

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

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

Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1455867

Luminaire Tested: GLAN-SB2A-730-U-T2LG

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1455867  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/21/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB2A-730-U-T2LG  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 2xLight Square  
PACKAGE 70CRI 3000K FIXTURE w/ TYPE II LOW GLARE  
Light Source: (52) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8676.6 lumens  
Efficiency: N/A  
Efficacy: 151.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2

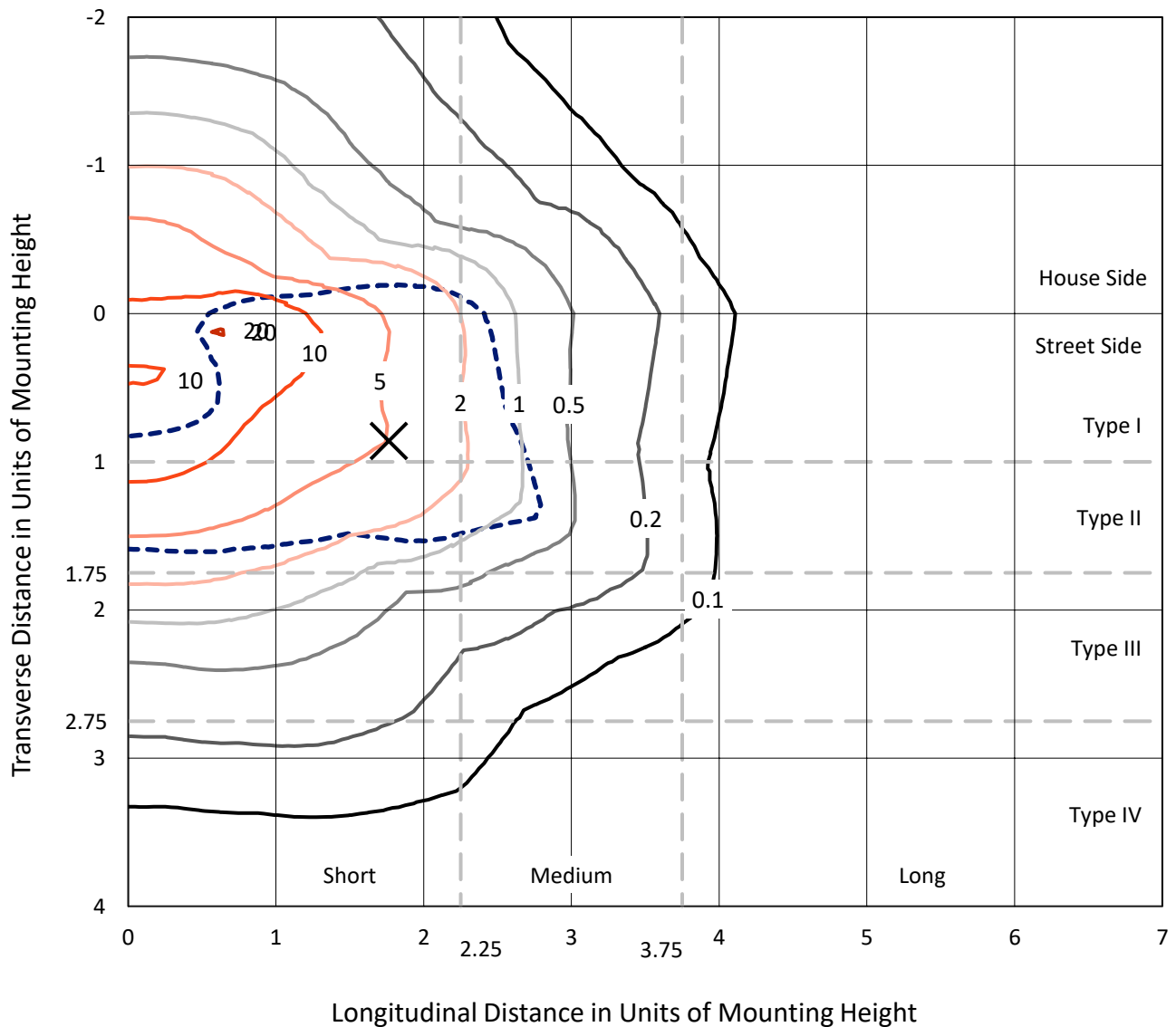
Input Watts (W): 57.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

