

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: P631103

Luminaire Tested: GWS-SA1F-722-U-SL3-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P631103
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-32)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1F-722-U-SL3-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (16) 2200K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3629.7 lumens
Efficiency: N/A
Efficacy: 54.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G0

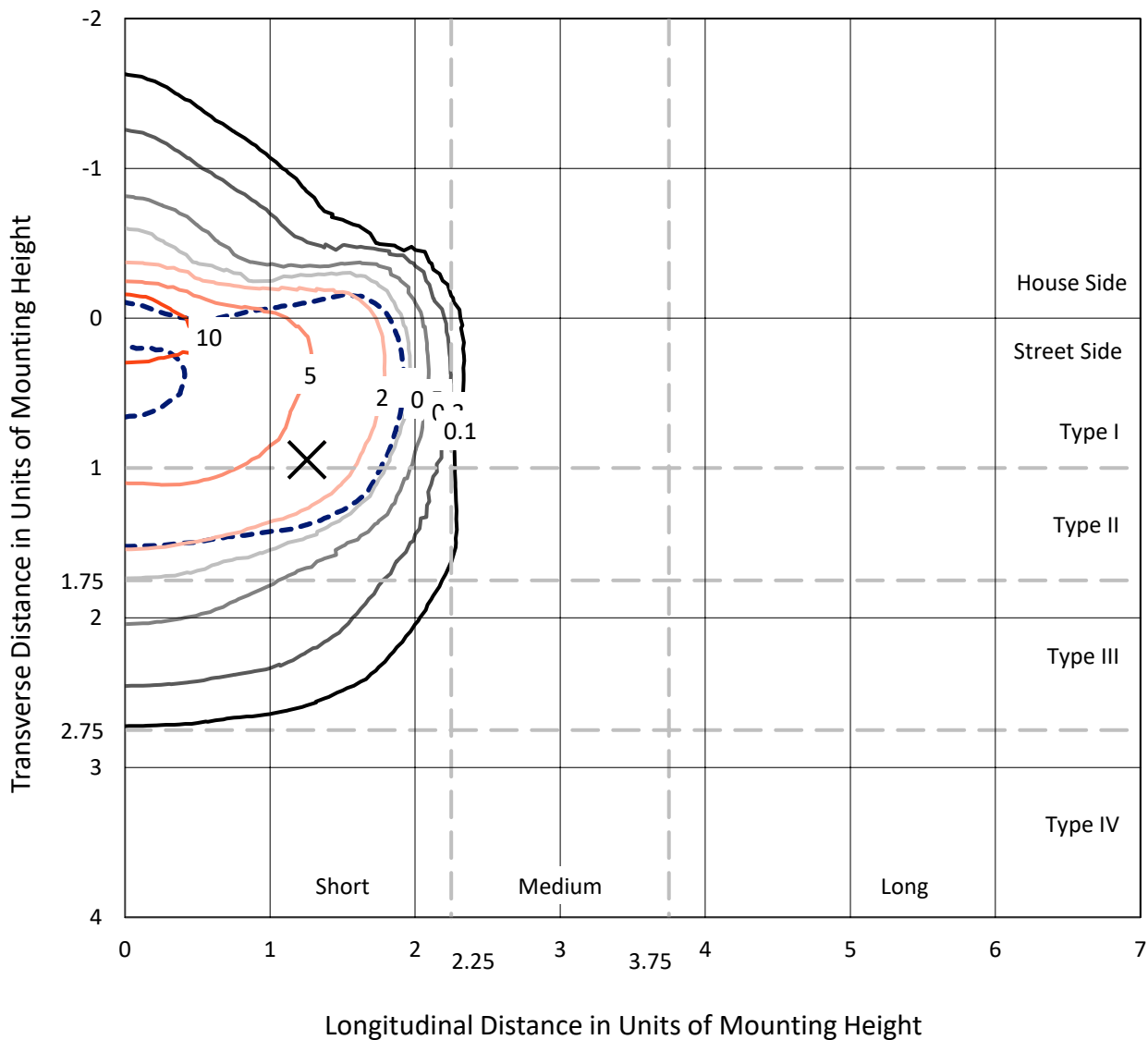
Input Watts (W): 67.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

