

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: P386468

Luminaire Tested: **GPC-SA2A-827-U-SL2-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P386468
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GPC-SA2A-827-U-SL2-HSS
Description: GALLEON PEDESTRIAN LUMINAIRE
(2) 80 CRI, 2700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5922 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G2

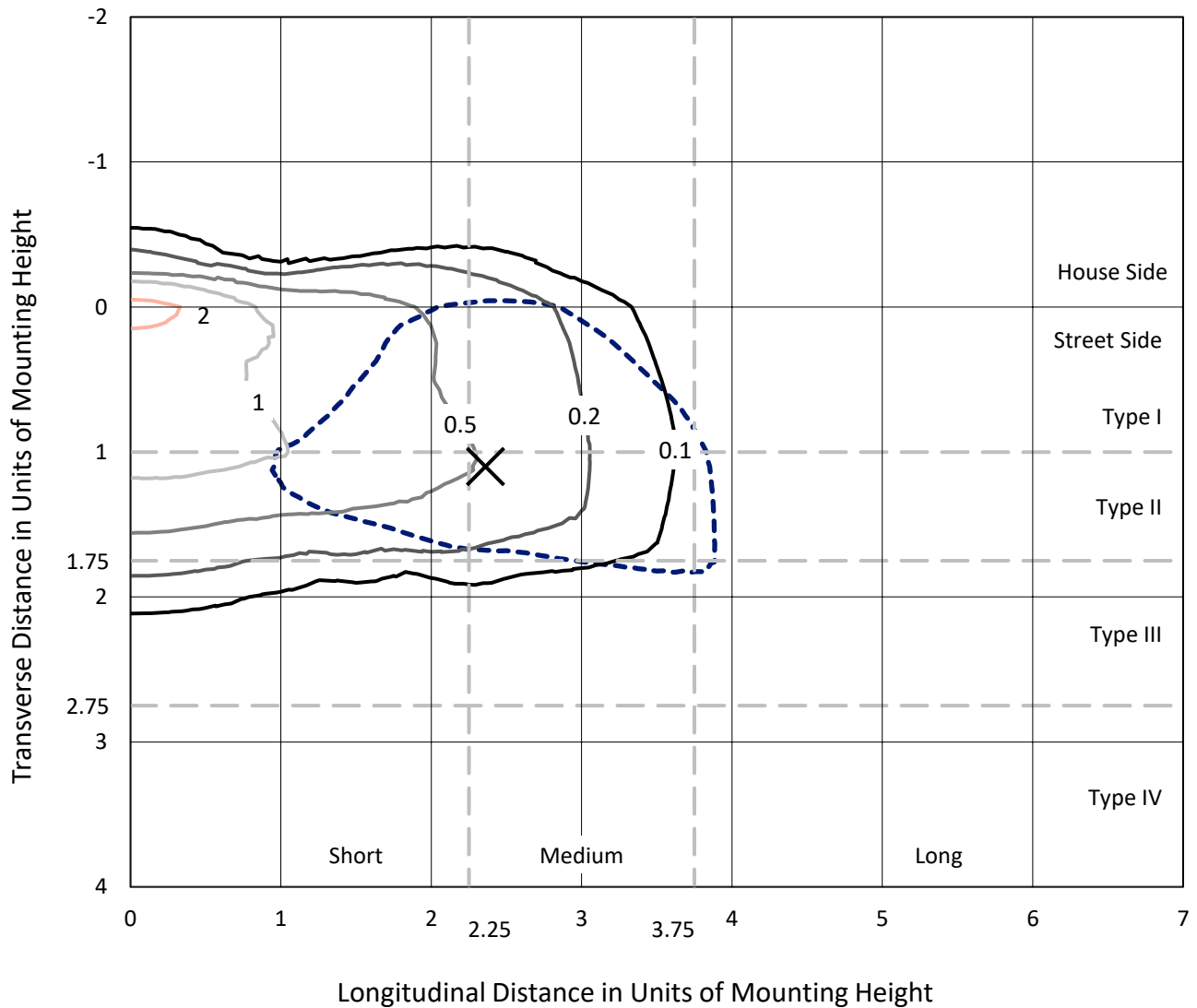
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

