

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: P438847

Luminaire Tested: **ISW-SA1F-730-U-SL3**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438847
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-16)
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-SL3
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 70 CRI, 3000K, 1200mA 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: 6972 lumens
Efficiency: N/A
Efficacy: 105.6 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

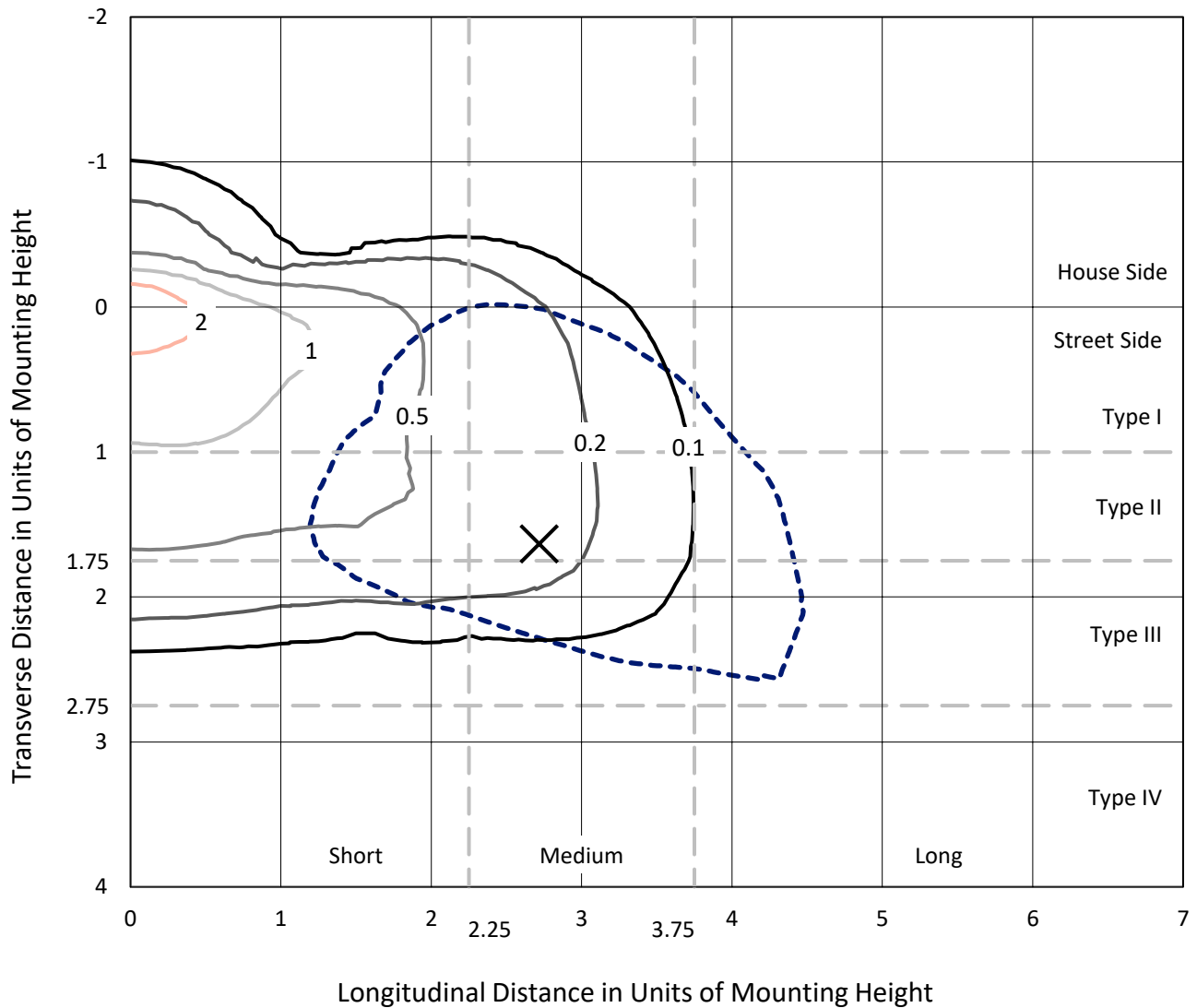
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

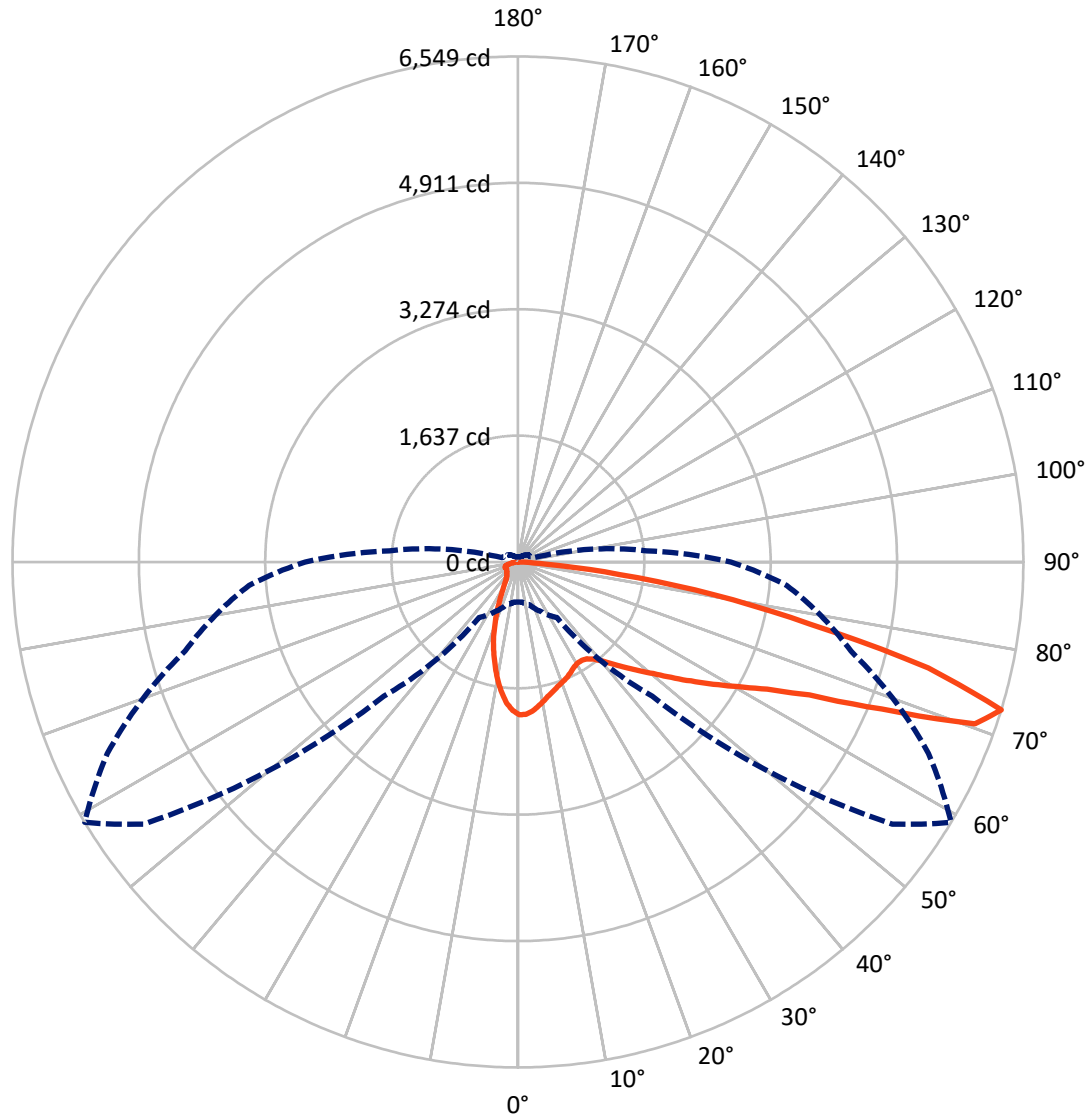
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.2 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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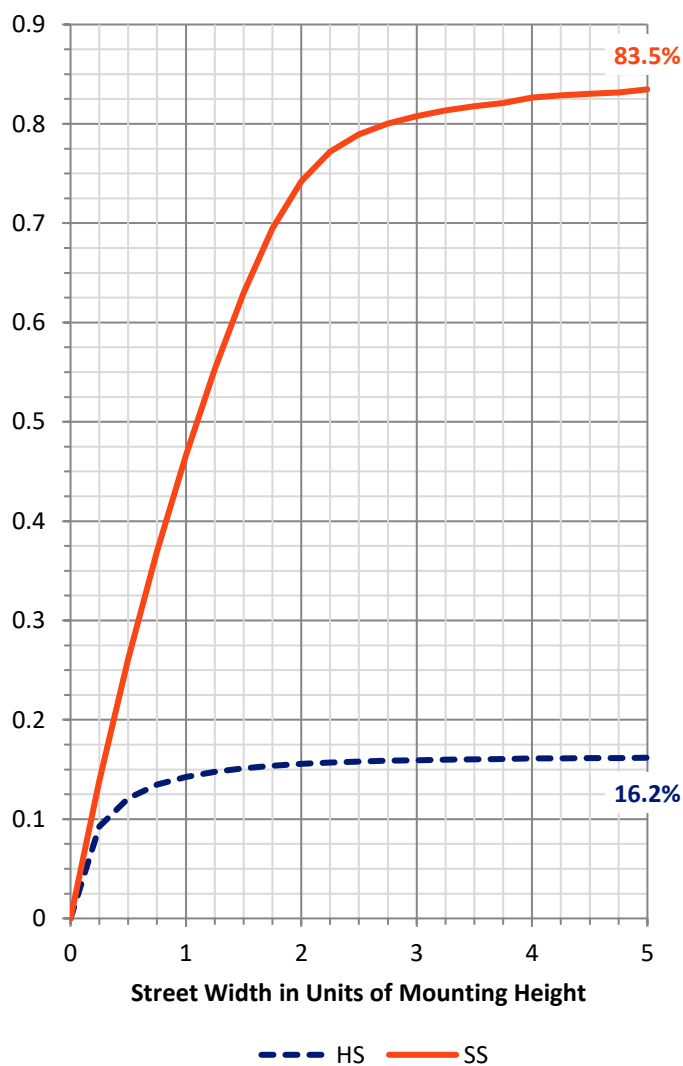
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1138.0 | 0.0 | 1138.0 |
| | % Fixture | 16.3 | 0.0 | 16.3 |
| Street Side | Lumens | 5834.0 | 0.0 | 5834.0 |
| | % Fixture | 83.7 | 0.0 | 83.7 |
| Total | Lumens | 6972.0 | 0.0 | 6972.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 169.8 | 2.4 |
| 10°-20° | 381.6 | 5.5 |
