

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: P1438213

Luminaire Tested: **GALN-SB9A-750-U-T4LG-HSS**

Issue Date: 03/27/202

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Report Generated By 670245763



**Test Information**

Test Method: LM-79-08  
 Report Number: P1438213  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 03/27/202  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: McGRAW-EDISON  
 Catalog Number: GALN-SB9A-750-U-T4LG-HSS  
 Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 9xLight  
 Square PACKAGE 70CRI 5000K FIXTURE w/ TYPE IV LOW GLARE WITH HOUSE SIDE  
 SHIELD  
 Light Source: (234) 5000K CCT, 70 CRI LEDS  
 Ballast/Driver: ELECTRONIC DRIVER  
 Luminaire Equipment:

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

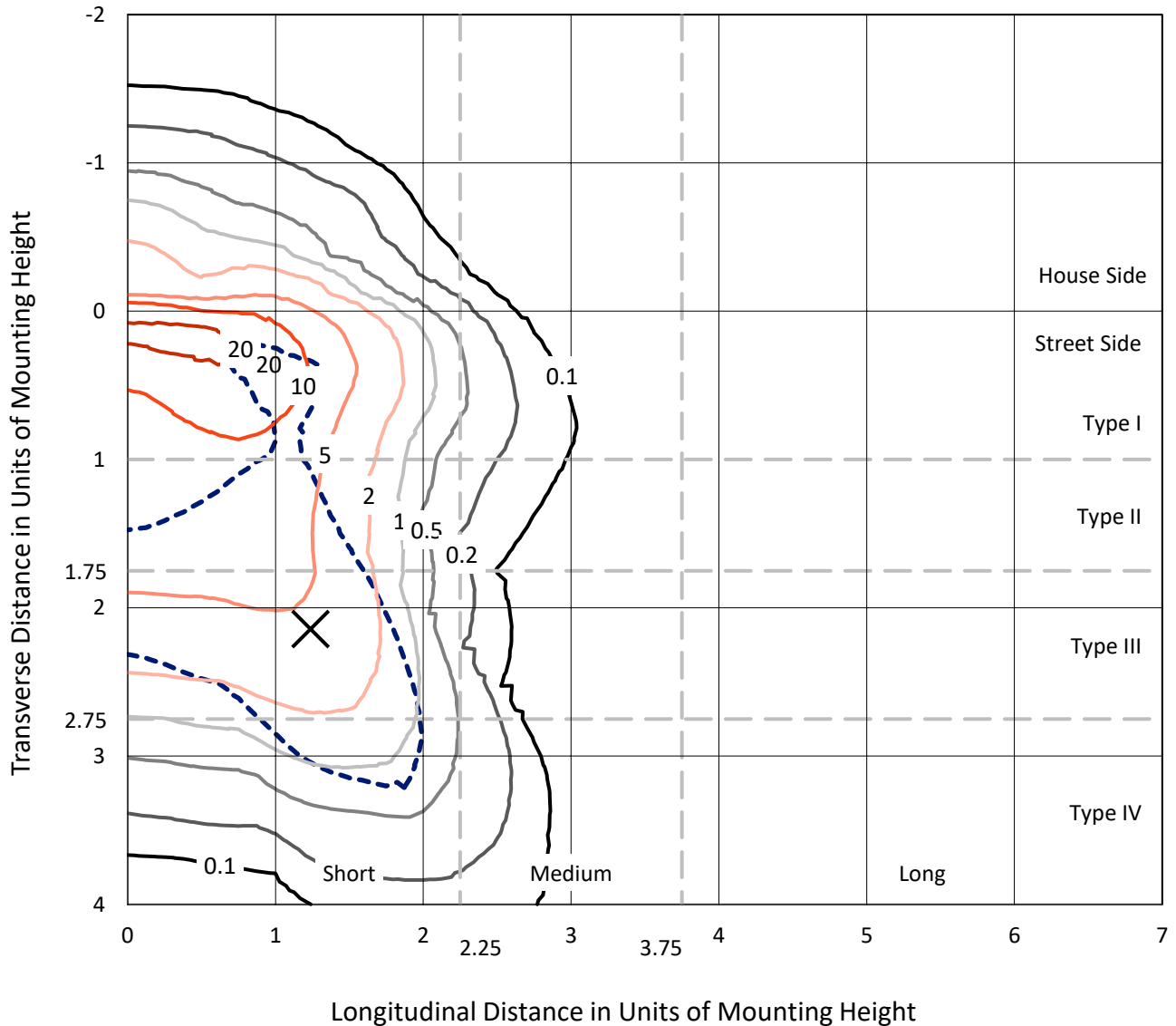
**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 31344.9 lumens  
 Efficiency: N/A  
 Efficacy: 122.7 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
 IES Classification: Type IV - Short  
 BUG Rating: B2 - U0 - G4  
  
