

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

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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: P1457285

Luminaire Tested: GLAN-SB5C-840-U-T4LG

Issue Date: 05/20/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1457285  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 5/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: GLAN-SB5C-840-U-T4LG  
Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 615mA 5xLight Square  
PACKAGE 80CRI 4000K FIXTURE w/ TYPE IV LOW GLARE  
Light Source: (130) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

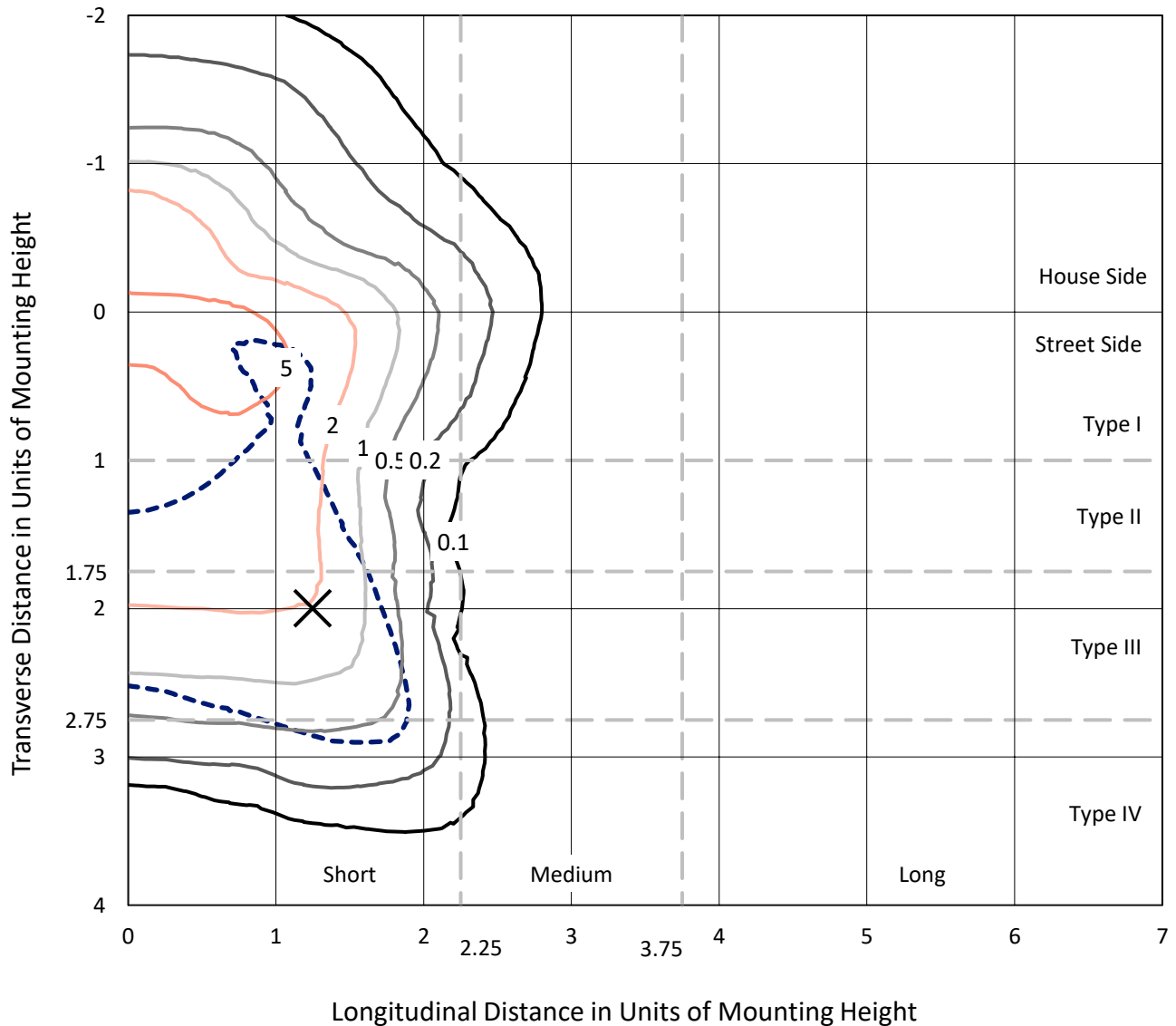
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 35409.2 lumens  
Efficiency: N/A  
Efficacy: 141.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G4  
  
Input Watts (W): 249.5  
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: P1457285  
 CATALOG NUMBER: GLAN-SB5C-840-U-T4LG

### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

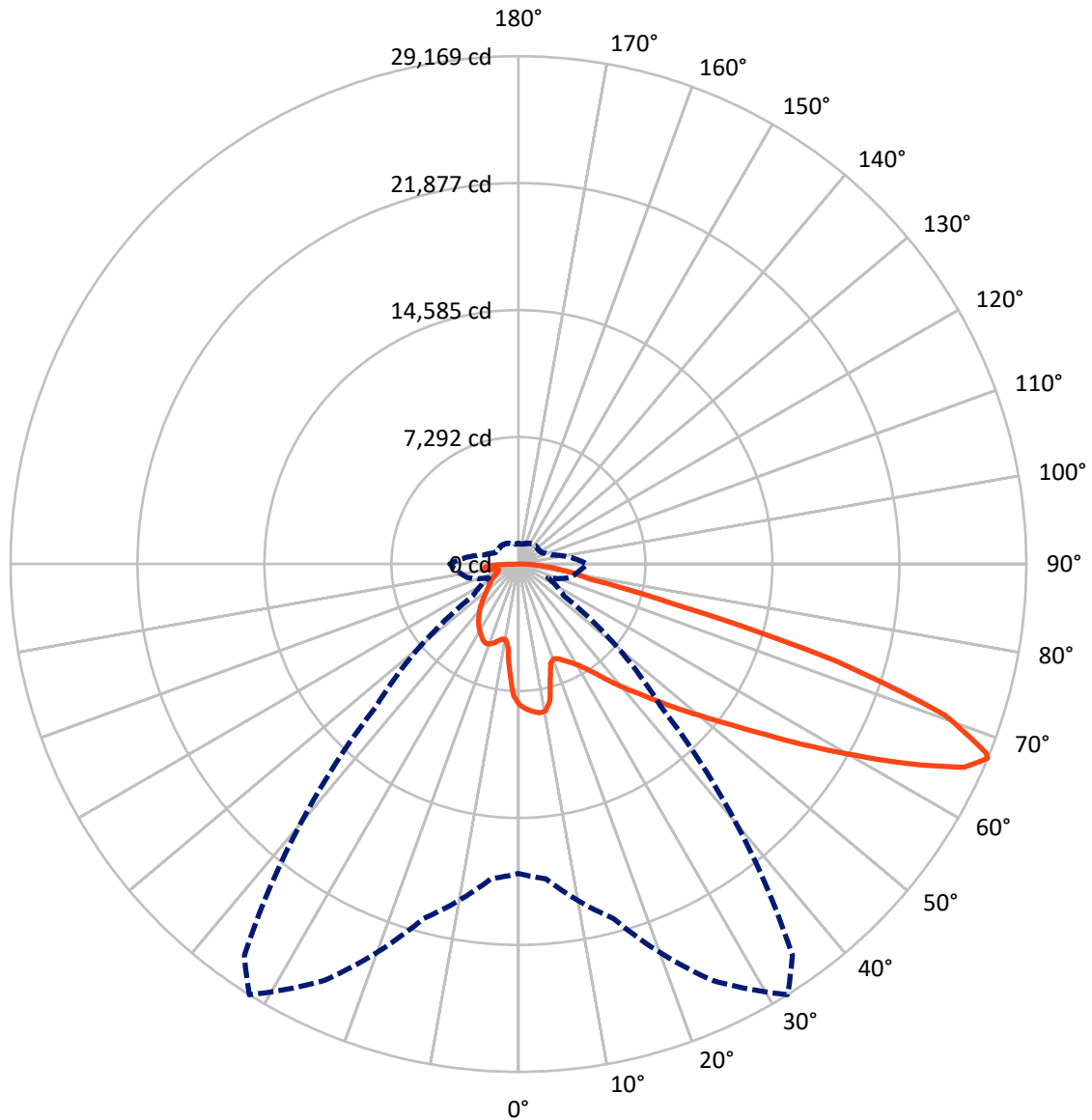


Based on 30 foot mounting height. Maximum calculated value = 9.7 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral      - - - Horizontal Cone Through 67-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 8383.0   | 0.0    | 8383.0  |
|                    | % Fixture | 23.7     | 0.0    | 23.7    |
| <b>Street Side</b> | Lumens    | 27026.2  | 0.0    | 27026.2 |
|                    | % Fixture | 76.3     | 0.0    | 76.3    |
| <b>Total</b>       | Lumens    | 35409.2  | 0.0    | 35409.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 706.9   | 2.0       |
| 10°-20°   | 1876.9  | 5.3       |
| 20°-30°   | 3065.0  | 8.7       |
| 30°-40°   | 4517.5  | 12.8      |
| 40°-50°   | 6229.9  | 17.6      |
| 50°-60°   | 7870.3  | 22.2      |
| 60°-70°   | 7617.0  | 21.5      |
| 70°-80°   | 2718.5  | 7.7       |
| 80°-90°   | 807.3   | 2.3       |
| 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°    | 35409.2 | 100.0     |
| 0°-180°   | 35409.2 | 100.0     |