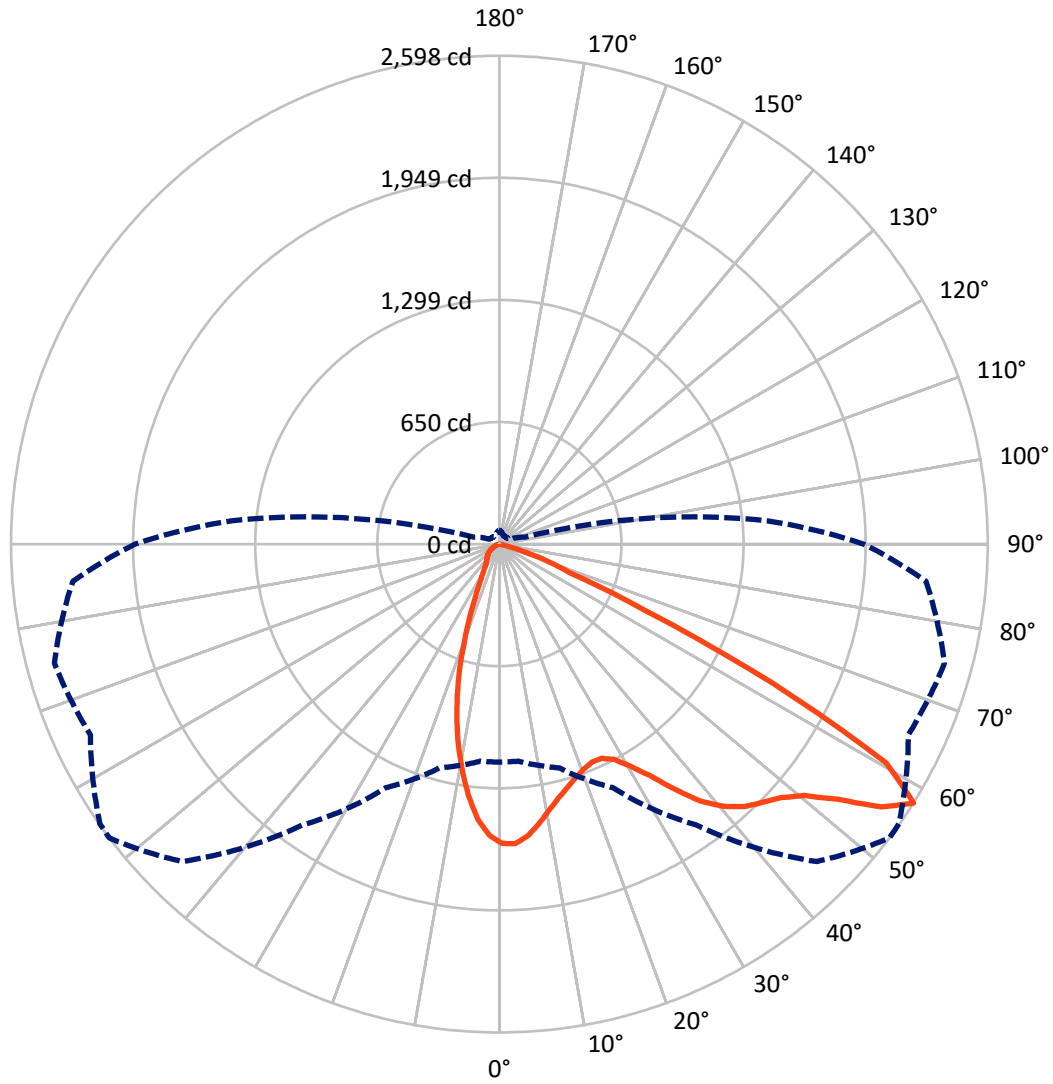
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 15.9 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



