

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: P437555

Luminaire Tested: **ISC-SA1D-760-U-SL3**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437555
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-16)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISC-SA1D-760-U-SL3
Description: IMPACT ELITE LED CYLINDER LUMINAIRE
(1) 70 CRI, 5700K, 800mA LIGHTSQUARE WITH 16 LEDS AND TYPE III SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5660 lumens
Efficiency: N/A
Efficacy: 125.2 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

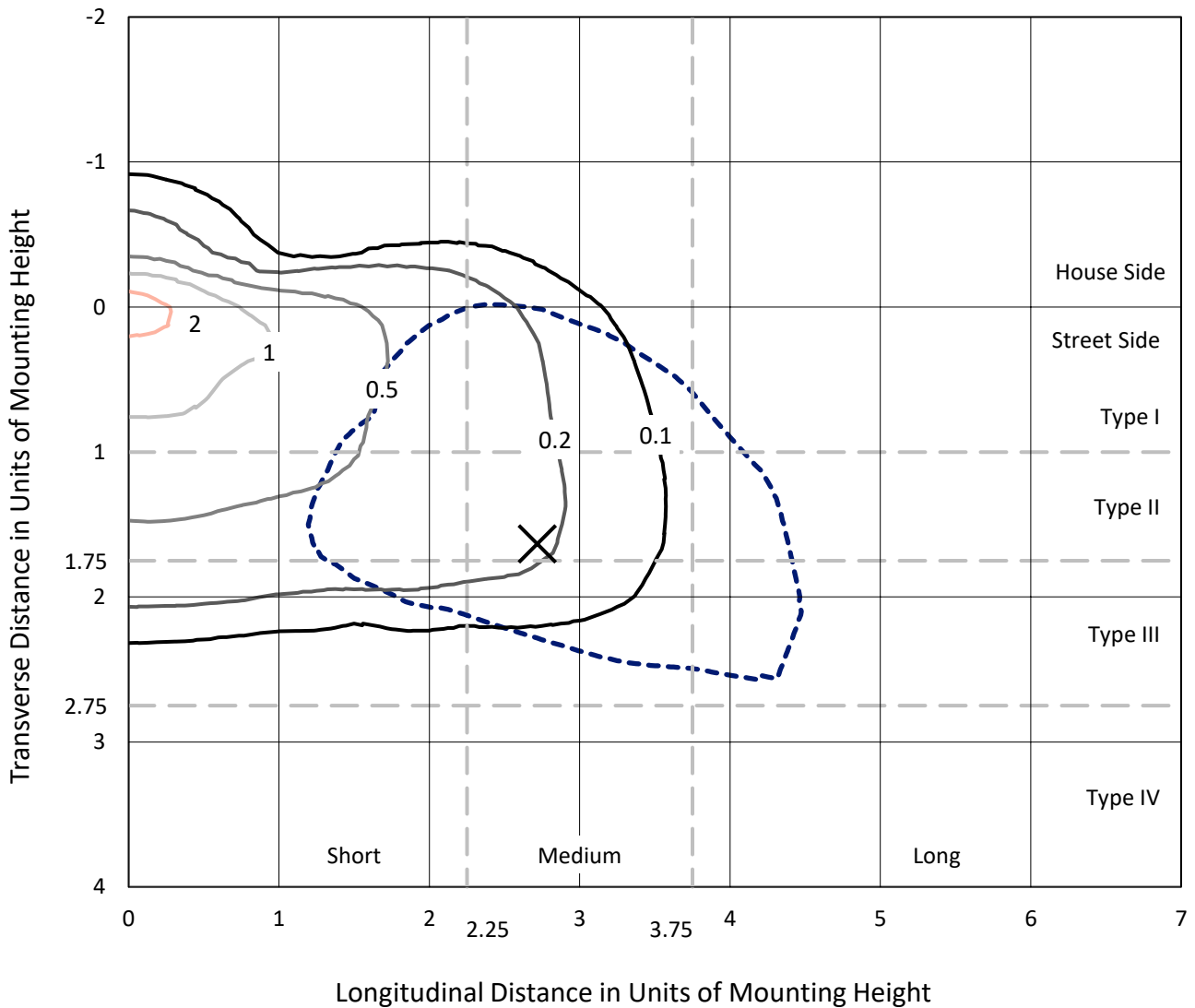
Input Watts (W): 45.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

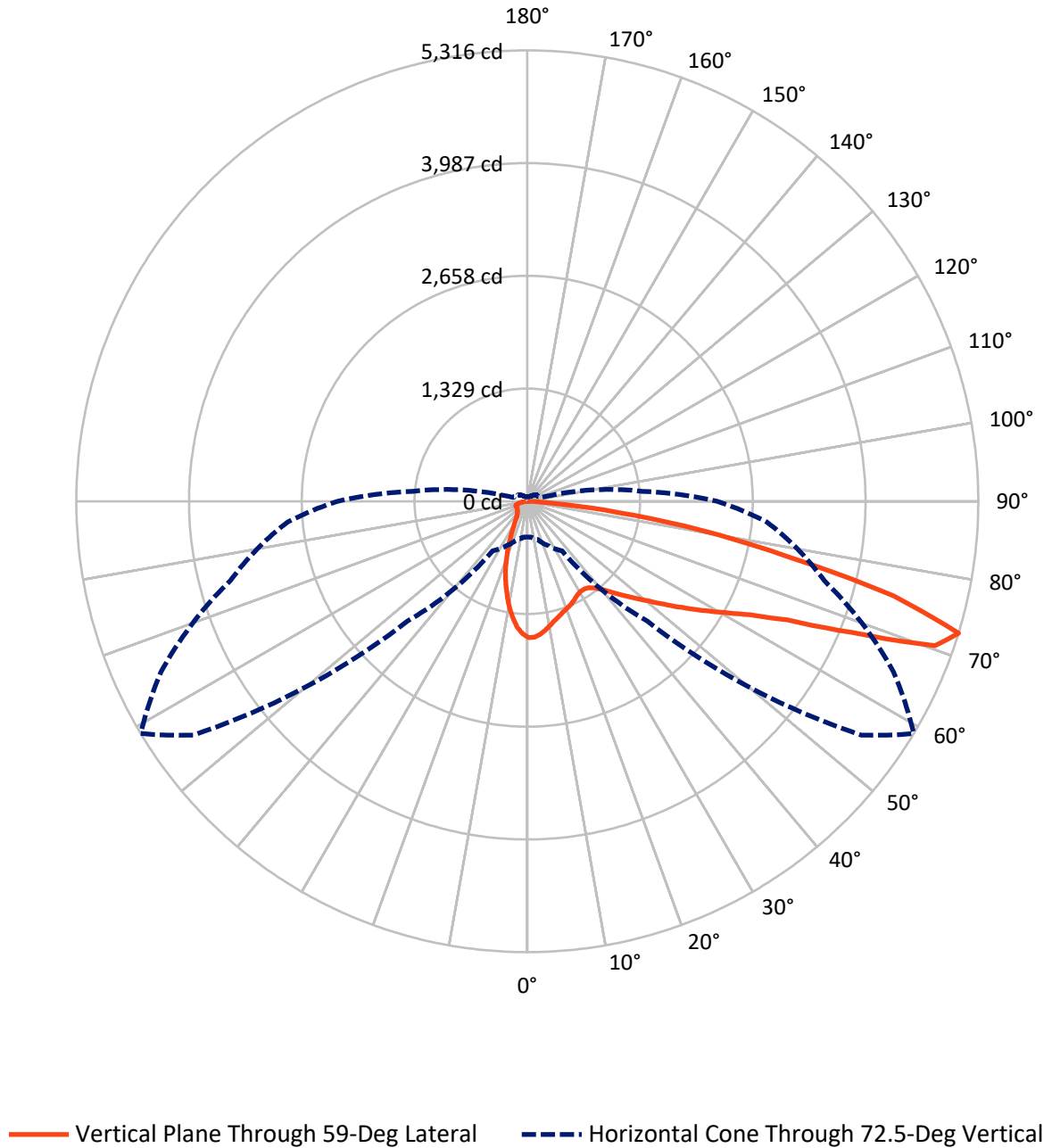
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.6 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



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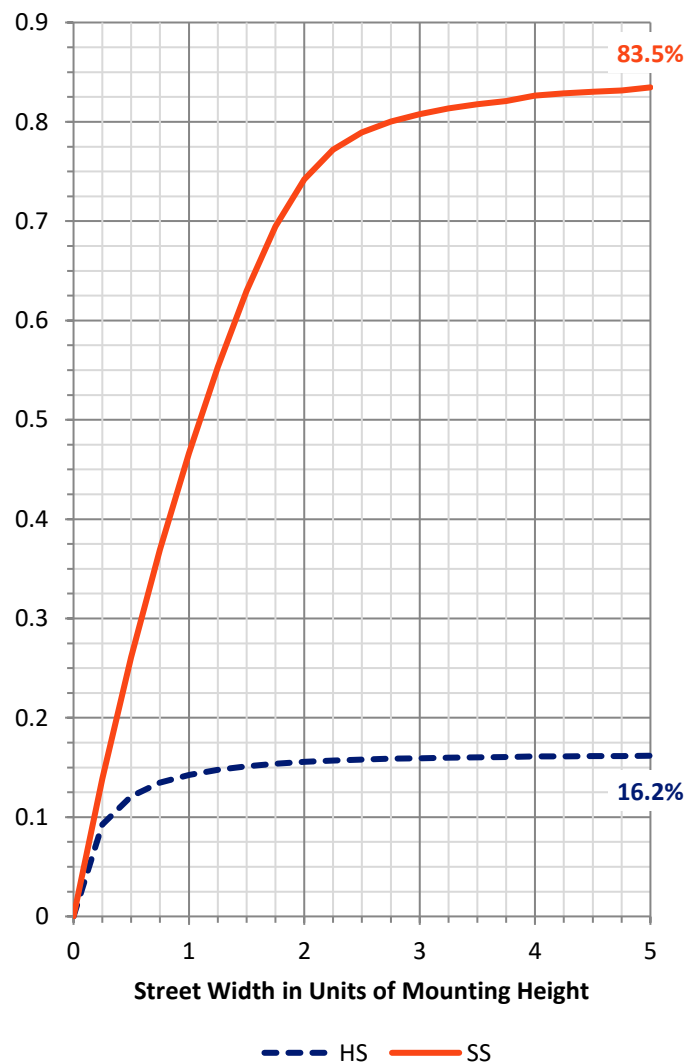
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 923.9 | 0.0 | 923.9 |
| | % Fixture | 16.3 | 0.0 | 16.3 |
| Street Side | Lumens | 4736.1 | 0.0 | 4736.1 |
| | % Fixture | 83.7 | 0.0 | 83.7 |
| Total | Lumens | 5660.0 | 0.0 | 5660.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 137.9 | 2.4 |
| 10°-20° | 309.8 | 5.5 |
| 20°-30° | 399.1 | 7.1 |
| 30°-40° | 510.7 | 9.0 |
| 40°-50° | 708.6 | 12.5 |
| 50°-60° | 1044.5 | 18.5 |