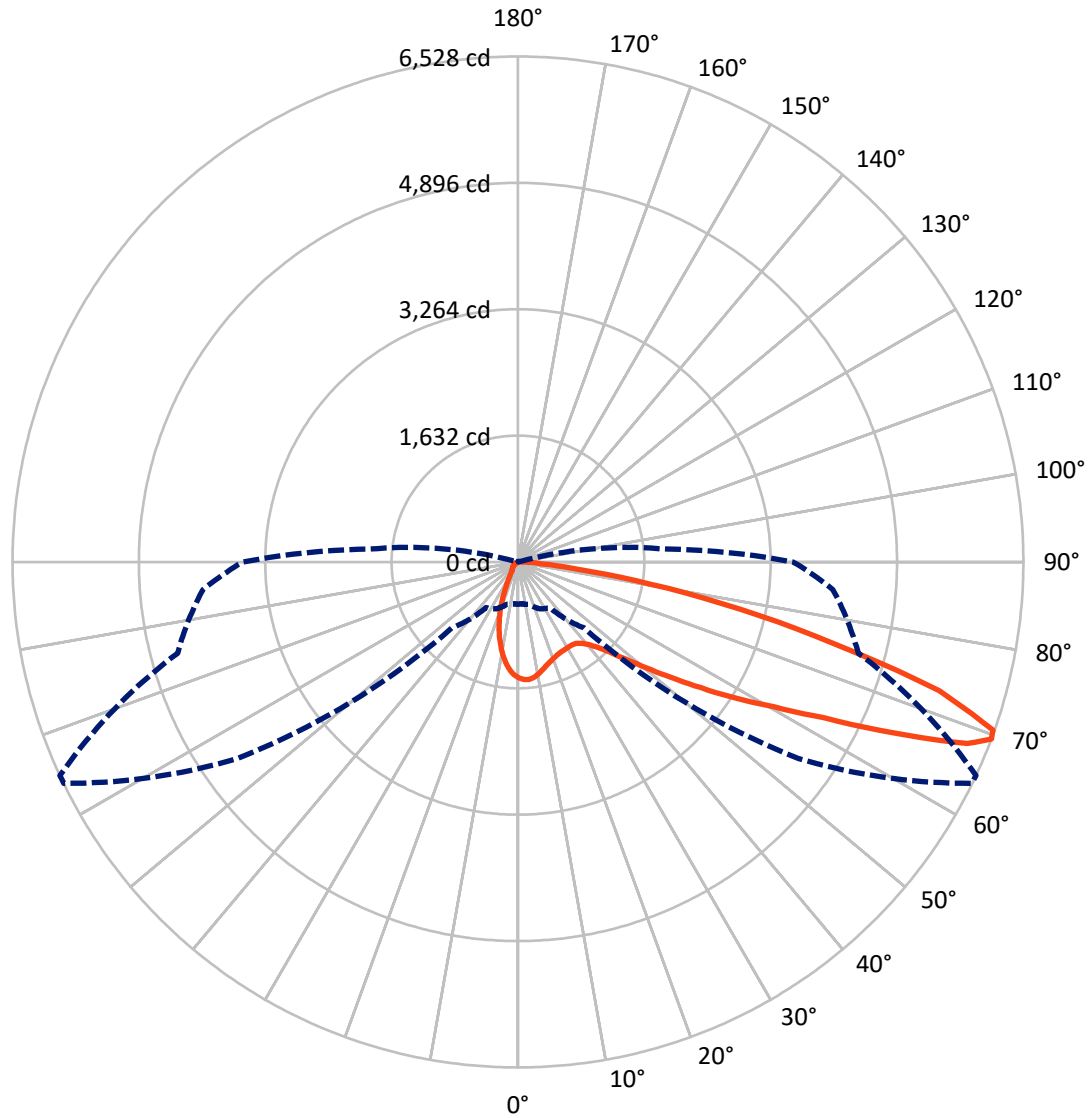
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.4 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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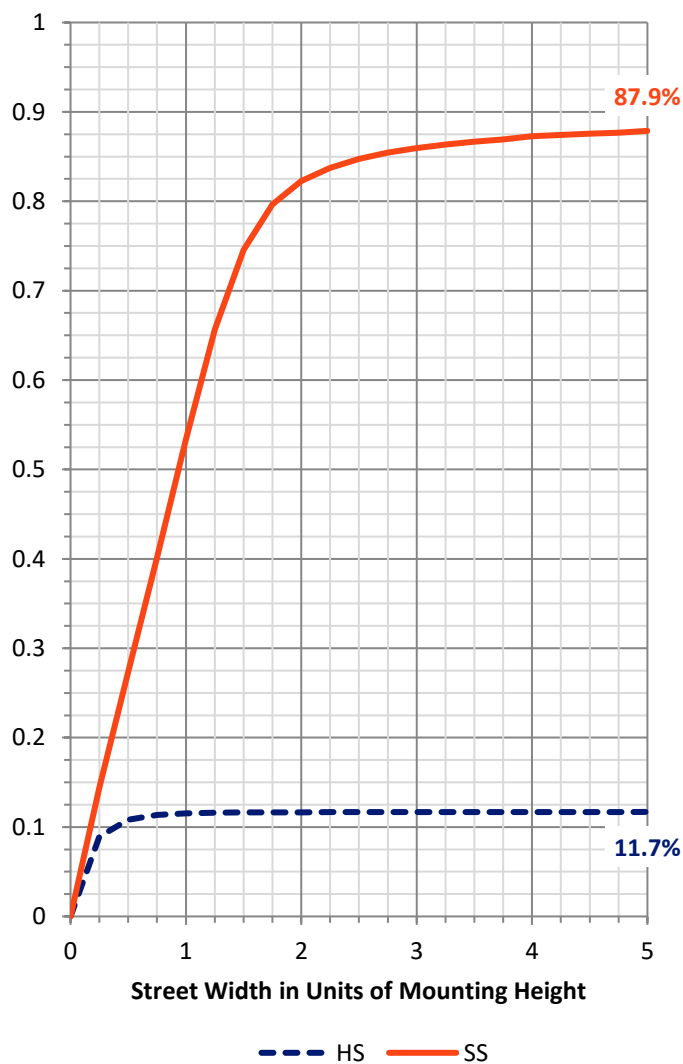
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 698.1 | 0.0 | 698.1 |
| | % Fixture | 11.8 | 0.0 | 11.8 |
| Street Side | Lumens | 5223.9 | 0.0 | 5223.9 |
| | % Fixture | 88.2 | 0.0 | 88.2 |
| Total | Lumens | 5922.0 | 0.0 | 5922.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 125.1 | 2.1 |
| 10°-20° | 273.9 | 4.6 |
| 20°-30° | 379.4 | 6.4 |
| 30°-40° | 529.0 | 8.9 |
| 40°-50° | 822.3 | 13.9 |
| 50°-60° | 1320.1 | 22.3 |
| 60°-70° | 1493.2 | 25.2 |
| 70°-80° | 877.0 | 14.8 |
| 80°-90° | 102.0 | 1.7 |
| 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° | 5922.0 | 100.0 |
| 0°-180° | 5922.0 | 100.0 |