REPORT NUMBER: P1455867

CATALOG NUMBER: GLAN-SB2A-730-U-T2LG

### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

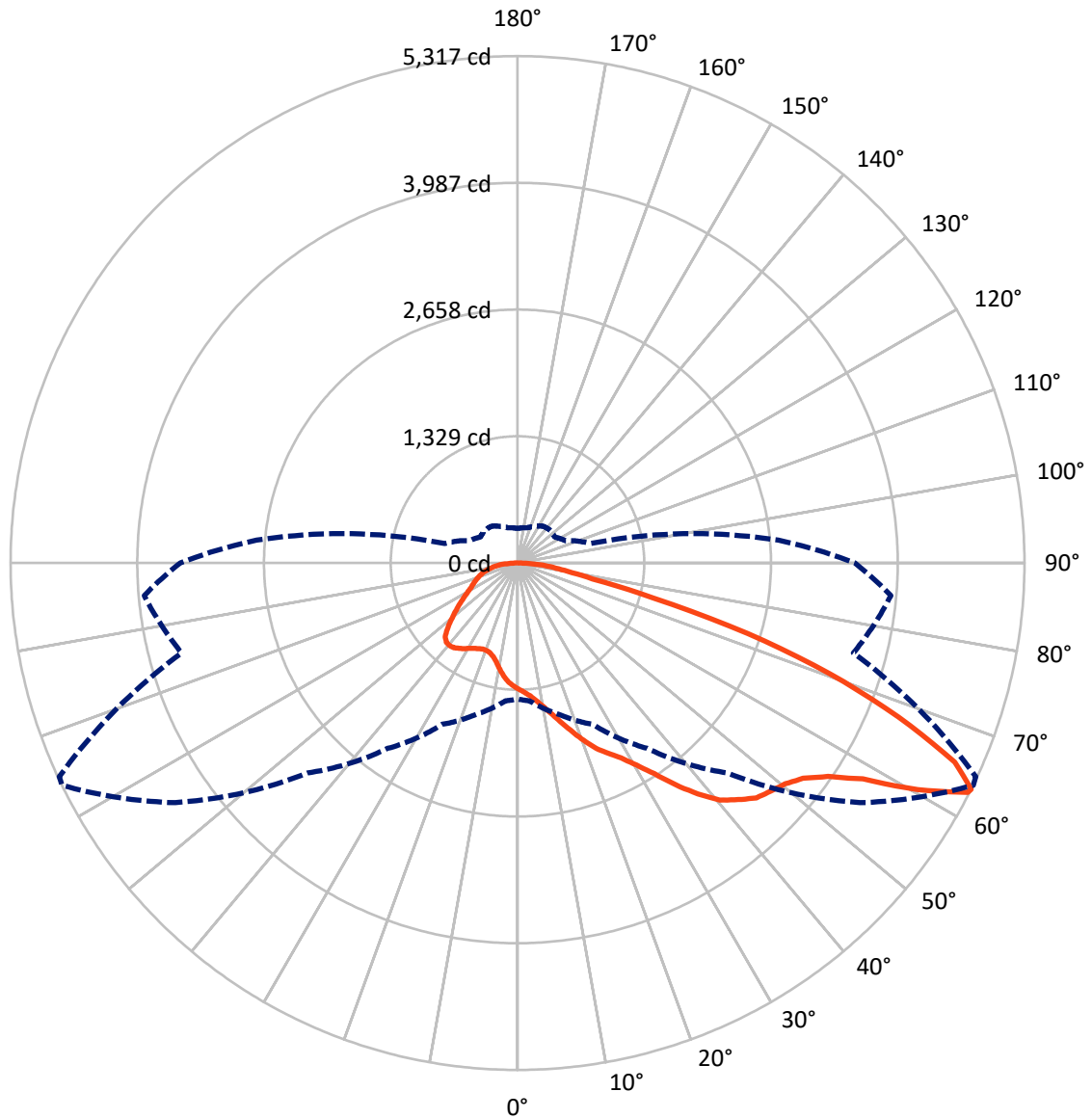


Based on 10 foot mounting height. Maximum calculated value = 20.4 fc  
 Type II - Short - N/A