| 20°-30° | 491.7 | 7.1 |
| 30°-40° | 629.0 | 9.0 |
| 40°-50° | 872.9 | 12.5 |
| 50°-60° | 1286.6 | 18.5 |
| 60°-70° | 1731.2 | 24.8 |
| 70°-80° | 1259.4 | 18.1 |
| 80°-90° | 149.8 | 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° | 6972.0 | 100.0 |
| 0°-180° | 6972.0 | 100.0 |

Coefficient of Utilization



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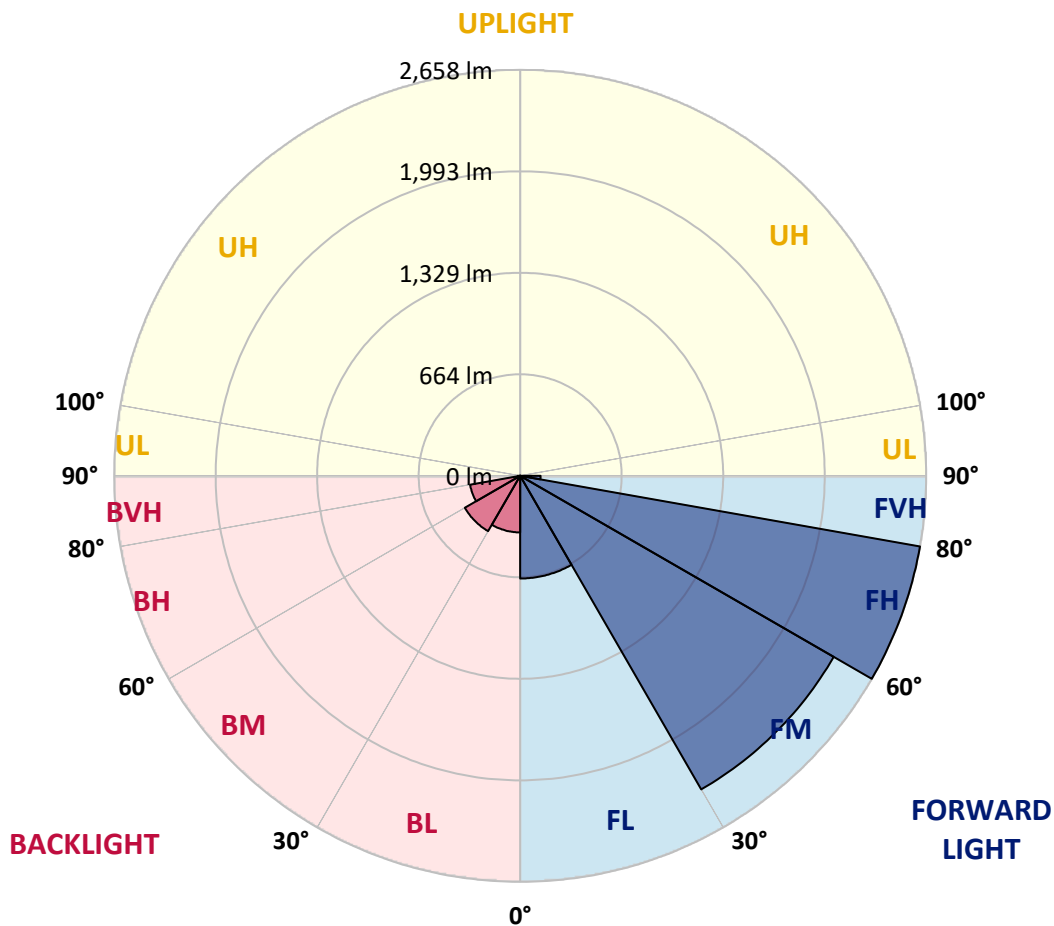
CATALOG NUMBER: ISW-SA1F-730-U-SL3

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 672.4 | 9.6 | | | |
| FM (30°-60°) | 2370.2 | 34.0 | | | |
| FH (60°-80°) | 2657.7 | 38.1 | | | G2/5000 |
| FVH (80°-90°) | 133.6 | 1.9 | | | G2/225 |
| BL (0°-30°) | 370.7 | 5.3 | B1/500 | | |
| BM (30°-60°) | 418.4 | 6.0 | B1/1000 | | |
| BH (60°-80°) | 332.9 | 4.8 | B1/500 | | G1/500 |
| BVH (80°-90°) | 16.1 | 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° | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 |
| 2.5° | 1968.6 | 1968.6 | 1976.2 | 1981.3 | 1973.7 | 1981.3 | 1978.8 | 1976.2 | 1978.8 | 1978.8 | 1973.7 |
| 5° | 1887.3 | 1897.5 | 1897.5 | 1900.0 | 1917.8 | 1930.5 | 1935.6 | 1940.7 | 1943.2 | 1945.8 | 1940.7 |