Coefficient of Utilization



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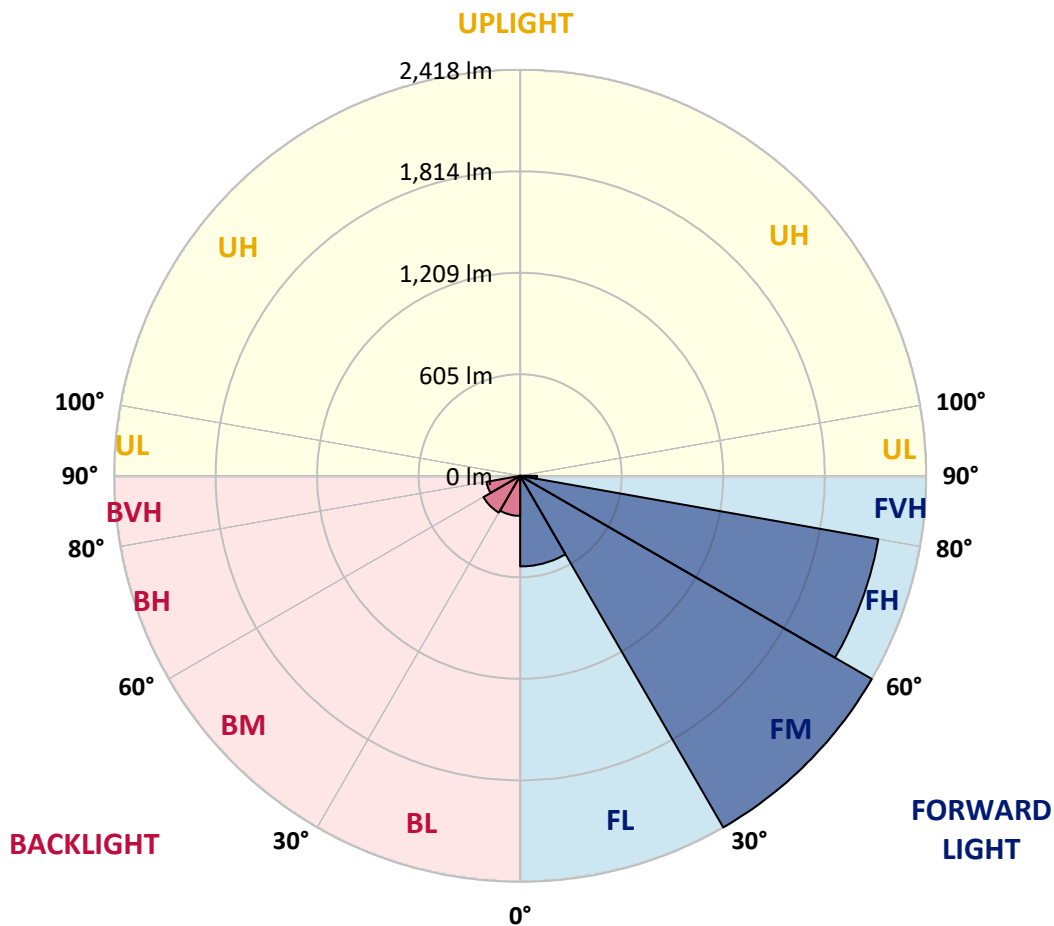
CATALOG NUMBER: GPC-SA2A-827-U-SL2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 539.6 | 9.1 | | | |
| FM (30°-60°) | 2418.4 | 40.8 | | | |
| FH (60°-80°) | 2166.2 | 36.6 | | | G2/5000 |
| FVH (80°-90°) | 99.7 | 1.7 | | | G1/100 |
| BL (0°-30°) | 238.8 | 4.0 | B1/500 | | |
| BM (30°-60°) | 253.0 | 4.3 | B1/1000 | | |
| BH (60°-80°) | 204.0 | 3.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 2.3 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 |
| 2.5° | 1509.8 | 1506.0 | 1509.0 | 1515.5 | 1518.8 | 1518.8 | 1521.3 | 1518.3 | 1519.3 | 1512.0 | 1501.5 |
| 5° | 1415.3 | 1409.5 | 1417.8 | 1436.1 | 1458.7 | 1478.0 | 1506.5 | 1521.6 | 1523.1 | 1523.3 | 1511.0 |
| 7.5° | 1313.6 | 1308.3 | 1320.6 | 1342.1 | 1371.2 | 1407.0 | 1456.9 | 1500.5 | 1503.0 | 1526.6 | 1517.5 |
| 10° | 1230.9 | 1227.1 | 1241.4 | 1264.5 | 1298.5 | 1338.6 | 1399.8 | 1460.4 | 1467.7 | 1519.8 | 1516.5 |
| 12.5° | 1165.2 | 1162.2 | 1175.7 | 1202.3 | 1237.1 | 1281.5 | 1345.4 | 1415.8 | 1425.6 | 1504.5 | 1511.5 |
| 15° | 1117.4 | 1116.9 | 1128.1 | 1153.7 | 1192.3 | 1233.6 | 1299.0 | 1374.5 | 1385.7 | 1488.0 | 1510.8 |
| 17.5° | 1092.3 | 1093.1 | 1101.3 | 1123.1 | 1156.2 | 1197.3 | 1259.9 | 1339.6 | 1351.9 | 1473.2 | 1514.5 |
| 20° | 1089.8 | 1090.6 | 1095.1 | 1107.3 | 1134.2 | 1170.5 | 1228.1 | 1310.3 | 1323.1 | 1462.2 | 1520.6 |
| 22.5° | 1111.9 | 1111.3 | 1112.6 | 1111.3 | 1126.4 | 1153.9 | 1207.1 | 1287.8 | 1302.5 | 1454.9 | 1525.3 |
| 25° | 1154.2 | 1153.4 | 1152.9 | 1143.7 | 1133.7 | 1148.4 | 1198.3 | 1275.0 | 1289.0 | 1449.6 | 1528.1 |
| 27.5° | 1213.1 | 1212.6 | 1211.8 | 1196.5 | 1166.5 | 1157.2 | 1199.3 | 1270.2 | 1282.0 | 1445.4 | 1527.6 |
| 30° | 1290.5 | 1294.0 | 1293.0 | 1271.7 | 1224.9 | 1184.0 | 1209.8 | 1267.7 | 1278.0 | 1437.1 | 1522.3 |
| 32.5° | 1381.5 | 1388.5 | 1394.0 | 1371.2 | 1312.6 | 1237.1 | 1234.1 | 1270.5 | 1278.0 | 1430.8 | 1512.8 |