REPORT NUMBER: P1455867

CATALOG NUMBER: GLAN-SB2A-730-U-T2LG

### Luminous Intensity Polar Plot



— Vertical Plane Through 64-Deg Lateral      - - - Horizontal Cone Through 63-Deg Vertical

REPORT NUMBER: P1455867

CATALOG NUMBER: GLAN-SB2A-730-U-T2LG

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2331.2   | 0.0    | 2331.2 |
|                    | % Fixture | 26.9     | 0.0    | 26.9   |
| <b>Street Side</b> | Lumens    | 6345.4   | 0.0    | 6345.4 |
|                    | % Fixture | 73.1     | 0.0    | 73.1   |
| <b>Total</b>       | Lumens    | 8676.6   | 0.0    | 8676.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 121.3  | 1.4       |
| 10°-20°   | 373.5  | 4.3       |
| 20°-30°   | 683.0  | 7.9       |
| 30°-40°   | 1174.8 | 13.5      |
| 40°-50°   | 1732.5 | 20.0      |
| 50°-60°   | 2076.6 | 23.9      |
| 60°-70°   | 1666.6 | 19.2      |
| 70°-80°   | 669.7  | 7.7       |
| 80°-90°   | 178.6  | 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°    | 8676.6 | 100.0     |
| 0°-180°   | 8676.6 | 100.0     |