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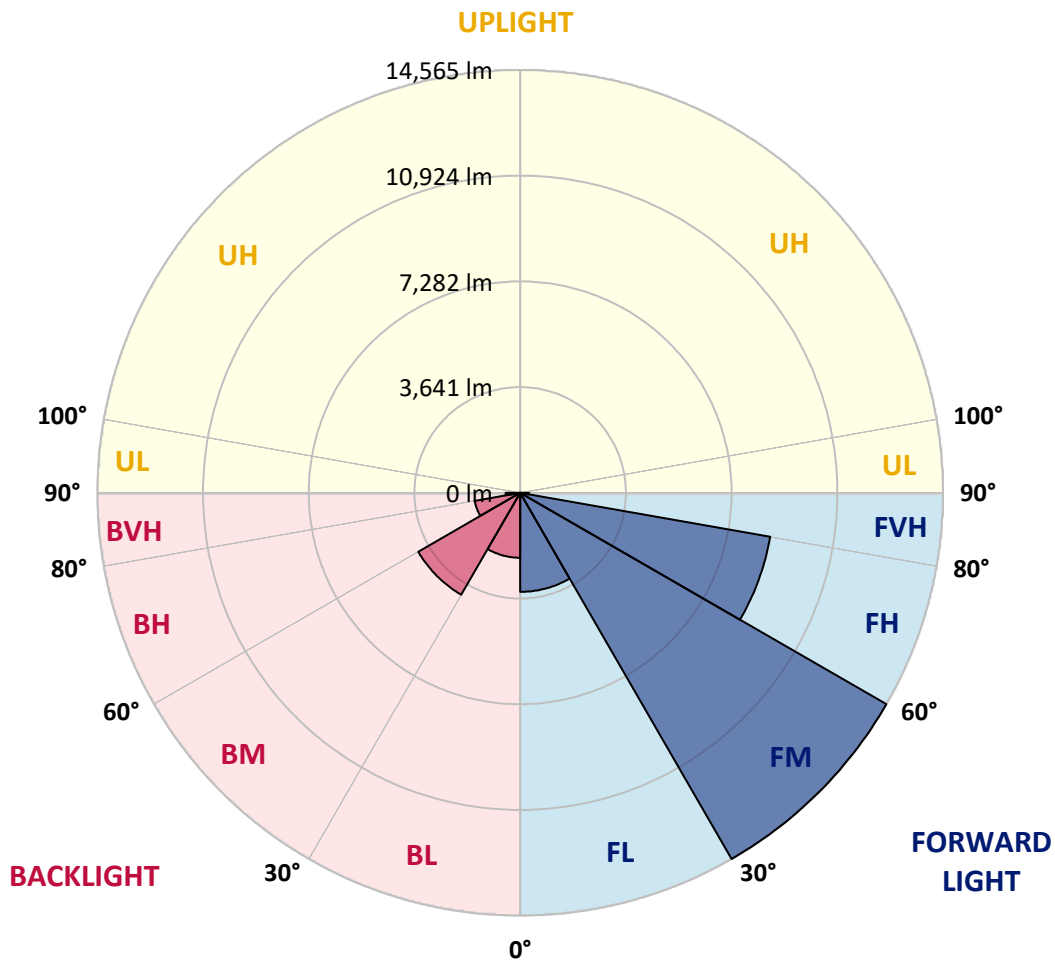
CATALOG NUMBER: GLAN-SB5C-840-U-T4LG

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

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|----------------|---------|-----------|-------------------------|------|----------|
|                |         |           | B                       | U    | G        |
| FL (0°-30°)    | 3411.8  | 9.6       |                         |      |          |
| FM (30°-60°)   | 14564.9 | 41.1      |                         |      |          |
| FH (60°-80°)   | 8745.3  | 24.7      |                         |      | G4/12000 |
| FVH (80°-90°)  | 304.2   | 0.9       |                         |      | G3/500   |
| BL (0°-30°)    | 2237.0  | 6.3       | B3/2500                 |      |          |
| BM (30°-60°)   | 4052.8  | 11.4      | B3/5000                 |      |          |
| BH (60°-80°)   | 1590.1  | 4.5       | B3/2500                 |      | G3/2500  |
| BVH (80°-90°)  | 503.1   | 1.4       |                         |      | G4/750   |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type IV Short