| 60°-70° | 1405.4 | 24.8 |
| 70°-80° | 1022.4 | 18.1 |
| 80°-90° | 121.6 | 2.1 |
| 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° | 5660.0 | 100.0 |
| 0°-180° | 5660.0 | 100.0 |

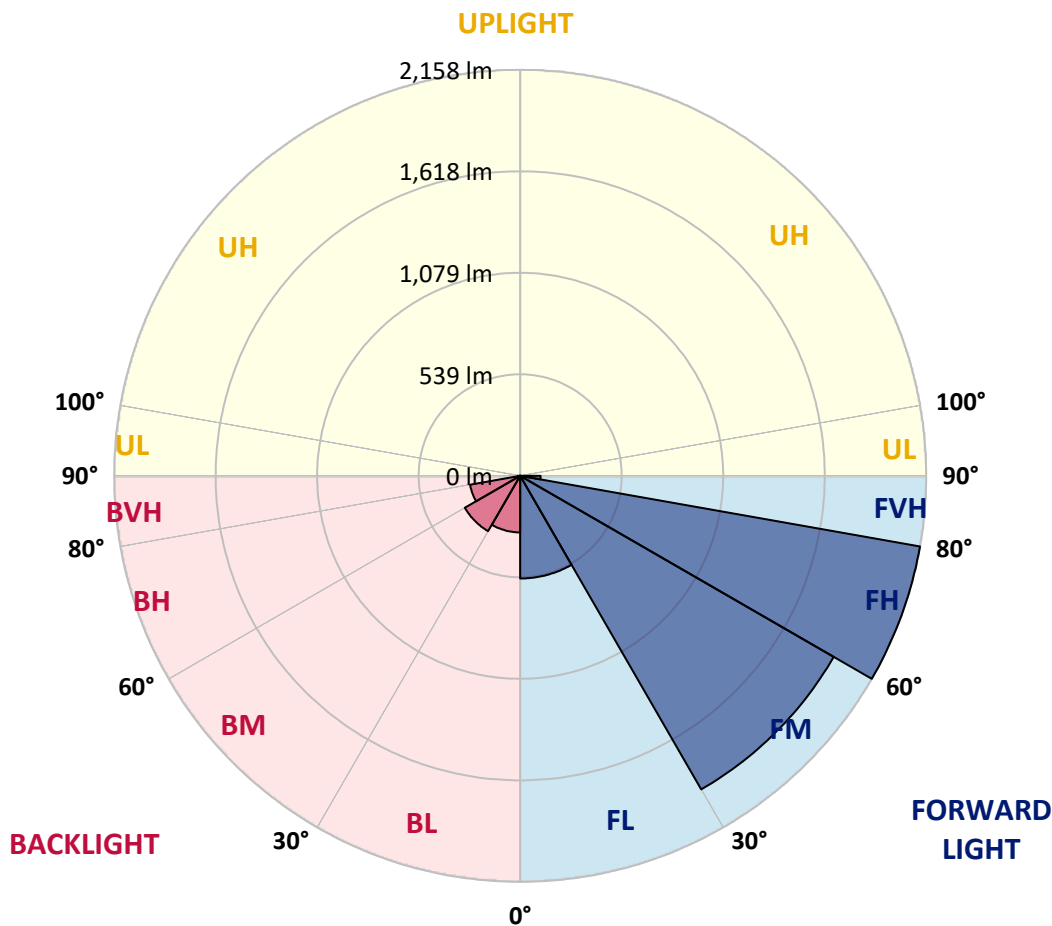


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 545.9 | 9.6 | | | |
| FM (30°-60°) | 1924.2 | 34.0 | | | |
| FH (60°-80°) | 2157.6 | 38.1 | | | G2/5000 |
| FVH (80°-90°) | 108.5 | 1.9 | | | G2/225 |
| BL (0°-30°) | 300.9 | 5.3 | B1/500 | | |
| BM (30°-60°) | 339.6 | 6.0 | B1/1000 | | |
| BH (60°-80°) | 270.2 | 4.8 | B1/500 | | G1/500 |
| BVH (80°-90°) | 13.1 | 0.2 | | | 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° | 59° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 |
| 2.5° | 1598.2 | 1598.2 | 1604.3 | 1608.5 | 1602.3 | 1608.5 | 1606.4 | 1604.3 | 1606.4 | 1606.4 | 1602.3 |
| 5° | 1532.2 | 1540.4 | 1540.4 | 1542.5 | 1556.9 | 1567.2 | 1571.3 | 1575.5 | 1577.5 | 1579.6 | 1575.5 |
| 7.5° | 1451.7 | 1455.9 | 1460.0 | 1478.6 | 1486.8 | 1509.5 | 1523.9 | 1532.2 | 1540.4 | 1544.5 | 1532.2 |
| 10° | 1363.1 | 1369.3 | 1381.6 | 1396.1 | 1416.7 | 1447.6 | 1472.4 | 1486.8 | 1499.2 | 1505.4 | 1490.9 |
| 12.5° | 1288.8 | 1290.9 | 1303.3 | 1326.0 | 1350.7 | 1394.0 | 1424.9 | 1441.4 | 1457.9 | 1470.3 | 1453.8 |
| 15° | 1220.8 | 1222.8 | 1233.2 | 1260.0 | 1288.8 | 1336.3 | 1381.6 | 1406.4 | 1429.1 | 1449.7 | 1427.0 |