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

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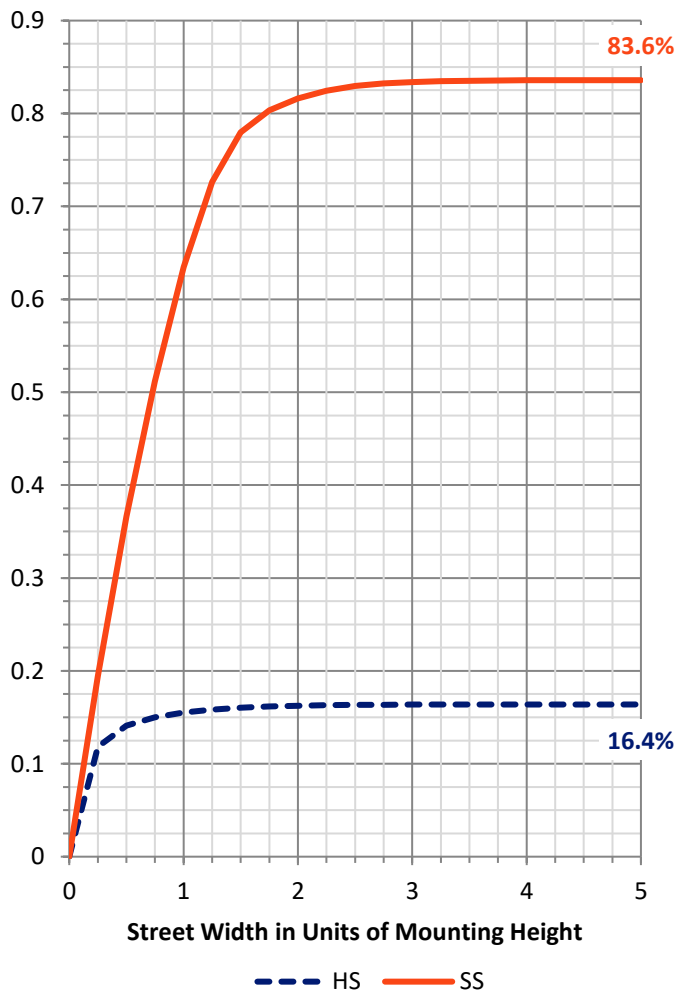
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 599.6 | 0.0 | 599.6 |
| | % Fixture | 16.5 | 0.0 | 16.5 |
| Street Side | Lumens | 3030.1 | 0.0 | 3030.1 |
| | % Fixture | 83.5 | 0.0 | 83.5 |
| Total | Lumens | 3629.7 | 0.0 | 3629.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 136.2 | 3.8 |
| 10°-20° | 299.1 | 8.2 |
| 20°-30° | 389.6 | 10.7 |
| 30°-40° | 565.1 | 15.6 |
| 40°-50° | 815.4 | 22.5 |
| 50°-60° | 986.2 | 27.2 |
| 60°-70° | 401.9 | 11.1 |
| 70°-80° | 36.1 | 1.0 |
| 80°-90° | 0.0 | 0.0 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 3629.7 | 100.0 |
| 0°-180° | 3629.7 | 100.0 |