REPORT NUMBER: P1457285

CATALOG NUMBER: GLAN-SB5C-840-U-T4LG

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 32°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  | 8090.3  |
| 2.5°  | 8396.9  | 8373.3  | 8349.8  | 8365.5  | 8334.0  | 8326.2  | 8286.9  | 8271.1  | 8224.0  | 8216.1  | 8129.6  |
| 5°    | 8569.9  | 8522.7  | 8514.9  | 8530.6  | 8499.1  | 8499.1  | 8467.7  | 8444.1  | 8373.3  | 8334.0  | 8208.2  |
| 7.5°  | 8569.9  | 8562.0  | 8577.8  | 8632.8  | 8640.7  | 8640.7  | 8640.7  | 8648.5  | 8577.8  | 8522.7  | 8326.2  |
| 10°   | 8082.4  | 8003.8  | 8176.8  | 8452.0  | 8585.6  | 8664.2  | 8805.8  | 8892.3  | 8837.2  | 8797.9  | 8530.6  |
| 12.5° | 6627.9  | 6635.8  | 6911.0  | 7500.6  | 8035.3  | 8263.3  | 8852.9  | 9167.4  | 9191.0  | 9128.1  | 8790.0  |
| 15°   | 5621.5  | 5660.9  | 5802.4  | 6226.9  | 6840.2  | 7178.3  | 8577.8  | 9411.2  | 9599.9  | 9537.0  | 9104.5  |
| 17.5° | 5314.9  | 5338.5  | 5401.4  | 5645.1  | 5991.1  | 6266.2  | 7830.8  | 9568.4  | 10095.2 | 10016.6 | 9458.3  |
| 20°   | 5267.7  | 5283.5  | 5362.1  | 5566.5  | 5802.4  | 5959.6  | 7068.2  | 9442.6  | 10559.1 | 10527.6 | 9780.7  |
| 22.5° | 5275.6  | 5291.3  | 5393.5  | 5676.6  | 5920.3  | 6054.0  | 6824.5  | 9151.7  | 11046.5 | 11078.0 | 10110.9 |
| 25°   | 5291.3  | 5299.2  | 5456.4  | 5833.8  | 6140.5  | 6305.6  | 6981.7  | 8892.3  | 11455.4 | 11722.7 | 10472.6 |
| 27.5° | 5377.8  | 5401.4  | 5613.7  | 6038.2  | 6399.9  | 6588.6  | 7351.2  | 8978.7  | 11903.5 | 12453.9 | 10905.0 |
| 30°   | 5613.7  | 5629.4  | 5888.9  | 6329.1  | 6722.3  | 6918.8  | 7791.5  | 9324.7  | 12453.9 | 13208.7 | 11329.6 |
| 32.5° | 5983.2  | 5998.9  | 6297.7  | 6753.7  | 7178.3  | 7414.1  | 8365.5  | 9985.1  | 13067.1 | 14002.7 | 11754.1 |
| 35°   | 6494.3  | 6502.1  | 6840.2  | 7327.7  | 7775.8  | 8043.1  | 9033.8  | 10732.0 | 13704.0 | 14678.9 | 12068.6 |
| 37.5° | 7099.7  | 7154.7  | 7500.6  | 8011.7  | 8538.5  | 8782.2  | 9820.0  | 11604.7 | 14270.1 | 15252.9 | 12249.5 |
| 40°   | 7933.1  | 7948.8  | 8286.9  | 8782.2  | 9340.4  | 9576.3  | 10606.2 | 12430.3 | 14891.2 | 15590.9 | 12414.6 |
| 42.5° | 8790.0  | 8923.7  | 9206.7  | 9757.1  | 10173.8 | 10362.5 | 11502.5 | 13185.1 | 15386.5 | 15606.7 | 12343.8 |
| 45°   | 9937.9  | 10040.2 | 10323.2 | 10810.7 | 11227.4 | 11447.5 | 12469.6 | 13877.0 | 15638.1 | 15473.0 | 12186.6 |
| 47.5° | 11250.9 | 11313.8 | 11541.8 | 11982.1 | 12446.0 | 12603.3 | 13476.0 | 14270.1 | 15732.5 | 15378.6 | 12115.8 |
| 50°   | 12799.8 | 12799.8 | 12964.9 | 13342.3 | 13766.9 | 13987.0 | 14403.7 | 14505.9 | 16007.6 | 15213.5 | 12296.6 |
| 52.5° | 14105.0 | 14167.9 | 14388.0 | 14922.6 | 15347.2 | 15598.8 | 15127.1 | 14867.6 | 15449.4 | 14293.7 | 12351.7 |
| 55°   | 15355.1 | 15425.8 | 15921.1 | 16589.4 | 17312.8 | 17588.0 | 16031.2 | 14686.8 | 13570.3 | 12949.2 | 11974.3 |
| 57.5° | 16550.1 | 16699.5 | 17320.6 | 18625.8 | 19718.6 | 19695.0 | 17179.1 | 13067.1 | 11078.0 | 11463.2 | 11148.7 |
| 60°   | 18216.9 | 18374.2 | 19364.8 | 21008.1 | 22344.6 | 21786.4 | 17194.8 | 10873.6 | 8632.8  | 9151.7  | 9599.9  |
| 62.5° | 19608.6 | 19875.9 | 21330.4 | 24066.5 | 25293.0 | 24420.3 | 15771.8 | 8326.2  | 5731.6  | 6384.2  | 7422.0  |
| 65°   | 19482.8 | 19836.6 | 22093.0 | 26315.1 | 28147.0 | 27337.2 | 13688.3 | 5267.7  | 2956.2  | 4363.6  | 5197.0  |
| 67°   | 17768.8 | 18154.0 | 21078.8 | 26393.7 | 29169.1 | 27439.4 | 11557.6 | 3184.2  | 1879.1  | 3027.0  | 3608.8  |
| 67.5° | 16786.0 | 17352.1 | 20575.6 | 26244.3 | 28980.4 | 27007.0 | 10598.4 | 2665.3  | 1769.0  | 2814.7  | 3286.4  |
| 70°   | 10323.2 | 11235.2 | 15441.5 | 23201.6 | 25977.0 | 22604.1 | 5888.9  | 1509.6  | 1438.8  | 1887.0  | 2272.2  |
| 72.5° | 3105.6  | 3380.8  | 5959.6  | 14883.3 | 19066.1 | 16754.6 | 2649.6  | 1163.6  | 1289.4  | 1517.4  | 1753.3  |
| 75°   | 1509.6  | 1611.8  | 2460.9  | 6085.4  | 9285.4  | 9238.2  | 1478.1  | 998.5   | 1195.1  | 1273.7  | 1383.8  |
| 77.5° | 967.1   | 1030.0  | 1533.1  | 3404.4  | 4253.5  | 3789.6  | 1069.3  | 872.7   | 1061.4  | 1045.7  | 1030.0  |
| 80°   | 605.4   | 636.8   | 982.8   | 1973.4  | 3137.1  | 2618.1  | 786.2   | 715.5   | 912.0   | 809.8   | 731.2   |
| 82.5° | 393.1   | 432.4   | 629.0   | 1202.9  | 2240.8  | 1949.8  | 518.9   | 511.0   | 754.8   | 644.7   | 566.1   |
| 85°   | 259.5   | 290.9   | 401.0   | 707.6   | 1328.7  | 1391.6  | 338.1   | 353.8   | 581.8   | 487.5   | 432.4   |
| 87.5° | 94.3    | 117.9   | 204.4   | 314.5   | 621.1   | 770.5   | 141.5   | 133.7   | 283.0   | 228.0   | 180.8   |
| 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: P1457285