REPORT NUMBER: P1455867

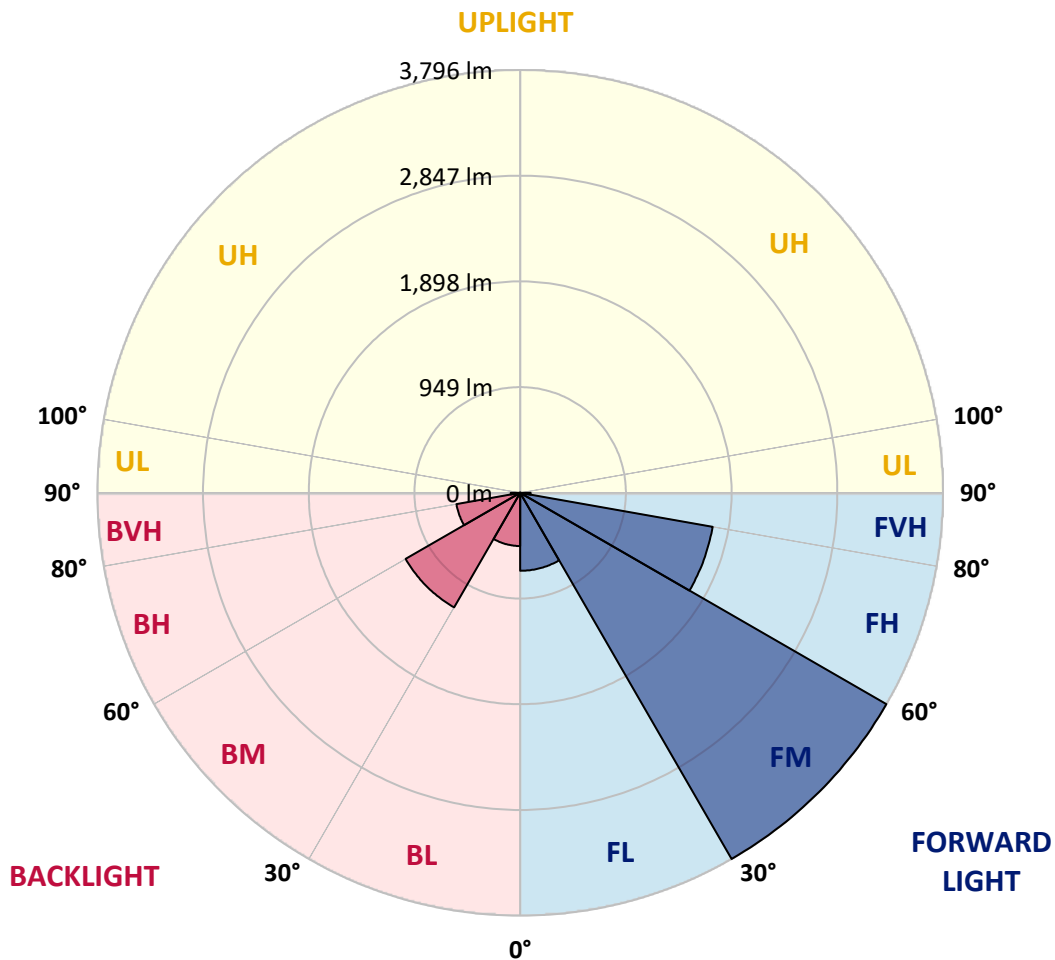
CATALOG NUMBER: GLAN-SB2A-730-U-T2LG

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 700.0  | 8.1       |                         |      |         |
| FM (30°-60°)   | 3796.5 | 43.8      |                         |      |         |
| FH (60°-80°)   | 1755.1 | 20.2      |                         |      | G1/1800 |
| FVH (80°-90°)  | 93.8   | 1.1       |                         |      | G1/100  |
| BL (0°-30°)    | 477.7  | 5.5       | B1/500                  |      |         |
| BM (30°-60°)   | 1187.4 | 13.7      | B2/2500                 |      |         |
| BH (60°-80°)   | 581.2  | 6.7       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 84.8   | 1.0       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Short