Coefficient of Utilization



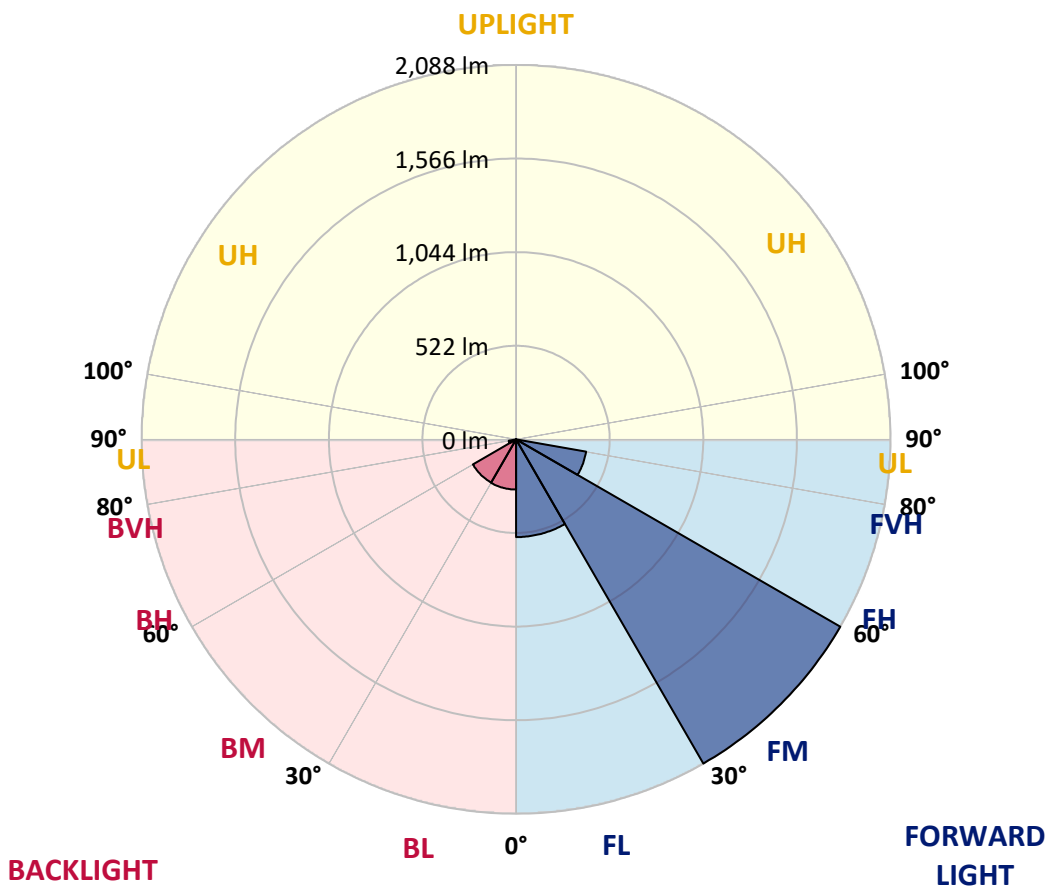
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 545.1 | 15.0 | | | |
| FM (30°-60°) | 2088.5 | 57.5 | | | |
| FH (60°-80°) | 396.6 | 10.9 | | | G0/660 |
| FVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL (0°-30°) | 279.8 | 7.7 | B1/500 | | |
| BM (30°-60°) | 278.3 | 7.7 | B1/1000 | | |
| BH (60°-80°) | 41.4 | 1.1 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G0
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 53° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 |
| 2.5° | 1569.9 | 1573.5 | 1579.7 | 1587.7 | 1593.1 | 1595.8 | 1595.8 | 1603.3 | 1598.4 | 1594.4 | 1590.0 |
| 5° | 1502.8 | 1506.3 | 1514.8 | 1527.7 | 1540.6 | 1549.9 | 1560.6 | 1568.6 | 1571.7 | 1571.7 | 1564.2 |
| 7.5° | 1408.0 | 1412.9 | 1418.2 | 1436.0 | 1464.1 | 1485.0 | 1503.2 | 1514.8 | 1531.7 | 1537.0 | 1526.4 |
| 10° | 1306.1 | 1311.0 | 1323.0 | 1347.5 | 1379.5 | 1410.7 | 1441.8 | 1456.5 | 1485.4 | 1500.5 | 1488.5 |
| 12.5° | 1219.8 | 1222.1 | 1238.1 | 1267.4 | 1308.4 | 1351.1 | 1388.9 | 1404.0 | 1444.9 | 1467.6 | 1453.4 |
| 15° | 1148.7 | 1150.0 | 1166.0 | 1198.5 | 1245.6 | 1298.1 | 1345.7 | 1361.3 | 1411.6 | 1445.8 | 1424.5 |
| 17.5° | 1094.8 | 1095.3 | 1109.1 | 1144.2 | 1193.6 | 1251.9 | 1308.4 | 1327.5 | 1392.4 | 1433.8 | 1401.8 |
| 20° | 1067.7 | 1066.4 | 1076.1 | 1106.8 | 1153.6 | 1211.8 | 1278.6 | 1302.1 | 1381.8 | 1432.0 | 1384.4 |
| 22.5° | 1068.1 | 1065.0 | 1069.0 | 1090.8 | 1130.4 | 1185.1 | 1259.9 | 1286.6 | 1382.7 | 1439.6 | 1369.8 |
| 25° | 1093.5 | 1089.0 | 1089.9 | 1101.5 | 1129.5 | 1179.4 | 1262.5 | 1291.0 | 1400.5 | 1465.0 | 1364.4 |
| 27.5° | 1136.2 | 1131.3 | 1131.3 | 1137.1 | 1152.2 | 1197.6 | 1295.9 | 1328.4 | 1448.1 | 1514.3 | 1375.5 |
| 30° | 1191.4 | 1186.5 | 1184.7 | 1190.5 | 1202.9 | 1244.7 | 1370.2 | 1404.0 | 1529.5 | 1595.3 | 1411.1 |
| 32.5° | 1254.5 | 1248.8 | 1251.9 | 1259.9 | 1271.9 | 1329.7 | 1465.8 | 1510.8 | 1631.3 | 1704.3 | 1475.2 |