CATALOG NUMBER: GLAN-SB5C-840-U-T4LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 8090.3  | 8090.3 | 8090.3 | 8090.3 | 8090.3 | 8090.3 | 8090.3 | 8090.3 | 8090.3 | 8090.3 | 8090.3 |
| 2.5°  | 8113.9  | 8090.3 | 7980.2 | 7885.9 | 7815.1 | 7720.8 | 7618.6 | 7500.6 | 7422.0 | 7437.7 | 7414.1 |
| 5°    | 8153.2  | 8090.3 | 7878.0 | 7555.7 | 7241.2 | 6848.1 | 6344.9 | 6046.1 | 5818.1 | 5700.2 | 5731.6 |
| 7.5°  | 8239.7  | 8129.6 | 7681.5 | 7028.9 | 6211.2 | 5409.3 | 4913.9 | 4630.9 | 4497.2 | 4442.2 | 4434.3 |
| 10°   | 8389.1  | 8200.4 | 7429.9 | 6211.2 | 5141.9 | 4599.4 | 4418.6 | 4340.0 | 4324.3 | 4324.3 | 4316.4 |
| 12.5° | 8569.9  | 8271.1 | 7005.3 | 5417.1 | 4630.9 | 4434.3 | 4402.9 | 4410.7 | 4434.3 | 4457.9 | 4418.6 |
| 15°   | 8790.0  | 8302.6 | 6478.5 | 4937.5 | 4528.7 | 4481.5 | 4528.7 | 4583.7 | 4623.0 | 4654.5 | 4615.2 |
| 17.5° | 9010.2  | 8271.1 | 5983.2 | 4709.5 | 4544.4 | 4607.3 | 4701.7 | 4788.1 | 4811.7 | 4858.9 | 4827.4 |
| 20°   | 9167.4  | 8161.1 | 5558.6 | 4623.0 | 4583.7 | 4725.2 | 4843.2 | 4937.5 | 4984.7 | 5016.1 | 4984.7 |
| 22.5° | 9285.4  | 8019.5 | 5252.0 | 4536.5 | 4583.7 | 4756.7 | 4898.2 | 5008.3 | 5063.3 | 5094.8 | 5055.5 |
| 25°   | 9387.6  | 7823.0 | 5016.1 | 4410.7 | 4489.4 | 4654.5 | 4811.7 | 4921.8 | 5000.4 | 5047.6 | 5024.0 |
| 27.5° | 9513.4  | 7665.7 | 4796.0 | 4222.1 | 4292.8 | 4450.1 | 4615.2 | 4748.8 | 4898.2 | 4976.8 | 4961.1 |
| 30°   | 9654.9  | 7587.1 | 4583.7 | 4017.6 | 4064.8 | 4222.1 | 4418.6 | 4599.4 | 4803.9 | 4906.1 | 4906.1 |
| 32.5° | 9820.0  | 7532.1 | 4387.2 | 3821.1 | 3860.4 | 4033.4 | 4222.1 | 4387.2 | 4607.3 | 4772.4 | 4764.6 |
| 35°   | 9890.8  | 7469.2 | 4229.9 | 3640.2 | 3718.9 | 3860.4 | 4009.8 | 4119.8 | 4347.8 | 4544.4 | 4560.1 |
| 37.5° | 9961.5  | 7445.6 | 4151.3 | 3498.7 | 3561.6 | 3671.7 | 3750.3 | 3805.4 | 4017.6 | 4222.1 | 4229.9 |
| 40°   | 10048.0 | 7555.7 | 4206.3 | 3404.4 | 3349.3 | 3459.4 | 3498.7 | 3530.2 | 3640.2 | 3773.9 | 3773.9 |
| 42.5° | 9993.0  | 7634.3 | 4332.1 | 3317.9 | 3089.9 | 3215.7 | 3231.4 | 3223.5 | 3231.4 | 3239.3 | 3231.4 |