| 7.5° | 1788.3 | 1793.3 | 1798.4 | 1821.3 | 1831.4 | 1859.4 | 1877.2 | 1887.3 | 1897.5 | 1902.6 | 1887.3 |
| 10° | 1679.0 | 1686.7 | 1701.9 | 1719.7 | 1745.1 | 1783.2 | 1813.7 | 1831.4 | 1846.7 | 1854.3 | 1836.5 |
| 12.5° | 1587.6 | 1590.1 | 1605.4 | 1633.3 | 1663.8 | 1717.1 | 1755.2 | 1775.6 | 1795.9 | 1811.1 | 1790.8 |
| 15° | 1503.8 | 1506.3 | 1519.0 | 1552.0 | 1587.6 | 1646.0 | 1701.9 | 1732.4 | 1760.3 | 1785.7 | 1757.8 |
| 17.5° | 1437.7 | 1445.3 | 1450.4 | 1478.4 | 1521.5 | 1585.1 | 1658.7 | 1689.2 | 1732.4 | 1770.5 | 1734.9 |
| 20° | 1399.6 | 1397.1 | 1399.6 | 1417.4 | 1463.1 | 1526.6 | 1613.0 | 1656.2 | 1707.0 | 1760.3 | 1712.1 |
| 22.5° | 1376.8 | 1381.8 | 1379.3 | 1386.9 | 1414.9 | 1478.4 | 1564.7 | 1625.7 | 1684.1 | 1752.7 | 1691.7 |
| 25° | 1376.8 | 1384.4 | 1381.8 | 1379.3 | 1389.5 | 1432.6 | 1524.1 | 1585.1 | 1658.7 | 1752.7 | 1668.9 |
| 27.5° | 1402.2 | 1404.7 | 1399.6 | 1392.0 | 1392.0 | 1407.2 | 1488.5 | 1544.4 | 1646.0 | 1750.2 | 1656.2 |
| 30° | 1425.0 | 1430.1 | 1430.1 | 1425.0 | 1417.4 | 1409.8 | 1463.1 | 1521.5 | 1633.3 | 1765.4 | 1646.0 |
| 32.5° | 1455.5 | 1460.6 | 1470.7 | 1475.8 | 1465.7 | 1442.8 | 1470.7 | 1519.0 | 1635.9 | 1798.4 | 1648.6 |
| 35° | 1493.6 | 1498.7 | 1513.9 | 1539.3 | 1531.7 | 1493.6 | 1498.7 | 1541.9 | 1656.2 | 1834.0 | 1658.7 |