 Input Watts (W): 255.5  
 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: P1438213  
 CATALOG NUMBER: GALN-SB9A-750-U-T4LG-HSS

### Iso-Footcandle Lines of Horizontal Illumination

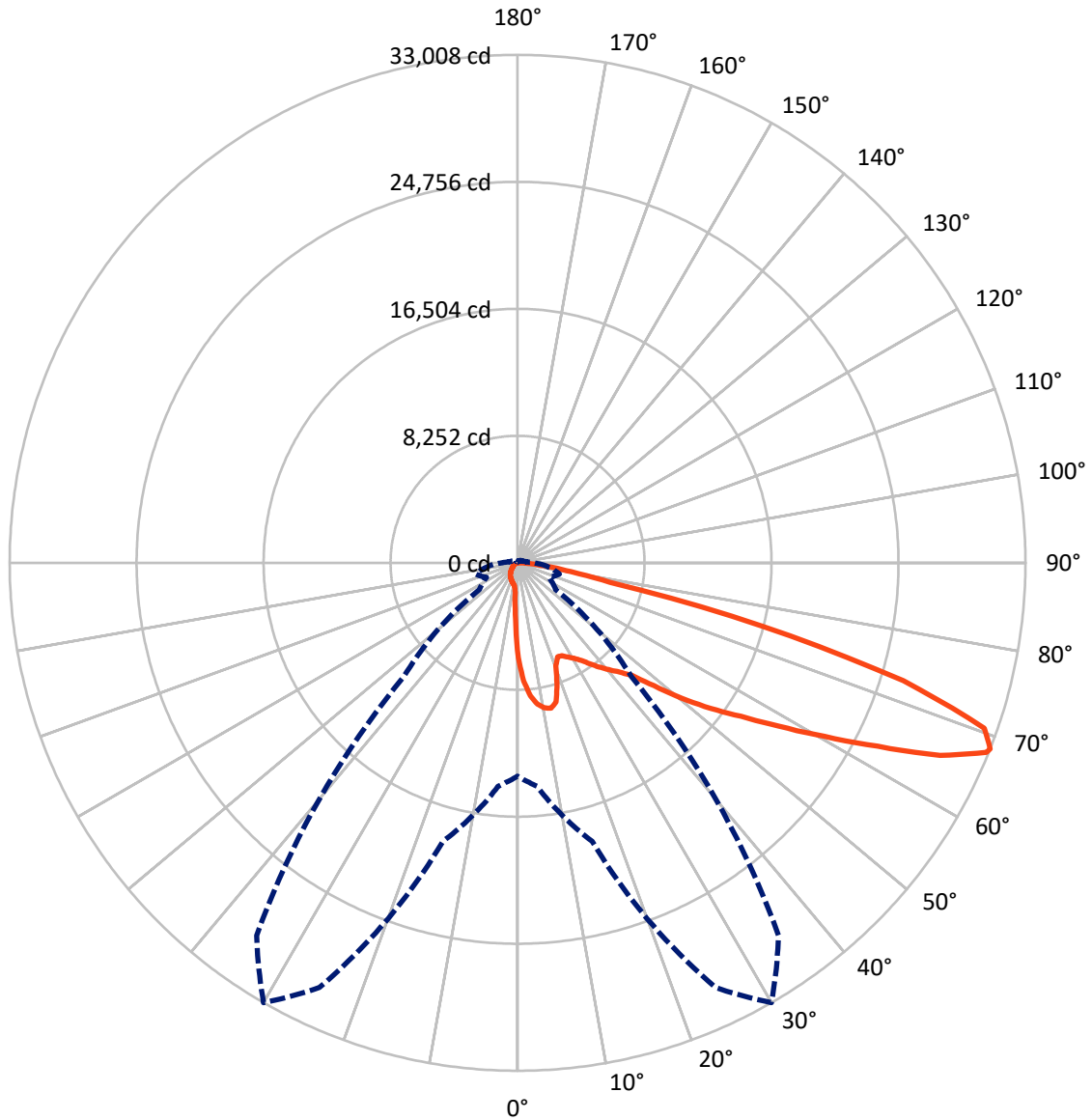
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 23.6 fc  
 Type IV - Short - N/A

REPORT NUMBER: P1438213  
CATALOG NUMBER: GALN-SB9A-750-U-T4LG-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 30-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