| 45°   | 9851.5  | 7555.7 | 4332.1 | 3184.2 | 2814.7 | 2948.4 | 2940.5 | 2901.2 | 2838.3 | 2673.2 | 2649.6 |
| 47.5° | 9820.0  | 7508.5 | 4167.0 | 2964.1 | 2539.5 | 2649.6 | 2665.3 | 2586.7 | 2405.9 | 2232.9 | 2177.9 |
| 50°   | 9953.7  | 7595.0 | 3907.6 | 2696.8 | 2303.7 | 2398.0 | 2437.3 | 2303.7 | 2099.2 | 1918.4 | 1887.0 |
| 52.5° | 10150.2 | 7705.0 | 3530.2 | 2405.9 | 2107.1 | 2201.4 | 2248.6 | 2099.2 | 1887.0 | 1745.4 | 1729.7 |
| 55°   | 10126.6 | 7705.0 | 3105.6 | 2138.5 | 1957.7 | 2028.5 | 2107.1 | 1949.8 | 1784.7 | 1706.1 | 1698.3 |
| 57.5° | 9615.6  | 7414.1 | 2791.1 | 1949.8 | 1816.2 | 1879.1 | 1981.3 | 1831.9 | 1674.7 | 1690.4 | 1714.0 |
| 60°   | 8617.1  | 6659.4 | 2555.2 | 1824.1 | 1690.4 | 1753.3 | 1863.4 | 1690.4 | 1486.0 | 1430.9 | 1430.9 |
| 62.5° | 7099.7  | 5487.9 | 2366.6 | 1698.3 | 1572.5 | 1651.1 | 1706.1 | 1478.1 | 1344.5 | 1281.6 | 1281.6 |
| 65°   | 5322.8  | 4245.6 | 2170.0 | 1596.0 | 1470.2 | 1556.7 | 1493.8 | 1383.8 | 1250.1 | 1202.9 | 1210.8 |
| 67°   | 3946.9  | 3294.3 | 2004.9 | 1509.6 | 1407.4 | 1446.7 | 1399.5 | 1320.9 | 1187.2 | 1147.9 | 1187.2 |
| 67.5° | 3545.9  | 3129.2 | 1965.6 | 1486.0 | 1391.6 | 1423.1 | 1375.9 | 1313.0 | 1171.5 | 1132.2 | 1171.5 |
| 70°   | 2437.3  | 2405.9 | 1753.3 | 1375.9 | 1305.1 | 1273.7 | 1297.3 | 1218.7 | 1100.7 | 1085.0 | 1124.3 |
| 72.5° | 1855.5  | 1918.4 | 1572.5 | 1281.6 | 1210.8 | 1171.5 | 1226.5 | 1147.9 | 1030.0 | 1053.5 | 1092.9 |
| 75°   | 1454.5  | 1548.9 | 1407.4 | 1147.9 | 1100.7 | 1108.6 | 1218.7 | 1187.2 | 1092.9 | 1116.4 | 1124.3 |
| 77.5° | 1077.1  | 1250.1 | 1202.9 | 998.5  | 959.2  | 1069.3 | 1375.9 | 1470.2 | 1305.1 | 1265.8 | 1210.8 |
| 80°   | 786.2   | 896.3  | 1014.2 | 825.5  | 802.0  | 1030.0 | 1698.3 | 1879.1 | 1611.8 | 1454.5 | 1415.2 |
| 82.5° | 581.8   | 629.0  | 833.4  | 660.4  | 581.8  | 919.9  | 1887.0 | 2209.3 | 1918.4 | 1619.6 | 1572.5 |
| 85°   | 416.7   | 487.5  | 660.4  | 487.5  | 385.3  | 754.8  | 1847.6 | 2162.1 | 1902.7 | 1533.1 | 1493.8 |
| 87.5° | 149.4   | 212.3  | 283.0  | 220.1  | 196.6  | 518.9  | 1525.3 | 1556.7 | 1187.2 | 542.5  | 550.4  |
| 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: SP1-2407-184-11