| 37.5° | 1524.1 | 1531.7 | 1564.7 | 1607.9 | 1610.5 | 1569.8 | 1567.3 | 1597.8 | 1694.3 | 1889.9 | 1694.3 |
| 40° | 1554.6 | 1564.7 | 1613.0 | 1684.1 | 1699.4 | 1676.5 | 1661.3 | 1684.1 | 1762.9 | 1971.2 | 1752.7 |
| 42.5° | 1595.2 | 1605.4 | 1668.9 | 1757.8 | 1795.9 | 1785.7 | 1775.6 | 1808.6 | 1867.0 | 2080.4 | 1844.1 |
| 45° | 1638.4 | 1658.7 | 1740.0 | 1839.1 | 1907.6 | 1915.3 | 1925.4 | 1945.8 | 1991.5 | 2232.8 | 1973.7 |
| 47.5° | 1717.1 | 1734.9 | 1828.9 | 1930.5 | 2019.4 | 2060.1 | 2077.8 | 2103.2 | 2131.2 | 2372.5 | 2131.2 |
| 50° | 1823.8 | 1859.4 | 1943.2 | 2042.3 | 2146.4 | 2225.2 | 2270.9 | 2270.9 | 2301.4 | 2540.1 | 2303.9 |
| 52.5° | 1983.9 | 2016.9 | 2067.7 | 2161.7 | 2286.1 | 2410.6 | 2474.1 | 2484.3 | 2474.1 | 2700.2 | 2479.2 |
| 55° | 2118.5 | 2151.5 | 2199.8 | 2268.3 | 2425.8 | 2618.9 | 2728.1 | 2720.5 | 2684.9 | 2870.4 | 2651.9 |
| 57.5° | 2268.3 | 2293.8 | 2336.9 | 2392.8 | 2568.1 | 2834.8 | 2994.8 | 2987.2 | 2921.2 | 3043.1 | 2839.9 |
| 60° | 2331.9 | 2367.4 | 2446.2 | 2560.5 | 2789.1 | 3111.7 | 3299.6 | 3276.8 | 3129.5 | 3228.5 | 3007.5 |
| 62.5° | 2141.3 | 2207.4 | 2367.4 | 2598.6 | 3045.6 | 3574.0 | 3698.5 | 3624.8 | 3424.1 | 3431.7 | 3233.6 |