| 35° | 1476.0 | 1485.0 | 1505.3 | 1497.3 | 1420.1 | 1317.1 | 1276.0 | 1287.0 | 1293.3 | 1434.4 | 1508.3 |
| 37.5° | 1568.9 | 1579.7 | 1623.8 | 1647.1 | 1560.9 | 1422.8 | 1341.1 | 1327.9 | 1331.1 | 1455.7 | 1513.3 |
| 40° | 1676.9 | 1693.2 | 1760.1 | 1797.7 | 1729.0 | 1564.4 | 1438.6 | 1398.0 | 1399.3 | 1502.5 | 1536.6 |
| 42.5° | 1818.8 | 1835.5 | 1908.0 | 1966.8 | 1918.5 | 1743.3 | 1570.9 | 1505.3 | 1504.0 | 1590.2 | 1591.5 |
| 45° | 1991.7 | 2009.2 | 2084.1 | 2149.5 | 2127.7 | 1955.3 | 1740.3 | 1661.9 | 1660.4 | 1728.5 | 1695.5 |
| 47.5° | 2187.6 | 2204.9 | 2271.8 | 2339.2 | 2362.8 | 2202.9 | 1956.1 | 1875.6 | 1872.1 | 1920.7 | 1856.1 |
| 50° | 2355.8 | 2367.0 | 2428.7 | 2519.4 | 2625.6 | 2507.1 | 2224.5 | 2147.0 | 2143.3 | 2176.1 | 2091.9 |
| 52.5° | 2416.9 | 2423.4 | 2486.1 | 2613.1 | 2878.2 | 2919.1 | 2577.0 | 2477.3 | 2474.5 | 2488.8 | 2405.9 |
| 55° | 2293.1 | 2304.9 | 2381.8 | 2570.3 | 3015.1 | 3384.7 | 3022.1 | 2886.2 | 2865.5 | 2834.6 | 2734.1 |
| 57.5° | 1955.8 | 1974.6 | 2057.3 | 2307.9 | 2951.2 | 3754.0 | 3676.1 | 3348.8 | 3318.3 | 3129.8 | 3001.0 |
| 60° | 1465.4 | 1488.5 | 1557.1 | 1827.5 | 2610.1 | 3885.6 | 4390.8 | 3864.3 | 3795.4 | 3364.9 | 3246.3 |
| 62.5° | 1005.6 | 1017.1 | 1063.7 | 1239.9 | 1922.2 | 3670.1 | 4988.7 | 4554.7 | 4428.9 | 3620.5 | 3511.7 |
| 65° | 768.0 | 772.1 | 791.1 | 851.7 | 1144.7 | 2981.2 | 5226.5 | 5465.5 | 5313.4 | 3926.2 | 3787.1 |
| 67.5° | 618.9 | 615.7 | 642.0 | 728.7 | 766.5 | 1818.8 | 4949.1 | 6327.3 | 6256.1 | 4334.9 | 4064.3 |
| 69° | 545.8 | 541.3 | 568.1 | 668.8 | 719.9 | 1202.3 | 4424.3 | 6523.0 | 6527.5 | 4550.6 | 4083.3 |
| 70° | 491.1 | 494.2 | 520.7 | 633.2 | 704.1 | 943.7 | 3923.2 | 6473.1 | 6508.7 | 4631.3 | 3969.0 |
| 72.5° | 328.0 | 336.0 | 389.4 | 525.7 | 677.1 | 714.2 | 2368.8 | 5554.7 | 5691.6 | 4449.7 | 3405.2 |
| 75° | 184.9 | 190.9 | 254.3 | 396.4 | 638.0 | 680.1 | 1251.2 | 4092.3 | 4224.6 | 3721.0 | 2625.9 |
| 77.5° | 90.7 | 94.0 | 143.8 | 255.8 | 533.5 | 648.0 | 709.7 | 2779.8 | 2930.9 | 2428.7 | 1485.2 |