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-840-U-5WQ

Data in this report applies to families of products including GSS-SB1A-840-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-11  
 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-840-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 4000K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 3897  
 CIE u': 0.2249  
 CIE v': 0.5084  
 Duv: 0.0039  
 CIE x: 0.3882  
 CIE y: 0.3900  
 CIE z: 0.2218  
 Peak Wavelength (nm): 445  
 Dominant Wavelength (nm): 577  
 Purity: 33.54925  
 Rf: 81.8  
 Rg: 98.6

|           |      |      |      |
|-----------|------|------|------|
| CRI (Ra): | 80.2 |      |      |
| R1:       | 78.9 | R9:  | 6.7  |
| R2:       | 83.5 | R10: | 61.9 |
| R3:       | 88.3 | R11: | 81.9 |
| R4:       | 82.1 | R12: | 58.9 |
| R5:       | 78.8 | R13: | 79.2 |
| R6:       | 78.4 | R14: | 93.2 |
| R7:       | 85.8 | R15: | 71.9 |
| R8:       | 65.8 |      |      |



**Test Conditions**

Stabilization Time: 24M  
 Operation Time: 1H 24M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-11

| 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 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-11

**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    | 242                      | NR            | 620    | 792                      | NR            | 750    | 29                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 320                      | NR            | 625    | 748                      | NR            | 755    | 25                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 401                      | NR            | 630    | 703                      | NR            | 760    | 22                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 479                      | NR            | 635    | 651                      | NR            | 765    | 19                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 546                      | NR            | 640    | 599                      | NR            | 770    | 16                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 602                      | NR            | 645    | 545                      | NR            | 775    | 14                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 645                      | NR            | 650    | 493                      | NR            | 780    | 12                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 674                      | NR            | 655    | 443                      | NR            | 785    | 10                       | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 699                      | NR            | 660    | 394                      | NR            | 790    | 9                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 718                      | NR            | 665    | 349                      | NR            | 795    | 8                        | NR            | 925    | 0                        | NR            |
| 410    | 22                       | NR            | 540    | 732                      | NR            | 670    | 307                      | NR            | 800    | 7                        | NR            | 930    | 0                        | NR            |
| 415    | 43                       | NR            | 545    | 749                      | NR            | 675    | 269                      | NR            | 805    | 6                        | NR            | 935    | 0                        | NR            |
| 420    | 86                       | NR            | 550    | 762                      | NR            | 680    | 235                      | NR            | 810    | 5                        | NR            | 940    | 0                        | NR            |
| 425    | 164                      | NR            | 555    | 778                      | NR            | 685    | 204                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 288                      | NR            | 560    | 792                      | NR            | 690    | 178                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 478                      | NR            | 565    | 809                      | NR            | 695    | 153                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 766                      | NR            | 570    | 827                      | NR            | 700    | 132                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 1000                     | NR            | 575    | 845                      | NR            | 705    | 114                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 726                      | NR            | 580    | 862                      | NR            | 710    | 98                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 425                      | NR            | 585    | 875                      | NR            | 715    | 84                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 324                      | NR            | 590    | 887                      | NR            | 720    | 73                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 225                      | NR            | 595    | 890                      | NR            | 725    | 63                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 157                      | NR            | 600    | 887                      | NR            | 730    | 54                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 147                      | NR            | 605    | 875                      | NR            | 735    | 46                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 154                      | NR            | 610    | 856                      | NR            | 740    | 40                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 184                      | NR            | 615    | 828                      | NR            | 745    | 34                       | NR            | 875    | 1                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.57**

| 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    | 242                      | NR            | 620    | 792                      | NR            | 750    | 29                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 320                      | NR            | 625    | 748                      | NR            | 755    | 25                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 401                      | NR            | 630    | 703                      | NR            | 760    | 22                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 479                      | NR            | 635    | 651                      | NR            | 765    | 19                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 546                      | NR            | 640    | 599                      | NR            | 770    | 16                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 602                      | NR            | 645    | 545                      | NR            | 775    | 14                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 645                      | NR            | 650    | 493                      | NR            | 780    | 12                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 674                      | NR            | 655    | 443                      | NR            | 785    | 10                       | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 699                      | NR            | 660    | 394                      | NR            | 790    | 9                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 718                      | NR            | 665    | 349                      | NR            | 795    | 8                        | NR            | 925    | 0                        | NR            |
| 410    | 22                       | NR            | 540    | 732                      | NR            | 670    | 307                      | NR            | 800    | 7                        | NR            | 930    | 0                        | NR            |
| 415    | 43                       | NR            | 545    | 749                      | NR            | 675    | 269                      | NR            | 805    | 6                        | NR            | 935    | 0                        | NR            |
| 420    | 86                       | NR            | 550    | 762                      | NR            | 680    | 235                      | NR            | 810    | 5                        | NR            | 940    | 0                        | NR            |
| 425    | 164                      | NR            | 555    | 778                      | NR            | 685    | 204                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 288                      | NR            | 560    | 792                      | NR            | 690    | 178                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 478                      | NR            | 565    | 809                      | NR            | 695    | 153                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 766                      | NR            | 570    | 827                      | NR            | 700    | 132                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 1000                     | NR            | 575    | 845                      | NR            | 705    | 114                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 726                      | NR            | 580    | 862                      | NR            | 710    | 98                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 425                      | NR            | 585    | 875                      | NR            | 715    | 84                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 324                      | NR            | 590    | 887                      | NR            | 720    | 73                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 225                      | NR            | 595    | 890                      | NR            | 725    | 63                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 157                      | NR            | 600    | 887                      | NR            | 730    | 54                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 147                      | NR            | 605    | 875                      | NR            | 735    | 46                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 154                      | NR            | 610    | 856                      | NR            | 740    | 40                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 184                      | NR            | 615    | 828                      | NR            | 745    | 34                       | NR            | 875    | 1                        | NR            |        |                          |               |