| 65° | 1712.1 | 1676.5 | 1920.3 | 2303.9 | 3066.0 | 4145.5 | 4308.1 | 4148.1 | 3792.4 | 3690.8 | 3490.2 |
| 67.5° | 978.0 | 993.2 | 1110.0 | 1524.1 | 2524.9 | 4379.2 | 5364.8 | 5082.8 | 4369.0 | 4094.7 | 3800.1 |
| 70° | 663.0 | 678.2 | 729.0 | 904.3 | 1450.4 | 3914.4 | 6225.9 | 6281.8 | 5260.6 | 4452.9 | 3810.2 |
| 72.5° | 518.2 | 520.7 | 574.1 | 711.2 | 878.9 | 2458.9 | 5918.5 | 6548.5 | 5870.3 | 4465.6 | 3495.2 |
| 75° | 396.3 | 398.8 | 447.1 | 607.1 | 790.0 | 1191.3 | 4506.2 | 5491.8 | 5507.0 | 4107.4 | 2855.1 |
| 77.5° | 251.5 | 264.2 | 320.1 | 485.2 | 741.7 | 790.0 | 2870.4 | 3868.6 | 3970.2 | 3043.1 | 1493.6 |
| 80° | 121.9 | 127.0 | 160.0 | 309.9 | 652.8 | 698.5 | 1709.5 | 2573.2 | 2230.2 | 1186.2 | 454.7 |
| 82.5° | 50.8 | 53.3 | 76.2 | 134.6 | 416.6 | 591.9 | 856.0 | 1323.4 | 861.1 | 322.6 | 147.3 |
| 85° | 10.2 | 12.7 | 17.8 | 33.0 | 134.6 | 289.6 | 350.5 | 342.9 | 208.3 | 99.1 | 55.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 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: ISW-SA1F-730-U-SL3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 | 1978.8 |