REPORT NUMBER: P1455867

CATALOG NUMBER: GLAN-SB2A-730-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 64°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 |
| 2.5°  | 1375.9 | 1377.9 | 1372.0 | 1370.1 | 1374.0 | 1366.2 | 1364.2 | 1356.4 | 1352.5 | 1344.7 | 1335.0 |
| 5°    | 1414.9 | 1416.8 | 1412.9 | 1412.9 | 1416.8 | 1411.0 | 1409.0 | 1401.3 | 1397.4 | 1389.6 | 1370.1 |
| 7.5°  | 1412.9 | 1414.9 | 1418.8 | 1434.4 | 1453.9 | 1461.7 | 1467.5 | 1461.7 | 1459.7 | 1448.0 | 1428.5 |
| 10°   | 1381.8 | 1383.7 | 1393.5 | 1416.8 | 1465.6 | 1500.6 | 1537.7 | 1537.7 | 1541.6 | 1531.8 | 1496.7 |
| 12.5° | 1338.9 | 1340.8 | 1364.2 | 1401.3 | 1465.6 | 1526.0 | 1602.0 | 1633.2 | 1631.2 | 1625.4 | 1584.4 |
| 15°   | 1235.6 | 1235.6 | 1270.7 | 1340.8 | 1444.1 | 1543.5 | 1656.6 | 1740.4 | 1742.3 | 1748.2 | 1699.4 |
| 17.5° | 1147.9 | 1149.8 | 1179.1 | 1241.4 | 1375.9 | 1533.8 | 1715.0 | 1859.2 | 1865.1 | 1898.2 | 1828.1 |
| 20°   | 1155.7 | 1155.7 | 1165.4 | 1192.7 | 1301.9 | 1494.8 | 1748.2 | 1985.9 | 2005.4 | 2083.4 | 1995.7 |
| 22.5° | 1216.1 | 1216.1 | 1223.9 | 1222.0 | 1288.2 | 1469.5 | 1769.6 | 2112.6 | 2147.7 | 2309.4 | 2196.4 |
| 25°   | 1327.2 | 1325.2 | 1317.5 | 1305.8 | 1344.7 | 1496.7 | 1818.3 | 2210.0 | 2278.3 | 2558.9 | 2428.3 |
| 27.5° | 1463.6 | 1459.7 | 1448.0 | 1428.5 | 1455.8 | 1578.6 | 1902.1 | 2313.3 | 2387.4 | 2831.7 | 2673.9 |
| 30°   | 1633.2 | 1621.5 | 1609.8 | 1584.4 | 1613.7 | 1713.1 | 2026.8 | 2459.5 | 2529.7 | 3141.6 | 2970.1 |
| 32.5° | 1833.9 | 1847.5 | 1808.6 | 1773.5 | 1804.7 | 1896.3 | 2212.0 | 2633.0 | 2709.0 | 3465.1 | 3278.0 |
| 35°   | 2134.0 | 2175.0 | 2163.3 | 1985.9 | 2015.2 | 2116.5 | 2428.3 | 2857.1 | 2925.3 | 3759.4 | 3593.8 |
| 37.5° | 2430.3 | 2420.5 | 2430.3 | 2282.2 | 2235.4 | 2358.2 | 2660.2 | 3071.5 | 3137.7 | 3999.1 | 3872.4 |
| 40°   | 2668.0 | 2697.3 | 2697.3 | 2576.4 | 2516.0 | 2597.9 | 2870.7 | 3268.3 | 3332.6 | 4131.6 | 4073.2 |
| 42.5° | 2927.2 | 2931.1 | 2923.3 | 2818.1 | 2794.7 | 2816.1 | 3055.9 | 3393.0 | 3445.6 | 4199.9 | 4209.6 |
| 45°   | 3219.6 | 3217.6 | 3184.5 | 3096.8 | 3061.7 | 3042.2 | 3170.8 | 3513.8 | 3566.5 | 4231.0 | 4283.7 |