REPORT NUMBER: P1438213  
 CATALOG NUMBER: GALN-SB9A-750-U-T4LG-HSS

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2392.4   | 0.0    | 2392.4  |
|                    | % Fixture | 7.6      | 0.0    | 7.6     |
| <b>Street Side</b> | Lumens    | 28952.5  | 0.0    | 28952.5 |
|                    | % Fixture | 92.4     | 0.0    | 92.4    |
| <b>Total</b>       | Lumens    | 31344.9  | 0.0    | 31344.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 533.3   | 1.7       |
| 10°-20°   | 1522.6  | 4.9       |
| 20°-30°   | 2392.8  | 7.6       |
| 30°-40°   | 3752.9  | 12.0      |
| 40°-50°   | 5609.4  | 17.9      |
| 50°-60°   | 7462.4  | 23.8      |
| 60°-70°   | 7213.8  | 23.0      |
| 70°-80°   | 2593.1  | 8.3       |
| 80°-90°   | 264.6   | 0.8       |
| 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°    | 31344.9 | 100.0     |
| 0°-180°   | 31344.9 | 100.0     |

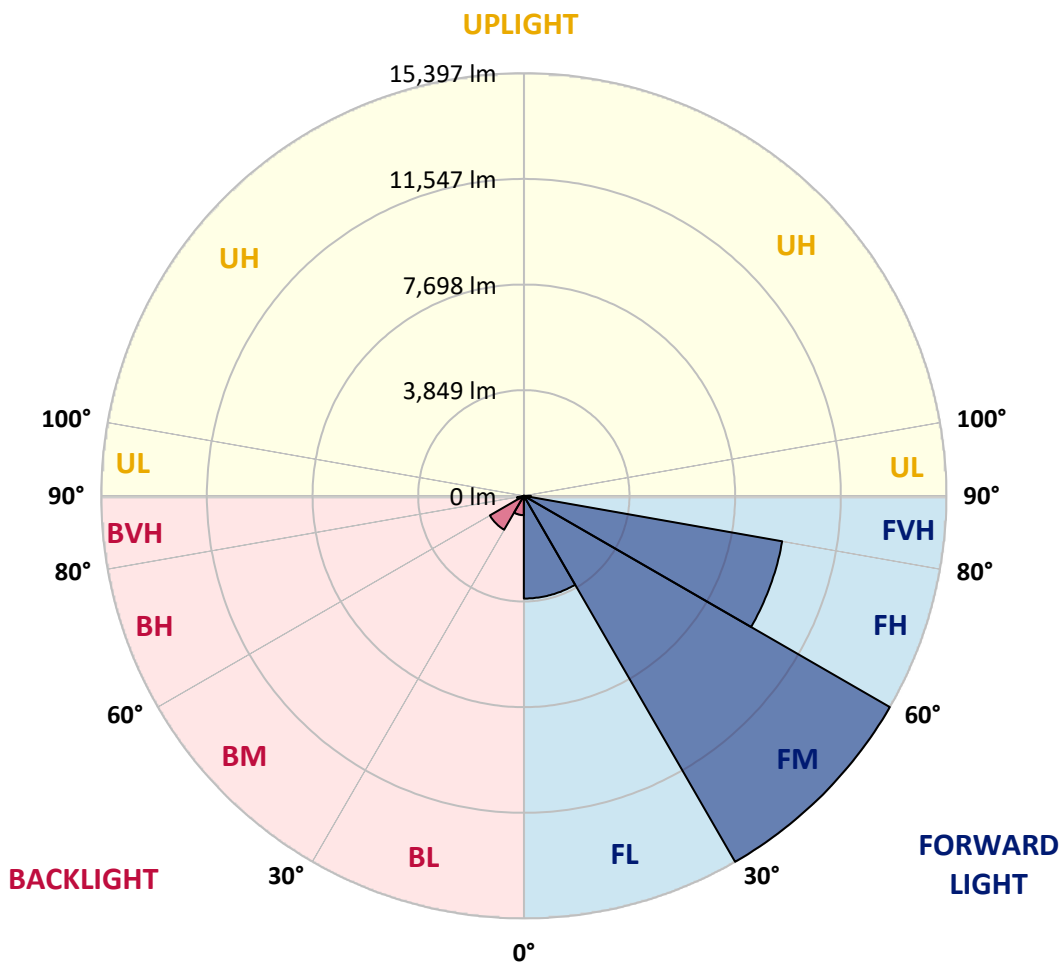


REPORT NUMBER: P1438213  
 CATALOG NUMBER: GALN-SB9A-750-U-T4LG-HSS

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|----------------|---------|-----------|-------------------------|------|----------|
|                |         |           | B                       | U    | G        |
| FL (0°-30°)    | 3742.6  | 11.9      |                         |      |          |
| FM (30°-60°)   | 15396.6 | 49.1      |                         |      |          |
| FH (60°-80°)   | 9558.1  | 30.5      |                         |      | G4/12000 |
| FVH (80°-90°)  | 255.2   | 0.8       |                         |      | G3/500   |
| BL (0°-30°)    | 706.2   | 2.3       | B2/1000                 |      |          |
| BM (30°-60°)   | 1428.1  | 4.6       | B2/2500                 |      |          |
| BH (60°-80°)   | 248.8   | 0.8       | B1/500                  |      | G1/500   |
| BVH (80°-90°)  | 9.4     | 0.0       |                         |      | G0/10    |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B2-U0-G4**  
 Type IV Short