| 2.5° | 1971.2 | 1971.2 | 1950.8 | 1935.6 | 1917.8 | 1905.1 | 1892.4 | 1877.2 | 1874.6 | 1882.2 | 1889.9 |
| 5° | 1930.5 | 1920.3 | 1887.3 | 1856.8 | 1821.3 | 1780.6 | 1755.2 | 1722.2 | 1704.4 | 1712.1 | 1707.0 |
| 7.5° | 1877.2 | 1861.9 | 1801.0 | 1750.2 | 1679.0 | 1615.5 | 1572.3 | 1524.1 | 1491.1 | 1478.4 | 1470.7 |
| 10° | 1821.3 | 1790.8 | 1709.5 | 1618.1 | 1524.1 | 1430.1 | 1351.4 | 1275.2 | 1237.1 | 1234.5 | 1193.9 |
| 12.5° | 1767.9 | 1727.3 | 1613.0 | 1480.9 | 1351.4 | 1224.3 | 1107.5 | 1023.7 | 919.5 | 889.1 | 899.2 |
| 15° | 1724.8 | 1668.9 | 1508.8 | 1341.2 | 1173.5 | 1013.5 | 861.1 | 736.6 | 645.2 | 612.2 | 599.5 |
| 17.5° | 1684.1 | 1605.4 | 1412.3 | 1211.6 | 1000.8 | 800.1 | 614.7 | 520.7 | 464.8 | 444.5 | 444.5 |
| 20° | 1638.4 | 1546.9 | 1308.2 | 1066.9 | 810.3 | 594.4 | 454.7 | 409.0 | 391.2 | 388.6 | 386.1 |
| 22.5° | 1602.8 | 1488.5 | 1201.5 | 914.5 | 632.5 | 452.1 | 375.9 | 355.6 | 355.6 | 358.2 | 358.2 |
| 25° | 1559.6 | 1422.5 | 1087.2 | 751.9 | 487.7 | 363.2 | 332.8 | 325.1 | 332.8 | 340.4 | 340.4 |
| 27.5° | 1529.2 | 1364.1 | 983.0 | 599.5 | 378.5 | 315.0 | 299.7 | 302.3 | 312.4 | 322.6 | 322.6 |
| 30° | 1503.8 | 1308.2 | 873.8 | 472.5 | 315.0 | 279.4 | 276.9 | 282.0 | 292.1 | 302.3 | 299.7 |