| 17.5° | 1167.2 | 1173.4 | 1177.5 | 1200.2 | 1235.2 | 1286.8 | 1346.6 | 1371.3 | 1406.4 | 1437.3 | 1408.4 |
| 20° | 1136.2 | 1134.2 | 1136.2 | 1150.7 | 1187.8 | 1239.3 | 1309.5 | 1344.5 | 1385.8 | 1429.1 | 1389.9 |
| 22.5° | 1117.7 | 1121.8 | 1119.7 | 1125.9 | 1148.6 | 1200.2 | 1270.3 | 1319.8 | 1367.2 | 1422.9 | 1373.4 |
| 25° | 1117.7 | 1123.9 | 1121.8 | 1119.7 | 1128.0 | 1163.0 | 1237.3 | 1286.8 | 1346.6 | 1422.9 | 1354.8 |
| 27.5° | 1138.3 | 1140.4 | 1136.2 | 1130.1 | 1130.1 | 1142.4 | 1208.4 | 1253.8 | 1336.3 | 1420.8 | 1344.5 |
| 30° | 1156.9 | 1161.0 | 1161.0 | 1156.9 | 1150.7 | 1144.5 | 1187.8 | 1235.2 | 1326.0 | 1433.2 | 1336.3 |
| 32.5° | 1181.6 | 1185.7 | 1194.0 | 1198.1 | 1189.9 | 1171.3 | 1194.0 | 1233.2 | 1328.0 | 1460.0 | 1338.3 |
| 35° | 1212.5 | 1216.7 | 1229.0 | 1249.7 | 1243.5 | 1212.5 | 1216.7 | 1251.7 | 1344.5 | 1488.9 | 1346.6 |
| 37.5° | 1237.3 | 1243.5 | 1270.3 | 1305.3 | 1307.4 | 1274.4 | 1272.3 | 1297.1 | 1375.4 | 1534.2 | 1375.4 |
| 40° | 1262.0 | 1270.3 | 1309.5 | 1367.2 | 1379.6 | 1361.0 | 1348.6 | 1367.2 | 1431.1 | 1600.2 | 1422.9 |
| 42.5° | 1295.0 | 1303.3 | 1354.8 | 1427.0 | 1457.9 | 1449.7 | 1441.4 | 1468.2 | 1515.7 | 1688.9 | 1497.1 |
| 45° | 1330.1 | 1346.6 | 1412.6 | 1493.0 | 1548.7 | 1554.9 | 1563.1 | 1579.6 | 1616.7 | 1812.6 | 1602.3 |