| 47.5° | 3461.2 | 3471.0 | 3472.9 | 3379.4 | 3320.9 | 3237.1 | 3270.2 | 3574.3 | 3634.7 | 4196.0 | 4299.3 |
| 50°   | 3474.9 | 3490.5 | 3564.5 | 3591.8 | 3580.1 | 3445.6 | 3361.8 | 3638.6 | 3699.0 | 4203.8 | 4355.8 |
| 52.5° | 3389.1 | 3404.7 | 3500.2 | 3613.2 | 3749.7 | 3685.4 | 3506.1 | 3749.7 | 3812.0 | 4279.8 | 4484.4 |
| 55°   | 3159.2 | 3184.5 | 3326.8 | 3484.6 | 3728.2 | 3819.8 | 3761.4 | 3950.4 | 4008.9 | 4340.2 | 4634.5 |
| 57.5° | 2749.9 | 2781.1 | 2977.9 | 3229.3 | 3562.6 | 3788.6 | 4131.6 | 4272.0 | 4320.7 | 4383.1 | 4636.4 |
| 60°   | 2056.1 | 2081.4 | 2389.3 | 2728.4 | 3229.3 | 3593.8 | 4351.9 | 4823.5 | 4850.8 | 4151.1 | 4373.3 |
| 62.5° | 1514.3 | 1539.6 | 1746.2 | 1989.8 | 2537.5 | 3235.2 | 4394.7 | 5301.0 | 5304.9 | 3732.1 | 4010.8 |
| 63°   | 1426.6 | 1451.9 | 1639.0 | 1867.0 | 2373.7 | 3114.3 | 4381.1 | 5316.6 | 5302.9 | 3646.4 | 3930.9 |
| 65°   | 1110.9 | 1155.7 | 1350.6 | 1524.0 | 1779.3 | 2479.0 | 4205.7 | 5039.8 | 5059.3 | 3393.0 | 3529.4 |
| 67.5° | 756.2  | 789.3  | 1036.8 | 1237.5 | 1344.7 | 1578.6 | 3449.5 | 4312.9 | 4344.1 | 3129.9 | 2816.1 |
| 70°   | 584.7  | 600.3  | 744.5  | 980.3  | 1087.5 | 1003.7 | 2249.0 | 3472.9 | 3472.9 | 2443.9 | 1995.7 |
| 72.5° | 458.0  | 463.8  | 561.3  | 765.9  | 875.1  | 771.8  | 1253.1 | 2525.8 | 2432.2 | 1450.0 | 1331.1 |
| 75°   | 327.4  | 335.2  | 422.9  | 571.0  | 697.7  | 608.1  | 801.0  | 1471.4 | 1414.9 | 834.1  | 888.7  |
| 77.5° | 259.2  | 263.1  | 315.7  | 421.0  | 565.2  | 463.8  | 610.0  | 802.9  | 795.1  | 586.6  | 571.0  |
| 80°   | 204.6  | 212.4  | 247.5  | 302.1  | 436.6  | 362.5  | 454.1  | 530.1  | 514.5  | 403.4  | 366.4  |
| 82.5° | 146.2  | 159.8  | 191.0  | 230.0  | 323.5  | 259.2  | 298.2  | 374.2  | 374.2  | 304.0  | 241.7  |
| 85°   | 89.6   | 101.3  | 113.0  | 142.3  | 230.0  | 167.6  | 157.9  | 241.7  | 247.5  | 228.0  | 155.9  |
| 87.5° | 42.9   | 46.8   | 54.6   | 60.4   | 83.8   | 76.0   | 62.4   | 91.6   | 93.5   | 101.3  | 64.3   |
| 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: P1455867