REPORT NUMBER: P1438213

CATALOG NUMBER: GALN-SB9A-750-U-T4LG-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 30°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  | 6180.8  |
| 2.5°  | 7899.8  | 7899.8  | 7843.5  | 7768.3  | 7683.8  | 7655.6  | 7495.9  | 7270.5  | 7035.6  | 6763.2  | 6368.7  |
| 5°    | 8914.3  | 8904.9  | 8792.2  | 8792.2  | 8679.5  | 8576.2  | 8416.5  | 8087.7  | 7712.0  | 7223.5  | 6537.8  |
| 7.5°  | 9365.2  | 9384.0  | 9337.0  | 9337.0  | 9271.3  | 9196.1  | 9102.2  | 8782.8  | 8341.3  | 7683.8  | 6706.9  |
| 10°   | 9524.9  | 9534.3  | 9534.3  | 9600.0  | 9581.3  | 9571.9  | 9562.5  | 9384.0  | 8923.7  | 8153.5  | 6885.4  |
| 12.5° | 9139.8  | 9186.7  | 9318.2  | 9609.4  | 9703.4  | 9806.7  | 9947.6  | 9891.2  | 9571.9  | 8745.2  | 7157.8  |
| 15°   | 7899.8  | 7909.2  | 8275.6  | 8998.9  | 9384.0  | 9778.5  | 10323.3 | 10436.1 | 10229.4 | 9384.0  | 7439.6  |
| 17.5° | 6519.0  | 6547.2  | 6838.4  | 7646.2  | 8266.2  | 9177.3  | 10539.4 | 10999.7 | 10924.5 | 10013.4 | 7702.6  |
| 20°   | 5946.0  | 5983.6  | 6124.5  | 6631.7  | 7101.4  | 7946.8  | 10323.3 | 11535.1 | 11563.3 | 10642.7 | 7946.8  |
| 22.5° | 5814.5  | 5842.7  | 5955.4  | 6349.9  | 6641.1  | 7204.7  | 9590.6  | 11957.8 | 12286.6 | 11366.0 | 8238.0  |
| 25°   | 5776.9  | 5805.1  | 5974.2  | 6406.3  | 6678.7  | 7148.4  | 8923.7  | 12183.2 | 13141.3 | 12117.5 | 8519.8  |
| 27.5° | 5748.8  | 5786.3  | 6058.7  | 6612.9  | 6932.3  | 7383.2  | 8801.6  | 12230.2 | 13958.6 | 12915.9 | 8980.1  |
| 30°   | 5786.3  | 5842.7  | 6199.6  | 6829.0  | 7195.3  | 7702.6  | 9092.8  | 12277.2 | 14860.3 | 13827.1 | 9562.5  |
| 32.5° | 5936.6  | 5983.6  | 6415.7  | 7120.2  | 7542.9  | 8115.9  | 9590.6  | 12559.0 | 15715.1 | 14757.0 | 10116.7 |
| 35°   | 6105.7  | 6171.5  | 6688.1  | 7533.5  | 8040.7  | 8688.9  | 10267.0 | 13113.2 | 16532.4 | 15640.0 | 10689.7 |
| 37.5° | 6312.4  | 6387.5  | 7007.5  | 8003.2  | 8585.6  | 9318.2  | 10999.7 | 13883.4 | 17255.7 | 16363.3 | 11262.7 |
| 40°   | 6594.2  | 6678.7  | 7373.8  | 8501.0  | 9130.4  | 9863.1  | 11722.9 | 14644.3 | 17809.9 | 16795.4 | 11638.4 |
| 42.5° | 7702.6  | 7815.3  | 8106.5  | 8989.5  | 9694.0  | 10445.4 | 12436.8 | 15367.6 | 18016.5 | 16936.3 | 11713.6 |
| 45°   | 9769.1  | 9881.8  | 9806.7  | 9975.8  | 10445.4 | 11150.0 | 13216.5 | 16062.7 | 18044.7 | 16898.7 | 11676.0 |