| 47.5° | 1394.0 | 1408.4 | 1484.7 | 1567.2 | 1639.4 | 1672.4 | 1686.8 | 1707.4 | 1730.1 | 1926.0 | 1730.1 |
| 50° | 1480.6 | 1509.5 | 1577.5 | 1658.0 | 1742.5 | 1806.4 | 1843.6 | 1843.6 | 1868.3 | 2062.1 | 1870.4 |
| 52.5° | 1610.5 | 1637.3 | 1678.6 | 1754.9 | 1855.9 | 1957.0 | 2008.5 | 2016.8 | 2008.5 | 2192.1 | 2012.6 |
| 55° | 1719.8 | 1746.6 | 1785.8 | 1841.5 | 1969.3 | 2126.1 | 2214.7 | 2208.5 | 2179.7 | 2330.2 | 2152.9 |
| 57.5° | 1841.5 | 1862.1 | 1897.2 | 1942.5 | 2084.8 | 2301.3 | 2431.3 | 2425.1 | 2371.5 | 2470.4 | 2305.5 |
| 60° | 1893.0 | 1921.9 | 1985.8 | 2078.6 | 2264.2 | 2526.1 | 2678.7 | 2660.2 | 2540.6 | 2621.0 | 2441.6 |
| 62.5° | 1738.4 | 1792.0 | 1921.9 | 2109.6 | 2472.5 | 2901.4 | 3002.5 | 2942.7 | 2779.8 | 2785.9 | 2625.1 |
| 65° | 1389.9 | 1361.0 | 1559.0 | 1870.4 | 2489.0 | 3365.4 | 3497.4 | 3367.5 | 3078.8 | 2996.3 | 2833.4 |
| 67.5° | 793.9 | 806.3 | 901.2 | 1237.3 | 2049.8 | 3555.1 | 4355.2 | 4126.3 | 3546.9 | 3324.2 | 3085.0 |
| 70° | 538.2 | 550.6 | 591.8 | 734.1 | 1177.5 | 3177.8 | 5054.3 | 5099.7 | 4270.7 | 3614.9 | 3093.2 |
| 72.5° | 420.7 | 422.7 | 466.0 | 577.4 | 713.5 | 1996.1 | 4804.8 | 5316.2 | 4765.6 | 3625.2 | 2837.5 |
| 75° | 321.7 | 323.8 | 362.9 | 492.9 | 641.3 | 967.1 | 3658.2 | 4458.3 | 4470.7 | 3334.5 | 2317.8 |
| 77.5° | 204.2 | 214.5 | 259.8 | 393.9 | 602.1 | 641.3 | 2330.2 | 3140.6 | 3223.1 | 2470.4 | 1212.5 |