| 80° | 38.3 | 40.1 | 71.9 | 157.9 | 381.4 | 618.4 | 527.0 | 1710.8 | 1729.5 | 951.5 | 395.7 |
| 82.5° | 14.8 | 15.3 | 30.3 | 98.5 | 242.3 | 482.1 | 440.8 | 811.1 | 791.6 | 179.2 | 90.2 |
| 85° | 1.8 | 2.0 | 11.0 | 59.1 | 134.8 | 248.1 | 358.1 | 349.6 | 323.5 | 35.6 | 46.4 |
| 87.5° | 0.0 | 0.0 | 0.8 | 18.0 | 40.1 | 116.3 | 186.2 | 145.1 | 130.8 | 11.5 | 24.1 |
| 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: GPC-SA2A-827-U-SL2-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 | 1496.5 |
| 2.5° | 1492.7 | 1490.2 | 1476.7 | 1457.2 | 1438.6 | 1415.6 | 1393.5 | 1380.2 | 1369.7 | 1362.7 | 1371.0 |
| 5° | 1496.8 | 1485.7 | 1444.6 | 1392.0 | 1340.4 | 1282.2 | 1228.1 | 1182.3 | 1164.2 | 1144.2 | 1153.2 |
| 7.5° | 1495.5 | 1474.7 | 1400.8 | 1307.1 | 1212.3 | 1114.4 | 1021.6 | 950.2 | 913.1 | 876.8 | 886.1 |
| 10° | 1489.2 | 1454.2 | 1342.1 | 1203.3 | 1061.5 | 920.7 | 789.1 | 689.1 | 633.2 | 582.6 | 589.9 |
| 12.5° | 1475.5 | 1426.6 | 1273.0 | 1084.5 | 894.8 | 709.2 | 555.0 | 427.0 | 358.3 | 328.0 | 331.8 |
| 15° | 1467.2 | 1399.8 | 1199.8 | 964.3 | 716.9 | 493.9 | 339.3 | 252.3 | 221.0 | 211.0 | 212.2 |
| 17.5° | 1463.2 | 1374.0 | 1124.1 | 826.7 | 535.0 | 314.5 | 219.3 | 193.5 | 186.7 | 184.9 | 185.4 |
| 20° | 1459.2 | 1347.9 | 1046.2 | 690.6 | 368.6 | 211.5 | 180.2 | 172.7 | 170.1 | 167.9 | 168.4 |
| 22.5° | 1452.4 | 1322.8 | 962.5 | 552.8 | 248.6 | 171.7 | 162.4 | 155.1 | 149.9 | 147.1 | 147.6 |
| 25° | 1444.1 | 1296.5 | 877.1 | 411.7 | 181.4 | 153.1 | 144.3 | 134.1 | 127.8 | 122.8 | 123.0 |
| 27.5° | 1430.8 | 1264.2 | 788.8 | 299.7 | 152.4 | 137.1 | 125.3 | 114.0 | 103.5 | 97.7 | 97.7 |
| 30° | 1412.3 | 1227.6 | 690.9 | 214.5 | 136.6 | 121.3 | 107.0 | 93.0 | 81.7 | 76.4 | 75.9 |
| 32.5° | 1391.8 | 1189.5 | 591.9 | 162.6 | 124.0 | 106.5 | 90.2 | 75.4 | 65.4 | 61.1 | 60.9 |
| 35° | 1374.2 | 1148.4 | 493.2 | 136.3 | 111.5 | 92.2 | 74.4 | 61.9 | 53.9 | 50.4 | 50.1 |
| 37.5° | 1362.9 | 1107.3 | 396.9 | 121.8 | 100.2 | 78.9 | 62.4 | 51.1 | 45.4 | 42.6 | 42.3 |