| 47.5° | 11845.1 | 11976.6 | 11910.8 | 11816.9 | 11920.2 | 12258.4 | 14090.1 | 16504.2 | 17894.4 | 16879.9 | 11676.0 |
| 50°   | 13827.1 | 13751.9 | 13761.3 | 13733.1 | 13827.1 | 14005.5 | 14935.5 | 16588.7 | 17856.8 | 17058.4 | 11779.3 |
| 52.5° | 14888.5 | 14926.1 | 15160.9 | 15508.5 | 15715.1 | 15893.6 | 15903.0 | 16720.2 | 17584.4 | 16757.8 | 11657.2 |
| 55°   | 15931.2 | 16006.3 | 16551.1 | 17142.9 | 17603.2 | 17941.4 | 16870.5 | 16635.7 | 15959.4 | 15752.7 | 11018.4 |
| 57.5° | 17105.4 | 17208.7 | 17978.9 | 19200.1 | 20007.9 | 20186.4 | 17828.7 | 15057.6 | 13507.7 | 14315.5 | 9778.5  |
| 60°   | 18721.0 | 18843.1 | 19867.0 | 21698.7 | 22901.1 | 22534.7 | 17903.8 | 12549.6 | 10727.2 | 11882.6 | 8068.9  |
| 62.5° | 19989.1 | 20233.4 | 22083.9 | 24939.4 | 26263.9 | 25099.1 | 16504.2 | 9618.8  | 7495.9  | 8350.7  | 5889.7  |
| 65°   | 18636.5 | 19106.2 | 22121.4 | 28649.8 | 30181.0 | 28114.4 | 14306.1 | 6566.0  | 4227.0  | 5401.2  | 3766.7  |
| 67.5° | 15067.0 | 15724.5 | 19641.6 | 30453.4 | 32867.5 | 29701.9 | 11262.7 | 3484.9  | 2423.5  | 3137.4  | 1982.0  |
| 68°   | 13864.6 | 14578.5 | 18730.4 | 30453.4 | 33008.4 | 29561.0 | 10454.8 | 3015.3  | 2235.6  | 2818.0  | 1719.0  |
| 70°   | 9581.3  | 10088.5 | 14400.1 | 28743.8 | 32181.7 | 26949.6 | 6885.4  | 1728.4  | 1681.4  | 1935.0  | 1136.6  |
| 72.5° | 4696.7  | 5241.5  | 7702.6  | 22779.0 | 26216.9 | 20712.4 | 3137.4  | 1146.0  | 1277.5  | 1418.4  | 892.4   |
| 75°   | 1869.3  | 1982.0  | 3034.1  | 11234.5 | 16382.1 | 13216.5 | 1643.8  | 864.2   | 1099.0  | 1108.4  | 704.5   |
| 77.5° | 1070.8  | 1136.6  | 1681.4  | 4133.1  | 6143.3  | 5908.4  | 1061.5  | 620.0   | 873.6   | 798.4   | 460.3   |
| 80°   | 601.2   | 610.6   | 948.7   | 2179.3  | 3513.1  | 3146.8  | 723.3   | 450.9   | 666.9   | 563.6   | 310.0   |
| 82.5° | 300.6   | 338.2   | 601.2   | 1202.4  | 1953.8  | 2000.8  | 385.1   | 319.4   | 535.4   | 403.9   | 253.6   |
| 85°   | 216.0   | 234.8   | 432.1   | 666.9   | 901.8   | 1352.6  | 234.8   | 159.7   | 403.9   | 272.4   | 178.5   |
| 87.5° | 112.7   | 140.9   | 272.4   | 328.8   | 366.3   | 460.3   | 112.7   | 75.1    | 225.4   | 159.7   | 93.9    |
| 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: P1438213