| 80° | 99.0 | 103.1 | 129.9 | 251.6 | 530.0 | 567.1 | 1387.8 | 2088.9 | 1810.6 | 963.0 | 369.1 |
| 82.5° | 41.2 | 43.3 | 61.9 | 109.3 | 338.2 | 480.5 | 694.9 | 1074.4 | 699.1 | 261.9 | 119.6 |
| 85° | 8.2 | 10.3 | 14.4 | 26.8 | 109.3 | 235.1 | 284.6 | 278.4 | 169.1 | 80.4 | 45.4 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.1 | 2.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 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: ISC-SA1D-760-U-SL3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 | 1606.4 |
| 2.5° | 1600.2 | 1600.2 | 1583.7 | 1571.3 | 1556.9 | 1546.6 | 1536.3 | 1523.9 | 1521.9 | 1528.0 | 1534.2 |
| 5° | 1567.2 | 1559.0 | 1532.2 | 1507.4 | 1478.6 | 1445.6 | 1424.9 | 1398.1 | 1383.7 | 1389.9 | 1385.8 |
| 7.5° | 1523.9 | 1511.5 | 1462.1 | 1420.8 | 1363.1 | 1311.5 | 1276.5 | 1237.3 | 1210.5 | 1200.2 | 1194.0 |
| 10° | 1478.6 | 1453.8 | 1387.8 | 1313.6 | 1237.3 | 1161.0 | 1097.1 | 1035.2 | 1004.3 | 1002.2 | 969.2 |
| 12.5° | 1435.2 | 1402.3 | 1309.5 | 1202.2 | 1097.1 | 994.0 | 899.1 | 831.0 | 746.5 | 721.7 | 730.0 |
| 15° | 1400.2 | 1354.8 | 1224.9 | 1088.8 | 952.7 | 822.8 | 699.1 | 598.0 | 523.8 | 497.0 | 486.7 |
| 17.5° | 1367.2 | 1303.3 | 1146.5 | 983.6 | 812.5 | 649.6 | 499.0 | 422.7 | 377.4 | 360.9 | 360.9 |
| 20° | 1330.1 | 1255.8 | 1062.0 | 866.1 | 657.8 | 482.5 | 369.1 | 332.0 | 317.6 | 315.5 | 313.4 |