| 35° | 1321.3 | 1316.4 | 1330.6 | 1348.0 | 1366.6 | 1447.6 | 1598.0 | 1637.1 | 1756.4 | 1840.0 | 1573.1 |
| 37.5° | 1384.9 | 1382.7 | 1412.5 | 1448.9 | 1487.6 | 1589.1 | 1732.3 | 1762.6 | 1863.6 | 1987.7 | 1692.7 |
| 40° | 1448.5 | 1448.1 | 1499.2 | 1563.3 | 1625.1 | 1730.1 | 1834.2 | 1859.1 | 1929.0 | 2102.5 | 1807.5 |
| 42.5° | 1519.7 | 1519.7 | 1590.4 | 1675.8 | 1758.1 | 1849.3 | 1908.9 | 1920.1 | 1958.3 | 2168.7 | 1893.8 |
| 45° | 1587.7 | 1591.7 | 1673.6 | 1772.8 | 1870.2 | 1942.3 | 1960.5 | 1961.4 | 1970.3 | 2207.9 | 1965.4 |
| 47.5° | 1641.6 | 1645.1 | 1743.0 | 1857.3 | 1962.3 | 2013.0 | 2015.7 | 2011.7 | 2001.9 | 2245.3 | 2020.6 |
| 50° | 1685.2 | 1690.5 | 1792.8 | 1913.8 | 2025.5 | 2081.1 | 2101.6 | 2097.6 | 2072.7 | 2285.3 | 2059.3 |
| 52.5° | 1706.5 | 1714.1 | 1810.2 | 1941.9 | 2095.8 | 2197.7 | 2254.6 | 2263.9 | 2178.5 | 2307.5 | 2096.2 |
| 55° | 1535.7 | 1546.8 | 1635.3 | 1815.5 | 2134.9 | 2377.8 | 2467.3 | 2465.5 | 2293.3 | 2373.8 | 2186.1 |
| 57.5° | 1159.8 | 1158.9 | 1232.3 | 1429.4 | 1823.5 | 2388.1 | 2598.0 | 2594.5 | 2400.5 | 2450.8 | 2278.2 |
| 60° | 789.6 | 784.3 | 803.9 | 899.1 | 1275.0 | 1945.4 | 2364.5 | 2412.5 | 2324.5 | 2263.9 | 1934.3 |
| 62.5° | 650.0 | 645.1 | 638.8 | 612.6 | 732.3 | 1211.8 | 1633.6 | 1706.5 | 1695.0 | 1573.5 | 1213.2 |
| 65° | 532.1 | 536.1 | 553.4 | 542.3 | 509.4 | 621.5 | 847.9 | 891.1 | 814.6 | 685.5 | 424.0 |
| 67.5° | 392.4 | 394.2 | 416.8 | 475.6 | 457.8 | 413.7 | 399.0 | 406.2 | 238.0 | 109.4 | 70.7 |
| 70° | 231.8 | 233.1 | 254.0 | 332.8 | 371.5 | 317.6 | 269.6 | 265.6 | 94.3 | 29.4 | 32.0 |
| 72.5° | 131.2 | 128.6 | 132.6 | 158.4 | 202.4 | 168.6 | 138.8 | 126.3 | 28.5 | 16.5 | 16.5 |
| 75° | 62.3 | 60.5 | 52.0 | 48.9 | 44.5 | 28.5 | 17.8 | 15.1 | 7.1 | 6.7 | 6.7 |
| 77.5° | 0.4 | 1.3 | 0.9 | 1.3 | 1.3 | 0.9 | 0.4 | 0.4 | 1.3 | 1.3 | 1.8 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P631103