| 32.5° | 1478.4 | 1265.0 | 754.4 | 373.4 | 271.8 | 256.6 | 254.0 | 261.6 | 269.3 | 271.8 | 276.9 |
| 35° | 1468.2 | 1229.4 | 635.0 | 307.4 | 246.4 | 238.8 | 238.8 | 241.3 | 243.9 | 246.4 | 246.4 |
| 37.5° | 1475.8 | 1201.5 | 528.4 | 261.6 | 231.2 | 228.6 | 226.1 | 223.5 | 223.5 | 223.5 | 226.1 |
| 40° | 1506.3 | 1191.3 | 436.9 | 236.2 | 218.5 | 218.5 | 213.4 | 205.8 | 203.2 | 205.8 | 203.2 |
| 42.5° | 1567.3 | 1211.6 | 360.7 | 221.0 | 208.3 | 205.8 | 198.1 | 193.1 | 190.5 | 190.5 | 188.0 |
| 45° | 1663.8 | 1247.2 | 309.9 | 210.8 | 200.7 | 193.1 | 185.4 | 180.4 | 177.8 | 180.4 | 180.4 |
| 47.5° | 1790.8 | 1313.3 | 274.3 | 200.7 | 193.1 | 180.4 | 170.2 | 167.6 | 167.6 | 172.7 | 172.7 |
| 50° | 1943.2 | 1402.2 | 254.0 | 195.6 | 185.4 | 170.2 | 160.0 | 157.5 | 160.0 | 165.1 | 167.6 |
| 52.5° | 2105.8 | 1513.9 | 248.9 | 193.1 | 177.8 | 160.0 | 152.4 | 149.9 | 152.4 | 157.5 | 160.0 |
| 55° | 2268.3 | 1635.9 | 261.6 | 193.1 | 170.2 | 152.4 | 147.3 | 139.7 | 142.2 | 147.3 | 149.9 |
| 57.5° | 2441.1 | 1767.9 | 299.7 | 188.0 | 165.1 | 147.3 | 139.7 | 132.1 | 132.1 | 137.2 | 137.2 |
| 60° | 2626.5 | 1917.8 | 370.9 | 188.0 | 160.0 | 142.2 | 129.5 | 121.9 | 121.9 | 121.9 | 124.5 |