CATALOG NUMBER: GLAN-SB2A-730-U-T2LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 | 1321.3 |
| 2.5°  | 1333.0 | 1329.1 | 1309.7 | 1290.2 | 1268.7 | 1249.2 | 1229.7 | 1214.2 | 1196.6 | 1200.5 | 1202.5 |
| 5°    | 1358.4 | 1348.6 | 1305.8 | 1255.1 | 1188.8 | 1126.5 | 1066.0 | 1023.2 | 995.9  | 988.1  | 972.5  |
| 7.5°  | 1412.9 | 1389.6 | 1311.6 | 1204.4 | 1081.6 | 984.2  | 927.7  | 902.3  | 894.5  | 896.5  | 892.6  |
| 10°   | 1475.3 | 1440.2 | 1319.4 | 1144.0 | 988.1  | 921.8  | 914.0  | 929.6  | 937.4  | 945.2  | 947.2  |
| 12.5° | 1557.2 | 1500.6 | 1315.5 | 1077.7 | 943.3  | 931.6  | 960.8  | 990.0  | 1007.6 | 1019.3 | 1017.3 |
| 15°   | 1652.7 | 1576.7 | 1303.8 | 1023.2 | 937.4  | 968.6  | 1005.6 | 1038.8 | 1060.2 | 1071.9 | 1066.0 |
| 17.5° | 1767.6 | 1666.3 | 1290.2 | 988.1  | 955.0  | 992.0  | 1031.0 | 1064.1 | 1087.5 | 1095.3 | 1089.4 |
| 20°   | 1909.9 | 1767.6 | 1266.8 | 972.5  | 968.6  | 1001.7 | 1036.8 | 1068.0 | 1087.5 | 1095.3 | 1087.5 |
| 22.5° | 2077.5 | 1888.5 | 1247.3 | 972.5  | 974.4  | 1001.7 | 1027.1 | 1050.5 | 1068.0 | 1073.8 | 1064.1 |
| 25°   | 2291.9 | 2028.8 | 1239.5 | 988.1  | 976.4  | 992.0  | 1005.6 | 1019.3 | 1029.0 | 1032.9 | 1029.0 |
| 27.5° | 2510.2 | 2190.6 | 1243.4 | 1007.6 | 974.4  | 978.3  | 978.3  | 980.3  | 982.2  | 984.2  | 982.2  |
| 30°   | 2761.6 | 2354.3 | 1259.0 | 1032.9 | 978.3  | 958.9  | 953.0  | 941.3  | 931.6  | 923.8  | 916.0  |
| 32.5° | 3005.2 | 2510.2 | 1286.3 | 1069.9 | 974.4  | 937.4  | 925.7  | 896.5  | 869.2  | 845.8  | 845.8  |
| 35°   | 3268.3 | 2671.9 | 1335.0 | 1097.2 | 970.5  | 917.9  | 884.8  | 851.7  | 822.4  | 789.3  | 789.3  |
| 37.5° | 3494.4 | 2810.3 | 1374.0 | 1128.4 | 966.6  | 894.5  | 841.9  | 804.9  | 773.7  | 740.6  | 736.7  |
| 40°   | 3652.2 | 2890.2 | 1397.4 | 1140.1 | 953.0  | 863.4  | 801.0  | 754.2  | 709.4  | 664.6  | 662.6  |
| 42.5° | 3728.2 | 2886.3 | 1383.7 | 1136.2 | 927.7  | 824.4  | 765.9  | 703.5  | 643.1  | 602.2  | 598.3  |
| 45°   | 3769.2 | 2861.0 | 1331.1 | 1103.1 | 886.7  | 783.5  | 721.1  | 654.8  | 594.4  | 557.4  | 549.6  |
| 47.5° | 3761.4 | 2798.6 | 1259.0 | 1021.2 | 832.2  | 738.6  | 676.3  | 608.1  | 559.3  | 537.9  | 537.9  |
| 50°   | 3782.8 | 2749.9 | 1177.1 | 927.7  | 758.1  | 686.0  | 635.3  | 573.0  | 543.7  | 516.5  | 506.7  |
| 52.5° | 3878.3 | 2790.8 | 1107.0 | 840.0  | 688.0  | 635.3  | 600.3  | 547.6  | 510.6  | 493.1  | 487.2  |
| 55°   | 4005.0 | 2878.5 | 1040.7 | 762.0  | 619.7  | 590.5  | 573.0  | 524.3  | 481.4  | 463.8  | 454.1  |
| 57.5° | 4028.4 | 2938.9 | 976.4  | 686.0  | 563.2  | 555.4  | 549.6  | 483.3  | 448.2  | 434.6  | 426.8  |
| 60°   | 3866.6 | 2894.1 | 892.6  | 617.8  | 518.4  | 522.3  | 506.7  | 458.0  | 417.1  | 403.4  | 395.6  |
| 62.5° | 3591.8 | 2777.2 | 808.8  | 559.3  | 483.3  | 491.1  | 475.5  | 426.8  | 385.9  | 372.2  | 368.3  |
| 63°   | 3537.2 | 2746.0 | 789.3  | 553.5  | 475.5  | 485.3  | 471.6  | 422.9  | 382.0  | 368.3  | 362.5  |
| 65°   | 3211.8 | 2558.9 | 721.1  | 522.3  | 450.2  | 450.2  | 452.1  | 403.4  | 368.3  | 362.5  | 358.6  |
| 67.5° | 2619.3 | 2136.0 | 647.0  | 485.3  | 422.9  | 428.8  | 438.5  | 411.2  | 397.6  | 393.7  | 389.8  |
| 70°   | 1980.1 | 1607.8 | 582.7  | 450.2  | 393.7  | 413.2  | 479.4  | 467.7  | 417.1  | 382.0  | 374.2  |
| 72.5° | 1403.2 | 1095.3 | 526.2  | 415.1  | 358.6  | 407.3  | 497.0  | 446.3  | 376.1  | 335.2  | 327.4  |
| 75°   | 939.4  | 705.5  | 469.7  | 378.1  | 319.6  | 376.1  | 469.7  | 407.3  | 327.4  | 317.7  | 306.0  |
| 77.5° | 590.5  | 502.8  | 413.2  | 335.2  | 276.7  | 335.2  | 426.8  | 362.5  | 282.6  | 286.5  | 268.9  |
| 80°   | 360.5  | 358.6  | 346.9  | 284.5  | 222.2  | 267.0  | 358.6  | 306.0  | 226.1  | 226.1  | 200.7  |
| 82.5° | 214.4  | 259.2  | 294.3  | 235.8  | 161.8  | 191.0  | 259.2  | 230.0  | 189.0  | 183.2  | 171.5  |
| 85°   | 144.2  | 175.4  | 233.9  | 181.2  | 103.3  | 116.9  | 179.3  | 192.9  | 173.5  | 152.0  | 142.3  |
| 87.5° | 52.6   | 70.2   | 107.2  | 74.1   | 44.8   | 70.2   | 134.5  | 140.3  | 105.2  | 81.9   | 74.1   |
| 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