| 22.5° | 1301.2 | 1208.4 | 975.4 | 742.4 | 513.5 | 367.1 | 305.2 | 288.7 | 288.7 | 290.8 | 290.8 |
| 25° | 1266.2 | 1154.8 | 882.6 | 610.4 | 395.9 | 294.9 | 270.1 | 264.0 | 270.1 | 276.3 | 276.3 |
| 27.5° | 1241.4 | 1107.4 | 798.0 | 486.7 | 307.3 | 255.7 | 243.3 | 245.4 | 253.6 | 261.9 | 261.9 |
| 30° | 1220.8 | 1062.0 | 709.4 | 383.6 | 255.7 | 226.8 | 224.8 | 228.9 | 237.1 | 245.4 | 243.3 |
| 32.5° | 1200.2 | 1026.9 | 612.5 | 303.1 | 220.6 | 208.3 | 206.2 | 212.4 | 218.6 | 220.6 | 224.8 |
| 35° | 1191.9 | 998.1 | 515.5 | 249.5 | 200.0 | 193.8 | 193.8 | 195.9 | 198.0 | 200.0 | 200.0 |
| 37.5° | 1198.1 | 975.4 | 428.9 | 212.4 | 187.7 | 185.6 | 183.5 | 181.5 | 181.5 | 181.5 | 183.5 |
| 40° | 1222.8 | 967.1 | 354.7 | 191.8 | 177.3 | 177.3 | 173.2 | 167.0 | 165.0 | 167.0 | 165.0 |
| 42.5° | 1272.3 | 983.6 | 292.8 | 179.4 | 169.1 | 167.0 | 160.8 | 156.7 | 154.7 | 154.7 | 152.6 |
| 45° | 1350.7 | 1012.5 | 251.6 | 171.2 | 162.9 | 156.7 | 150.5 | 146.4 | 144.3 | 146.4 | 146.4 |
| 47.5° | 1453.8 | 1066.1 | 222.7 | 162.9 | 156.7 | 146.4 | 138.2 | 136.1 | 136.1 | 140.2 | 140.2 |
| 50° | 1577.5 | 1138.3 | 206.2 | 158.8 | 150.5 | 138.2 | 129.9 | 127.9 | 129.9 | 134.0 | 136.1 |
| 52.5° | 1709.5 | 1229.0 | 202.1 | 156.7 | 144.3 | 129.9 | 123.7 | 121.7 | 123.7 | 127.9 | 129.9 |
| 55° | 1841.5 | 1328.0 | 212.4 | 156.7 | 138.2 | 123.7 | 119.6 | 113.4 | 115.5 | 119.6 | 121.7 |