| 62.5° | 2832.3 | 2098.2 | 454.7 | 190.5 | 162.6 | 137.2 | 119.4 | 109.2 | 109.2 | 111.8 | 109.2 |
| 65° | 3137.1 | 2367.4 | 477.5 | 193.1 | 167.6 | 132.1 | 111.8 | 101.6 | 99.1 | 99.1 | 99.1 |
| 67.5° | 3325.0 | 2397.9 | 370.9 | 188.0 | 175.3 | 132.1 | 104.1 | 91.4 | 88.9 | 86.4 | 86.4 |
| 70° | 3187.9 | 2105.8 | 264.2 | 180.4 | 175.3 | 132.1 | 99.1 | 83.8 | 78.7 | 73.7 | 73.7 |
| 72.5° | 2758.6 | 1671.4 | 215.9 | 170.2 | 162.6 | 124.5 | 91.4 | 76.2 | 68.6 | 63.5 | 63.5 |
| 75° | 2209.9 | 1186.2 | 182.9 | 157.5 | 137.2 | 99.1 | 76.2 | 63.5 | 58.4 | 55.9 | 55.9 |
| 77.5° | 1077.0 | 584.2 | 142.2 | 137.2 | 109.2 | 73.7 | 61.0 | 53.3 | 50.8 | 45.7 | 45.7 |
| 80° | 315.0 | 215.9 | 106.7 | 109.2 | 68.6 | 50.8 | 45.7 | 43.2 | 40.6 | 35.6 | 38.1 |
| 82.5° | 144.8 | 121.9 | 76.2 | 68.6 | 43.2 | 30.5 | 30.5 | 27.9 | 25.4 | 22.9 | 22.9 |
| 85° | 58.4 | 61.0 | 40.6 | 33.0 | 20.3 | 15.2 | 12.7 | 12.7 | 10.2 | 10.2 | 10.2 |
| 87.5° | 5.1 | 7.6 | 7.6 | 5.1 | 5.1 | 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



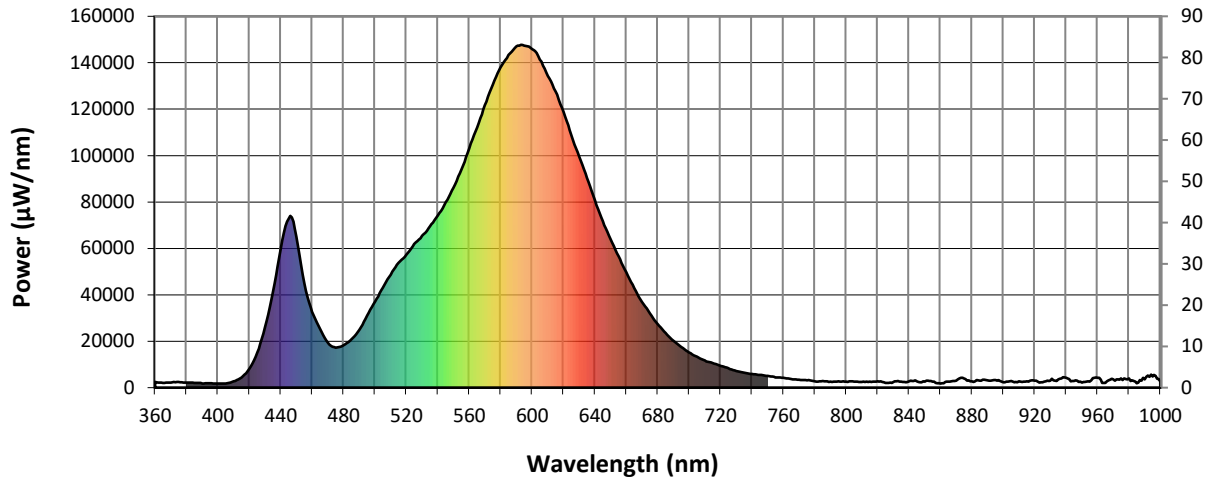
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



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)