CATALOG NUMBER: GALN-SB9A-750-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 | 6180.8 |
| 2.5°  | 6180.8 | 5964.8 | 5523.3 | 5006.7 | 4602.8 | 4189.5 | 3851.3 | 3531.9 | 3381.6 | 3362.8 | 3400.4 |
| 5°    | 6152.7 | 5683.0 | 4677.9 | 3691.6 | 2883.8 | 2320.2 | 2010.2 | 1850.5 | 1766.0 | 1728.4 | 1737.8 |
| 7.5°  | 6096.3 | 5382.4 | 3776.1 | 2498.6 | 1869.3 | 1625.1 | 1549.9 | 1521.7 | 1512.3 | 1512.3 | 1512.3 |
| 10°   | 6039.9 | 4978.5 | 2893.2 | 1831.7 | 1531.1 | 1465.4 | 1446.6 | 1446.6 | 1437.2 | 1437.2 | 1446.6 |
| 12.5° | 6011.8 | 4602.8 | 2245.0 | 1531.1 | 1427.8 | 1399.6 | 1380.8 | 1371.4 | 1371.4 | 1371.4 | 1380.8 |
| 15°   | 5946.0 | 4189.5 | 1812.9 | 1418.4 | 1362.0 | 1324.5 | 1315.1 | 1305.7 | 1305.7 | 1305.7 | 1305.7 |
| 17.5° | 5889.7 | 3785.5 | 1578.1 | 1343.3 | 1296.3 | 1258.7 | 1249.3 | 1239.9 | 1239.9 | 1249.3 | 1249.3 |
| 20°   | 5805.1 | 3400.4 | 1418.4 | 1268.1 | 1230.5 | 1193.0 | 1183.6 | 1174.2 | 1183.6 | 1183.6 | 1183.6 |
| 22.5° | 5701.8 | 3081.0 | 1324.5 | 1211.7 | 1164.8 | 1127.2 | 1127.2 | 1127.2 | 1127.2 | 1127.2 | 1136.6 |
| 25°   | 5636.0 | 2855.6 | 1258.7 | 1146.0 | 1099.0 | 1070.8 | 1061.5 | 1061.5 | 1080.2 | 1080.2 | 1089.6 |
| 27.5° | 5739.4 | 2799.2 | 1268.1 | 1127.2 | 1042.7 | 1014.5 | 1005.1 | 1005.1 | 1023.9 | 1033.3 | 1042.7 |
| 30°   | 6049.3 | 2902.6 | 1380.8 | 1183.6 | 1005.1 | 958.1  | 948.7  | 948.7  | 976.9  | 986.3  | 995.7  |
| 32.5° | 6406.3 | 3118.6 | 1549.9 | 1258.7 | 976.9  | 901.8  | 883.0  | 883.0  | 911.2  | 920.6  | 929.9  |
| 35°   | 6894.7 | 3456.8 | 1775.4 | 1324.5 | 995.7  | 845.4  | 807.8  | 807.8  | 826.6  | 845.4  | 854.8  |
| 37.5° | 7524.1 | 4011.0 | 2038.4 | 1371.4 | 995.7  | 779.7  | 732.7  | 723.3  | 742.1  | 742.1  | 751.5  |
| 40°   | 8181.6 | 4734.3 | 2310.8 | 1371.4 | 948.7  | 713.9  | 666.9  | 638.8  | 648.1  | 638.8  | 648.1  |
| 42.5° | 8548.0 | 5316.7 | 2545.6 | 1286.9 | 892.4  | 648.1  | 601.2  | 563.6  | 554.2  | 535.4  | 544.8  |
| 45°   | 8754.6 | 5579.7 | 2479.9 | 1193.0 | 836.0  | 601.2  | 544.8  | 497.8  | 479.1  | 450.9  | 450.9  |
| 47.5° | 8754.6 | 5607.9 | 2122.9 | 1117.8 | 779.7  | 563.6  | 488.5  | 441.5  | 413.3  | 385.1  | 394.5  |
| 50°   | 8651.3 | 5354.2 | 1681.4 | 1042.7 | 713.9  | 526.0  | 441.5  | 403.9  | 366.3  | 347.6  | 347.6  |
| 52.5° | 8219.2 | 4527.6 | 1286.9 | 948.7  | 638.8  | 479.1  | 394.5  | 356.9  | 319.4  | 310.0  | 310.0  |
| 55°   | 7477.1 | 3325.3 | 1042.7 | 854.8  | 573.0  | 441.5  | 356.9  | 328.8  | 291.2  | 272.4  | 272.4  |
| 57.5° | 6077.5 | 2273.2 | 864.2  | 770.3  | 507.2  | 394.5  | 319.4  | 291.2  | 244.2  | 225.4  | 225.4  |
| 60°   | 4508.8 | 1484.2 | 732.7  | 676.3  | 432.1  | 356.9  | 281.8  | 244.2  | 206.7  | 187.9  | 178.5  |
| 62.5° | 3043.5 | 1005.1 | 610.6  | 535.4  | 366.3  | 310.0  | 244.2  | 206.7  | 159.7  | 122.1  | 122.1  |
| 65°   | 1897.5 | 779.7  | 507.2  | 422.7  | 319.4  | 272.4  | 206.7  | 159.7  | 112.7  | 84.5   | 75.1   |
| 67.5° | 1089.6 | 629.4  | 413.3  | 328.8  | 272.4  | 216.0  | 159.7  | 131.5  | 93.9   | 65.8   | 56.4   |
| 68°   | 1005.1 | 601.2  | 385.1  | 310.0  | 253.6  | 206.7  | 150.3  | 122.1  | 84.5   | 56.4   | 56.4   |
| 70°   | 817.2  | 535.4  | 328.8  | 253.6  | 216.0  | 169.1  | 131.5  | 103.3  | 65.8   | 37.6   | 37.6   |
| 72.5° | 723.3  | 450.9  | 281.8  | 197.3  | 150.3  | 140.9  | 103.3  | 75.1   | 47.0   | 28.2   | 18.8   |
| 75°   | 591.8  | 356.9  | 225.4  | 150.3  | 103.3  | 103.3  | 75.1   | 47.0   | 18.8   | 0.0    | 0.0    |
| 77.5° | 385.1  | 263.0  | 178.5  | 93.9   | 56.4   | 65.8   | 47.0   | 18.8   | 0.0    | 0.0    | 0.0    |
| 80°   | 253.6  | 197.3  | 122.1  | 47.0   | 28.2   | 28.2   | 9.4    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 178.5  | 131.5  | 75.1   | 18.8   | 9.4    | 9.4    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 112.7  | 56.4   | 28.2   | 9.4    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 47.0   | 18.8   | 9.4    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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: SP1-2407-184-6