| 57.5° | 1981.7 | 1435.2 | 243.3 | 152.6 | 134.0 | 119.6 | 113.4 | 107.2 | 107.2 | 111.4 | 111.4 |
| 60° | 2132.2 | 1556.9 | 301.1 | 152.6 | 129.9 | 115.5 | 105.2 | 99.0 | 99.0 | 99.0 | 101.0 |
| 62.5° | 2299.3 | 1703.3 | 369.1 | 154.7 | 132.0 | 111.4 | 96.9 | 88.7 | 88.7 | 90.7 | 88.7 |
| 65° | 2546.7 | 1921.9 | 387.7 | 156.7 | 136.1 | 107.2 | 90.7 | 82.5 | 80.4 | 80.4 | 80.4 |
| 67.5° | 2699.3 | 1946.7 | 301.1 | 152.6 | 142.3 | 107.2 | 84.5 | 74.2 | 72.2 | 70.1 | 70.1 |
| 70° | 2588.0 | 1709.5 | 214.5 | 146.4 | 142.3 | 107.2 | 80.4 | 68.1 | 63.9 | 59.8 | 59.8 |
| 72.5° | 2239.5 | 1356.9 | 175.3 | 138.2 | 132.0 | 101.0 | 74.2 | 61.9 | 55.7 | 51.6 | 51.6 |
| 75° | 1794.1 | 963.0 | 148.5 | 127.9 | 111.4 | 80.4 | 61.9 | 51.6 | 47.4 | 45.4 | 45.4 |
| 77.5° | 874.3 | 474.3 | 115.5 | 111.4 | 88.7 | 59.8 | 49.5 | 43.3 | 41.2 | 37.1 | 37.1 |
| 80° | 255.7 | 175.3 | 86.6 | 88.7 | 55.7 | 41.2 | 37.1 | 35.1 | 33.0 | 28.9 | 30.9 |
| 82.5° | 117.5 | 99.0 | 61.9 | 55.7 | 35.1 | 24.7 | 24.7 | 22.7 | 20.6 | 18.6 | 18.6 |
| 85° | 47.4 | 49.5 | 33.0 | 26.8 | 16.5 | 12.4 | 10.3 | 10.3 | 8.2 | 8.2 | 8.2 |
| 87.5° | 4.1 | 6.2 | 6.2 | 4.1 | 4.1 | 2.1 | 0.0 | 0.0 | 0.0 | 2.1 | 2.1 |
| 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 (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

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)