66.2 | 63.6 | 86.5 | 78.9 | 63.6 | 50.9 | 50.9 |
| 87.5° | 5.1 | 10.2 | 20.4 | 28.0 | 15.3 | 10.2 | 5.1 | 2.5 | 2.5 | 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



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

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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)