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-750-U-5WQ

Data in this report applies to families of products including GSS-SB1A-750-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-6  
 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-750-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 5000K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 4896  
 CIE u': 0.2101  
 CIE v': 0.4901  
 Duv: 0.0035  
 CIE x: 0.3489  
 CIE y: 0.3618  
 CIE z: 0.2893  
 Peak Wavelength (nm): 443  
 Dominant Wavelength (nm): 570  
 Purity: 13.25435  
 Rf: 70.7  
 Rg: 96.8

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 70.2 |      |       |
| R1:       | 68.1 | R9:  | -35.1 |
| R2:       | 73.9 | R10: | 39.3  |
| R3:       | 79.4 | R11: | 71.1  |
| R4:       | 72.1 | R12: | 43.8  |
| R5:       | 69.2 | R13: | 68.1  |
| R6:       | 65.7 | R14: | 88.4  |
| R7:       | 78.1 | R15: | 59.7  |
| R8:       | 55.3 |      |       |



**Test Conditions**

Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-6

| 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: SP1-2407-184-6

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-6

**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    | 118                      | NR            | 620    | 401                      | NR            | 750    | 12                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 168                      | NR            | 625    | 365                      | NR            | 755    | 10                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 230                      | NR            | 630    | 331                      | NR            | 760    | 9                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 299                      | NR            | 635    | 298                      | NR            | 765    | 8                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 362                      | NR            | 640    | 266                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 418                      | NR            | 645    | 236                      | NR            | 775    | 6                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 461                      | NR            | 650    | 209                      | NR            | 780    | 5                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 491                      | NR            | 655    | 184                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 514                      | NR            | 660    | 160                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 530                      | NR            | 665    | 140                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 27                       | NR            | 540    | 539                      | NR            | 670    | 122                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 549                      | NR            | 675    | 106                      | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 115                      | NR            | 550    | 557                      | NR            | 680    | 92                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 226                      | NR            | 555    | 565                      | NR            | 685    | 79                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 395                      | NR            | 560    | 572                      | NR            | 690    | 68                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 648                      | NR            | 565    | 580                      | NR            | 695    | 59                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 937                      | NR            | 570    | 586                      | NR            | 700    | 51                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 953                      | NR            | 575    | 588                      | NR            | 705    | 44                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 591                      | NR            | 580    | 588                      | NR            | 710    | 38                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 334                      | NR            | 585    | 580                      | NR            | 715    | 32                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 221                      | NR            | 590    | 568                      | NR            | 720    | 28                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 140                      | NR            | 595    | 550                      | NR            | 725    | 24                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 93                       | NR            | 600    | 527                      | NR            | 730    | 21                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 79                       | NR            | 605    | 499                      | NR            | 735    | 18                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 76                       | NR            | 610    | 469                      | NR            | 740    | 15                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 87                       | NR            | 615    | 435                      | NR            | 745    | 13                       | NR            | 875    | 0                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-6