CATALOG NUMBER: GWS-SA1F-722-U-SL3-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 | 1592.2 |
| 2.5° | 1582.0 | 1568.6 | 1565.5 | 1564.6 | 1552.2 | 1538.8 | 1525.0 | 1519.7 | 1511.7 | 1506.8 | 1510.8 |
| 5° | 1552.2 | 1533.0 | 1516.1 | 1500.5 | 1473.0 | 1442.7 | 1416.5 | 1399.6 | 1383.5 | 1372.9 | 1375.5 |
| 7.5° | 1509.9 | 1485.0 | 1446.3 | 1406.7 | 1356.0 | 1310.6 | 1259.9 | 1228.7 | 1199.8 | 1183.8 | 1191.4 |
| 10° | 1465.0 | 1432.0 | 1370.2 | 1303.0 | 1223.4 | 1152.2 | 1079.7 | 1020.5 | 986.3 | 953.8 | 957.4 |
| 12.5° | 1420.9 | 1377.3 | 1284.8 | 1182.9 | 1082.4 | 977.4 | 867.9 | 786.1 | 730.0 | 689.6 | 683.3 |
| 15° | 1380.0 | 1323.9 | 1201.6 | 1067.2 | 930.2 | 790.5 | 650.8 | 533.8 | 468.9 | 428.9 | 426.2 |
| 17.5° | 1343.5 | 1274.1 | 1115.3 | 946.2 | 774.5 | 595.7 | 435.1 | 347.4 | 310.1 | 292.7 | 290.9 |
| 20° | 1308.4 | 1223.8 | 1027.2 | 823.5 | 604.6 | 418.2 | 300.3 | 259.8 | 247.8 | 240.7 | 241.6 |
| 22.5° | 1274.6 | 1169.1 | 934.7 | 687.3 | 453.3 | 293.6 | 232.7 | 217.1 | 215.8 | 216.7 | 217.1 |
| 25° | 1246.1 | 1118.9 | 839.5 | 556.1 | 323.4 | 223.8 | 194.4 | 190.0 | 194.0 | 199.7 | 200.6 |
| 27.5° | 1231.4 | 1077.9 | 746.5 | 424.0 | 234.0 | 182.0 | 168.6 | 170.4 | 177.5 | 183.7 | 184.6 |
| 30° | 1235.4 | 1047.2 | 650.4 | 307.4 | 180.2 | 153.5 | 149.0 | 152.6 | 159.7 | 165.5 | 166.4 |
| 32.5° | 1263.9 | 1031.7 | 552.1 | 223.8 | 148.1 | 133.9 | 132.1 | 134.8 | 141.0 | 145.5 | 145.9 |
| 35° | 1320.4 | 1035.2 | 458.7 | 171.3 | 127.2 | 119.2 | 118.8 | 120.6 | 123.7 | 126.8 | 127.2 |
| 37.5° | 1403.6 | 1064.1 | 366.6 | 142.4 | 115.2 | 109.4 | 107.7 | 107.7 | 109.9 | 111.2 | 112.1 |
| 40° | 1493.0 | 1107.7 | 293.6 | 125.9 | 106.8 | 100.5 | 97.0 | 95.6 | 97.4 | 99.2 | 99.7 |
| 42.5° | 1566.8 | 1151.3 | 238.5 | 114.3 | 100.1 | 91.6 | 87.2 | 86.3 | 88.5 | 91.6 | 92.5 |
| 45° | 1623.3 | 1185.1 | 198.9 | 105.0 | 92.5 | 83.2 | 78.3 | 78.3 | 82.3 | 87.6 | 88.5 |
| 47.5° | 1674.9 | 1212.3 | 169.5 | 96.5 | 85.4 | 75.6 | 70.7 | 71.6 | 78.3 | 85.4 | 86.7 |
| 50° | 1710.1 | 1234.1 | 147.7 | 89.0 | 79.6 | 69.4 | 65.0 | 66.7 | 74.7 | 83.2 | 84.5 |
| 52.5° | 1747.9 | 1260.8 | 133.5 | 82.3 | 74.3 | 64.5 | 60.5 | 61.8 | 70.7 | 80.1 | 81.9 |
| 55° | 1852.4 | 1350.2 | 133.0 | 73.4 | 65.0 | 57.8 | 56.1 | 56.5 | 65.4 | 76.1 | 78.3 |