| 40° | 1361.2 | 1076.8 | 309.0 | 110.8 | 89.7 | 67.2 | 52.1 | 43.4 | 38.1 | 35.1 | 34.8 |
| 42.5° | 1384.0 | 1059.2 | 237.1 | 101.5 | 78.9 | 56.9 | 44.4 | 37.1 | 31.6 | 28.6 | 28.3 |
| 45° | 1443.9 | 1064.7 | 182.4 | 93.2 | 68.2 | 48.1 | 37.6 | 30.8 | 25.8 | 23.6 | 23.1 |
| 47.5° | 1553.1 | 1102.8 | 145.1 | 84.9 | 57.9 | 40.8 | 32.1 | 25.6 | 21.3 | 19.0 | 18.8 |
| 50° | 1747.6 | 1192.3 | 121.3 | 75.9 | 48.4 | 34.8 | 26.6 | 20.8 | 17.3 | 15.3 | 15.0 |
| 52.5° | 2005.7 | 1351.7 | 108.3 | 67.2 | 40.1 | 29.6 | 21.8 | 16.5 | 13.5 | 12.0 | 11.8 |
| 55° | 2290.4 | 1544.6 | 99.7 | 57.6 | 32.8 | 24.6 | 17.3 | 13.0 | 10.5 | 9.3 | 8.8 |
| 57.5° | 2568.3 | 1711.8 | 91.7 | 48.4 | 27.3 | 20.0 | 13.8 | 10.3 | 8.3 | 7.0 | 6.8 |
| 60° | 2823.6 | 1865.4 | 82.4 | 38.8 | 22.3 | 15.8 | 10.8 | 8.0 | 6.5 | 5.3 | 5.3 |
| 62.5° | 3097.0 | 1984.1 | 69.7 | 30.3 | 18.3 | 12.0 | 8.8 | 7.3 | 5.3 | 4.5 | 4.3 |
| 65° | 3386.7 | 2072.3 | 54.6 | 23.6 | 14.3 | 9.0 | 7.3 | 7.5 | 4.3 | 3.3 | 3.0 |
| 67.5° | 3600.7 | 2054.8 | 40.3 | 18.5 | 11.0 | 7.0 | 7.0 | 8.0 | 3.8 | 2.5 | 2.3 |
| 69° | 3553.6 | 1912.2 | 33.8 | 16.0 | 9.5 | 6.0 | 6.5 | 8.0 | 3.5 | 2.3 | 2.0 |
| 70° | 3417.0 | 1754.4 | 29.8 | 14.3 | 8.5 | 5.5 | 6.3 | 7.8 | 3.3 | 2.3 | 2.0 |
| 72.5° | 2845.7 | 1321.3 | 23.3 | 10.8 | 6.8 | 4.5 | 5.3 | 6.8 | 3.3 | 2.3 | 1.8 |
| 75° | 2140.5 | 845.7 | 17.8 | 7.8 | 5.0 | 3.5 | 4.0 | 5.0 | 3.3 | 2.0 | 1.8 |
| 77.5° | 1164.7 | 305.0 | 12.8 | 5.3 | 3.5 | 2.8 | 2.8 | 3.8 | 3.0 | 1.5 | 1.0 |
| 80° | 299.5 | 76.7 | 8.0 | 3.5 | 2.8 | 2.0 | 1.8 | 2.5 | 1.8 | 0.3 | 0.0 |
| 82.5° | 73.9 | 17.3 | 4.3 | 2.5 | 2.0 | 0.8 | 0.8 | 1.3 | 0.8 | 0.0 | 0.0 |
| 85° | 40.6 | 8.5 | 2.8 | 1.8 | 1.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| 87.5° | 20.8 | 2.5 | 0.8 | 0.5 | 0.3 | 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/03/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Invue
 Catalog Number: **EMM2-HTN-SA1A-827-U-5WQ**
 Description: Epic Modern Light Square 40W 5WQ Optic