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.7**

| 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    | 118                      | NR            | 620    | 401                      | NR            | 750    | 12                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 168                      | NR            | 625    | 365                      | NR            | 755    | 10                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 230                      | NR            | 630    | 331                      | NR            | 760    | 9                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 299                      | NR            | 635    | 298                      | NR            | 765    | 8                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 362                      | NR            | 640    | 266                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 418                      | NR            | 645    | 236                      | NR            | 775    | 6                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 461                      | NR            | 650    | 209                      | NR            | 780    | 5                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 491                      | NR            | 655    | 184                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 514                      | NR            | 660    | 160                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 530                      | NR            | 665    | 140                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 27                       | NR            | 540    | 539                      | NR            | 670    | 122                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 549                      | NR            | 675    | 106                      | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 115                      | NR            | 550    | 557                      | NR            | 680    | 92                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 226                      | NR            | 555    | 565                      | NR            | 685    | 79                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 395                      | NR            | 560    | 572                      | NR            | 690    | 68                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 648                      | NR            | 565    | 580                      | NR            | 695    | 59                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 937                      | NR            | 570    | 586                      | NR            | 700    | 51                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 953                      | NR            | 575    | 588                      | NR            | 705    | 44                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 591                      | NR            | 580    | 588                      | NR            | 710    | 38                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 334                      | NR            | 585    | 580                      | NR            | 715    | 32                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 221                      | NR            | 590    | 568                      | NR            | 720    | 28                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 140                      | NR            | 595    | 550                      | NR            | 725    | 24                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 93                       | NR            | 600    | 527                      | NR            | 730    | 21                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 79                       | NR            | 605    | 499                      | NR            | 735    | 18                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 76                       | NR            | 610    | 469                      | NR            | 740    | 15                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 87                       | NR            | 615    | 435                      | NR            | 745    | 13                       | NR            | 875    | 0                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-184-6

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 3.37**

| 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    | 118                      | NR            | 620    | 401                      | NR            | 750    | 12                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 168                      | NR            | 625    | 365                      | NR            | 755    | 10                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 230                      | NR            | 630    | 331                      | NR            | 760    | 9                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 299                      | NR            | 635    | 298                      | NR            | 765    | 8                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 362                      | NR            | 640    | 266                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 418                      | NR            | 645    | 236                      | NR            | 775    | 6                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 461                      | NR            | 650    | 209                      | NR            | 780    | 5                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 491                      | NR            | 655    | 184                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 514                      | NR            | 660    | 160                      | NR            | 790    | 4                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 530                      | NR            | 665    | 140                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 27                       | NR            | 540    | 539                      | NR            | 670    | 122                      | NR            | 800    | 3                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 549                      | NR            | 675    | 106                      | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 115                      | NR            | 550    | 557                      | NR            | 680    | 92                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 226                      | NR            | 555    | 565                      | NR            | 685    | 79                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 395                      | NR            | 560    | 572                      | NR            | 690    | 68                       | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 648                      | NR            | 565    | 580                      | NR            | 695    | 59                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 937                      | NR            | 570    | 586                      | NR            | 700    | 51                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 953                      | NR            | 575    | 588                      | NR            | 705    | 44                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 591                      | NR            | 580    | 588                      | NR            | 710    | 38                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 334                      | NR            | 585    | 580                      | NR            | 715    | 32                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 221                      | NR            | 590    | 568                      | NR            | 720    | 28                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 140                      | NR            | 595    | 550                      | NR            | 725    | 24                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 93                       | NR            | 600    | 527                      | NR            | 730    | 21                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 79                       | NR            | 605    | 499                      | NR            | 735    | 18                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 76                       | NR            | 610    | 469                      | NR            | 740    | 15                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 87                       | NR            | 615    | 435                      | NR            | 745    | 13                       | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 70.7$   
 $R_g = 96.8$   
 $CIE R_a = 70.2$   
 $R_g = -35.1$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 53 | CES51 = 87 | CES76 = 42 |
| CES02 = 59 | CES27 = 78 | CES52 = 88 | CES77 = 64 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 45 |
| CES04 = 69 | CES29 = 48 | CES54 = 80 | CES79 = 74 |
| CES05 = 46 | CES30 = 56 | CES55 = 79 | CES80 = 71 |
| CES06 = 50 | CES31 = 54 | CES56 = 68 | CES81 = 72 |
| CES07 = 39 | CES32 = 50 | CES57 = 65 | CES82 = 88 |
| CES08 = 38 | CES33 = 60 | CES58 = 67 | CES83 = 82 |
| CES09 = 29 | CES34 = 62 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 91 | CES85 = 84 |
| CES11 = 56 | CES36 = 90 | CES61 = 87 | CES86 = 74 |
| CES12 = 61 | CES37 = 72 | CES62 = 79 | CES87 = 75 |
| CES13 = 41 | CES38 = 66 | CES63 = 72 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 70 | CES89 = 74 |
| CES15 = 70 | CES40 = 83 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 83 | CES66 = 64 | CES91 = 92 |
| CES17 = 49 | CES42 = 70 | CES67 = 62 | CES92 = 67 |
| CES18 = 55 | CES43 = 68 | CES68 = 69 | CES93 = 81 |
| CES19 = 71 | CES44 = 98 | CES69 = 80 | CES94 = 56 |
| CES20 = 64 | CES45 = 78 | CES70 = 56 | CES95 = 71 |
| CES21 = 85 | CES46 = 77 | CES71 = 53 | CES96 = 77 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 46 | CES98 = 71 |
| CES24 = 90 | CES49 = 76 | CES74 = 94 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)