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3000K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 2985  
 CIE u': 0.2504  
 CIE v': 0.5243  
 Duv: 0.0019  
 CIE x: 0.4408  
 CIE y: 0.4101  
 CIE z: 0.1491  
 Peak Wavelength (nm): 595  
 Dominant Wavelength (nm): 582  
 Purity: 55.41818  
 Rf: 73.8  
 Rg: 94.4

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 70.8 |      |       |
| R1:       | 66.3 | R9:  | -43.2 |
| R2:       | 80.6 | R10: | 57.6  |
| R3:       | 94.5 | R11: | 64.8  |
| R4:       | 68.2 | R12: | 53.5  |
| R5:       | 66.5 | R13: | 68.7  |
| R6:       | 74.7 | R14: | 97.0  |
| R7:       | 76.2 | R15: | 56.4  |
| R8:       | 39.6 |      |       |



**Test Conditions**

Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

| 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           |

REPORT NUMBER: SP1-2407-184-4

**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

REPORT NUMBER: SP1-2407-184-4

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-4

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.19**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-4

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 2.13**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 142                      | NR            | 620    | 803                      | NR            | 750    | 17                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 189                      | NR            | 625    | 734                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 240                      | NR            | 630    | 670                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 290                      | NR            | 635    | 600                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 335                      | NR            | 640    | 535                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 375                      | NR            | 645    | 473                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 408                      | NR            | 650    | 415                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 434                      | NR            | 655    | 362                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 461                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 486                      | NR            | 665    | 271                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 16                       | NR            | 540    | 514                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 33                       | NR            | 545    | 549                      | NR            | 675    | 198                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 69                       | NR            | 550    | 591                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 640                      | NR            | 685    | 144                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 227                      | NR            | 560    | 695                      | NR            | 690    | 123                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 369                      | NR            | 565    | 757                      | NR            | 695    | 104                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 517                      | NR            | 570    | 822                      | NR            | 700    | 88                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 498                      | NR            | 575    | 882                      | NR            | 705    | 75                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 315                      | NR            | 580    | 935                      | NR            | 710    | 63                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 204                      | NR            | 585    | 972                      | NR            | 715    | 54                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 145                      | NR            | 590    | 996                      | NR            | 720    | 46                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 100                      | NR            | 595    | 1000                     | NR            | 725    | 39                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 78                       | NR            | 600    | 989                      | NR            | 730    | 33                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 76                       | NR            | 605    | 960                      | NR            | 735    | 28                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 83                       | NR            | 610    | 918                      | NR            | 740    | 24                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 105                      | NR            | 615    | 864                      | NR            | 745    | 20                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

$R_f = 73.8$   
 $R_g = 94.4$   
 CIE  $R_a = 70.8$   
 $R_g = -43.2$

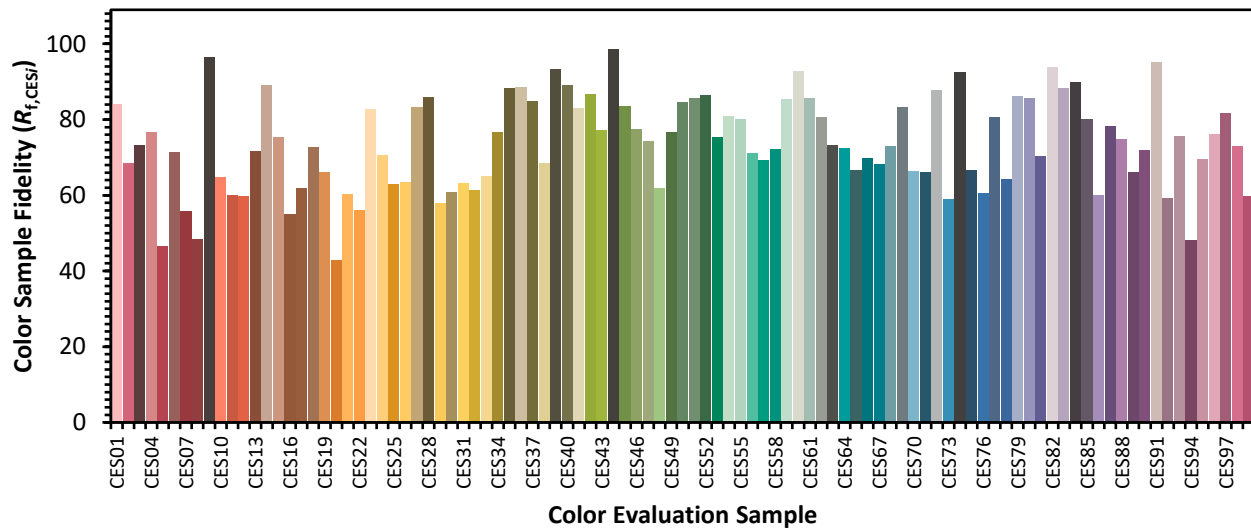


**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)