Spectral Parameters

CCT (K): 2764
 CIE u': 0.2591
 CIE v': 0.5290
 Duv: 0.0020
 CIE x: 0.4581
 CIE y: 0.4156
 CIE z: 0.1263
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 583
 Purity: 62.2537
 Rf: 84.7
 Rg: 94.6

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 80.9 | | |
| R1: | 78.8 | R9: | -1.5 |
| R2: | 89.9 | R10: | 77.9 |
| R3: | 96.2 | R11: | 78.9 |
| R4: | 79.1 | R12: | 71.6 |
| R5: | 79.1 | R13: | 81.2 |
| R6: | 88.8 | R14: | 98.5 |
| R7: | 81.3 | R15: | 69.9 |
| R8: | 54.3 | | |



Test Conditions

Stabilization Time: 81M
 Operation Time: 2H 21M
 Sphere Temperature (°C): 25.2

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| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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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 2700K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: 4337.9

| 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 | 0 | 0.0 | 490 | 18018 | 2.6 | 620 | 87426 | 22.8 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 3.9 | 625 | 83013 | 18.2 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 5.8 | 630 | 78077 | 14.1 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 8.5 | 635 | 72080 | 10.7 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 11.5 | 640 | 66249 | 7.9 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 15.2 | 645 | 59973 | 5.7 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 18.7 | 650 | 53972 | 3.9 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 21.9 | 655 | 48369 | 2.7 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 24.9 | 660 | 42641 | 1.8 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 27.6 | 665 | 37602 | 1.1 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.0 | 540 | 46032 | 30.0 | 670 | 32798 | 0.7 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.0 | 545 | 48553 | 32.5 | 675 | 28558 | 0.5 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 0.0 | 550 | 51408 | 34.9 | 680 | 24782 | 0.3 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 0.0 | 555 | 54711 | 37.4 | 685 | 21386 | 0.2 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 0.0 | 560 | 58847 | 40.0 | 690 | 18413 | 0.1 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 0.1 | 565 | 63386 | 42.4 | 695 | 15721 | 0.1 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 0.2 | 570 | 68196 | 44.3 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 0.6 | 575 | 73613 | 46.0 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 0.9 | 580 | 79207 | 47.1 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 0.9 | 585 | 84248 | 47.0 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 0.9 | 590 | 88397 | 45.7 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 1.0 | 595 | 91428 | 43.4 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 0.9 | 600 | 93452 | 40.3 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 1.0 | 605 | 93959 | 36.4 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 1.3 | 610 | 93079 | 32.0 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 1.8 | 615 | 90707 | 27.3 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

REPORT NUMBER: SP1-2407-157-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: 5286.7

S/P: 1.22

| 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 | 0 | 0.0 | 490 | 18018 | 75.9 | 620 | 87426 | 0.4 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 93.2 | 625 | 83013 | 0.2 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 107.8 | 630 | 78077 | 0.1 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 118.7 | 635 | 72080 | 0.1 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 122.2 | 640 | 66249 | 0.1 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 120.8 | 645 | 59973 | 0.0 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 113.9 | 650 | 53972 | 0.0 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 104.1 | 655 | 48369 | 0.0 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 92.4 | 660 | 42641 | 0.0 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 80.5 | 665 | 37602 | 0.0 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.1 | 540 | 46032 | 68.2 | 670 | 32798 | 0.0 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.3 | 545 | 48553 | 57.1 | 675 | 28558 | 0.0 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 1.1 | 550 | 51408 | 46.7 | 680 | 24782 | 0.0 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 2.5 | 555 | 54711 | 37.4 | 685 | 21386 | 0.0 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 5.9 | 560 | 58847 | 29.4 | 690 | 18413 | 0.0 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 12.5 | 565 | 63386 | 22.5 | 695 | 15721 | 0.0 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 26.3 | 570 | 68196 | 16.9 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 55.2 | 575 | 73613 | 12.4 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 85.4 | 580 | 79207 | 9.0 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 75.1 | 585 | 84248 | 6.3 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 63.2 | 590 | 88397 | 4.4 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 63.2 | 595 | 91428 | 3.0 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 54.2 | 600 | 93452 | 2.0 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 48.8 | 605 | 93959 | 1.3 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 54.2 | 610 | 93079 | 0.9 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 63.3 | 615 | 90707 | 0.5 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