| 57.5° | 1937.9 | 1428.9 | 141.9 | 61.8 | 54.3 | 50.7 | 49.8 | 50.3 | 58.3 | 70.3 | 73.0 |
| 60° | 1603.3 | 1110.4 | 117.4 | 51.2 | 45.4 | 44.5 | 43.2 | 44.0 | 51.6 | 62.3 | 64.5 |
| 62.5° | 948.9 | 634.8 | 56.1 | 39.1 | 38.7 | 37.8 | 36.5 | 38.3 | 45.4 | 54.7 | 56.1 |
| 65° | 324.3 | 188.2 | 35.6 | 32.0 | 32.9 | 31.6 | 30.3 | 32.0 | 38.3 | 43.6 | 44.0 |
| 67.5° | 62.3 | 49.8 | 28.5 | 26.7 | 27.1 | 24.5 | 24.0 | 25.8 | 29.4 | 30.3 | 29.8 |
| 70° | 32.5 | 28.9 | 21.8 | 21.8 | 20.9 | 17.3 | 17.3 | 19.1 | 19.1 | 17.8 | 17.3 |
| 72.5° | 16.9 | 16.0 | 14.2 | 16.0 | 13.3 | 10.7 | 10.7 | 11.6 | 10.7 | 8.9 | 8.9 |
| 75° | 6.7 | 6.7 | 6.2 | 8.0 | 5.8 | 4.9 | 4.4 | 5.3 | 4.0 | 3.1 | 3.1 |
| 77.5° | 1.8 | 1.8 | 1.8 | 2.2 | 1.3 | 1.3 | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 80° | 0.0 | 0.4 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

Test Information

Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-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-722-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): 2237
 CIE u': 0.2876
 CIE v': 0.5346
 Duv: -0.0006
 CIE x: 0.5005
 CIE y: 0.4134
 CIE z: 0.0860
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 587
 Purity: 74.5
 Rf: 69.8
 Rg: 99.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.9 | R9: | -17.4 |
| R2: | 83.0 | R10: | 61.3 |
| R3: | 95.2 | R11: | 59.8 |
| R4: | 66.2 | R12: | 50.5 |
| R5: | 65.9 | R13: | 71.1 |
| R6: | 76.3 | R14: | 96.9 |
| R7: | 76.7 | | |
| R8: | 43.8 | | |



Test Conditions

Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/41%
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-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 |

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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 2200K 4-step quadrangle

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Photopic Flux vs. Wavelength



#####

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1470.8 M/P: 0.27

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

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Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_9 = -17.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)