REPORT NUMBER: SP1-2407-157-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: 9797

M/P: 2.26

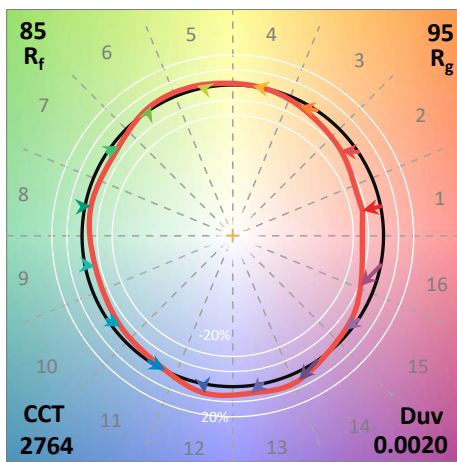
| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 0 | 0.0 | 490 | 18018 | 27.7 | 620 | 87426 | 1.1 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 36.0 | 625 | 83013 | 0.7 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 44.2 | 630 | 78077 | 0.4 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 51.8 | 635 | 72080 | 0.3 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 57.0 | 640 | 66249 | 0.2 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 60.5 | 645 | 59973 | 0.1 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 61.4 | 650 | 53972 | 0.1 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 60.6 | 655 | 48369 | 0.0 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 58.2 | 660 | 42641 | 0.0 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 55.0 | 665 | 37602 | 0.0 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.0 | 540 | 46032 | 50.9 | 670 | 32798 | 0.0 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.1 | 545 | 48553 | 46.6 | 675 | 28558 | 0.0 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 0.3 | 550 | 51408 | 42.0 | 680 | 24782 | 0.0 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 0.8 | 555 | 54711 | 37.4 | 685 | 21386 | 0.0 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 1.9 | 560 | 58847 | 32.9 | 690 | 18413 | 0.0 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 4.1 | 565 | 63386 | 28.4 | 695 | 15721 | 0.0 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 8.7 | 570 | 68196 | 24.1 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 18.5 | 575 | 73613 | 20.0 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 28.3 | 580 | 79207 | 16.3 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 24.7 | 585 | 84248 | 12.9 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 20.4 | 590 | 88397 | 9.8 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 20.1 | 595 | 91428 | 7.3 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 17.2 | 600 | 93452 | 5.3 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 15.7 | 605 | 93959 | 3.7 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 18.0 | 610 | 93079 | 2.5 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 21.9 | 615 | 90707 | 1.7 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

Summary

$R_f = 84.7$
 $R_g = 94.6$
 CIE $R_a = 80.9$
 $R_9 = -1.5$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 84 | CES51 = 95 | CES76 = 81 |
| CES02 = 63 | CES27 = 95 | CES52 = 94 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 71 | CES29 = 87 | CES54 = 91 | CES79 = 89 |
| CES05 = 50 | CES30 = 94 | CES55 = 90 | CES80 = 89 |
| CES06 = 52 | CES31 = 89 | CES56 = 86 | CES81 = 69 |
| CES07 = 43 | CES32 = 82 | CES57 = 85 | CES82 = 96 |
| CES08 = 41 | CES33 = 91 | CES58 = 86 | CES83 = 93 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 92 |
| CES10 = 77 | CES35 = 96 | CES60 = 94 | CES85 = 76 |
| CES11 = 60 | CES36 = 90 | CES61 = 89 | CES86 = 65 |
| CES12 = 66 | CES37 = 96 | CES62 = 94 | CES87 = 84 |
| CES13 = 44 | CES38 = 98 | CES63 = 87 | CES88 = 86 |
| CES14 = 74 | CES39 = 98 | CES64 = 82 | CES89 = 73 |
| CES15 = 72 | CES40 = 95 | CES65 = 78 | CES90 = 88 |
| CES16 = 48 | CES41 = 96 | CES66 = 81 | CES91 = 82 |
| CES17 = 50 | CES42 = 97 | CES67 = 80 | CES92 = 64 |
| CES18 = 57 | CES43 = 91 | CES68 = 83 | CES93 = 78 |
| CES19 = 73 | CES44 = 99 | CES69 = 88 | CES94 = 59 |
| CES20 = 67 | CES45 = 93 | CES70 = 80 | CES95 = 74 |
| CES21 = 87 | CES46 = 89 | CES71 = 79 | CES96 = 83 |
| CES22 = 79 | CES47 = 92 | CES72 = 92 | CES97 = 88 |
| CES23 = 92 | CES48 = 83 | CES73 = 75 | CES98 = 83 |
| CES24 = 91 | CES49 = 90 | CES74 = 91 | CES99 = 74 |
| CES25 = 72 | CES50 = 94 | CES75 = 81 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)