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.06

| 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    | 242                      | NR            | 620    | 792                      | NR            | 750    | 29                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 320                      | NR            | 625    | 748                      | NR            | 755    | 25                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 401                      | NR            | 630    | 703                      | NR            | 760    | 22                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 479                      | NR            | 635    | 651                      | NR            | 765    | 19                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 546                      | NR            | 640    | 599                      | NR            | 770    | 16                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 602                      | NR            | 645    | 545                      | NR            | 775    | 14                       | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 645                      | NR            | 650    | 493                      | NR            | 780    | 12                       | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 674                      | NR            | 655    | 443                      | NR            | 785    | 10                       | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 699                      | NR            | 660    | 394                      | NR            | 790    | 9                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 718                      | NR            | 665    | 349                      | NR            | 795    | 8                        | NR            | 925    | 0                        | NR            |
| 410    | 22                       | NR            | 540    | 732                      | NR            | 670    | 307                      | NR            | 800    | 7                        | NR            | 930    | 0                        | NR            |
| 415    | 43                       | NR            | 545    | 749                      | NR            | 675    | 269                      | NR            | 805    | 6                        | NR            | 935    | 0                        | NR            |
| 420    | 86                       | NR            | 550    | 762                      | NR            | 680    | 235                      | NR            | 810    | 5                        | NR            | 940    | 0                        | NR            |
| 425    | 164                      | NR            | 555    | 778                      | NR            | 685    | 204                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 288                      | NR            | 560    | 792                      | NR            | 690    | 178                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 478                      | NR            | 565    | 809                      | NR            | 695    | 153                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 766                      | NR            | 570    | 827                      | NR            | 700    | 132                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 1000                     | NR            | 575    | 845                      | NR            | 705    | 114                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 726                      | NR            | 580    | 862                      | NR            | 710    | 98                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 425                      | NR            | 585    | 875                      | NR            | 715    | 84                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 324                      | NR            | 590    | 887                      | NR            | 720    | 73                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 225                      | NR            | 595    | 890                      | NR            | 725    | 63                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 157                      | NR            | 600    | 887                      | NR            | 730    | 54                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 147                      | NR            | 605    | 875                      | NR            | 735    | 46                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 154                      | NR            | 610    | 856                      | NR            | 740    | 40                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 184                      | NR            | 615    | 828                      | NR            | 745    | 34                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

$R_f = 81.8$   
 $R_g = 98.6$   
 CIE  $R_a = 80.2$   
 $R_9 = 6.7$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 73 | CES51 = 93 | CES76 = 66 |
| CES02 = 61 | CES27 = 91 | CES52 = 93 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 83 | CES78 = 66 |
| CES04 = 69 | CES29 = 71 | CES54 = 89 | CES79 = 88 |
| CES05 = 48 | CES30 = 77 | CES55 = 88 | CES80 = 85 |
| CES06 = 50 | CES31 = 74 | CES56 = 80 | CES81 = 83 |
| CES07 = 41 | CES32 = 70 | CES57 = 79 | CES82 = 93 |
| CES08 = 40 | CES33 = 77 | CES58 = 80 | CES83 = 91 |
| CES09 = 29 | CES34 = 79 | CES59 = 92 | CES84 = 91 |
| CES10 = 74 | CES35 = 88 | CES60 = 95 | CES85 = 84 |
| CES11 = 57 | CES36 = 98 | CES61 = 91 | CES86 = 78 |
| CES12 = 63 | CES37 = 85 | CES62 = 90 | CES87 = 84 |
| CES13 = 42 | CES38 = 85 | CES63 = 81 | CES88 = 85 |
| CES14 = 74 | CES39 = 95 | CES64 = 81 | CES89 = 78 |
| CES15 = 71 | CES40 = 90 | CES65 = 76 | CES90 = 84 |
| CES16 = 47 | CES41 = 90 | CES66 = 78 | CES91 = 85 |
| CES17 = 49 | CES42 = 84 | CES67 = 76 | CES92 = 71 |
| CES18 = 56 | CES43 = 81 | CES68 = 80 | CES93 = 84 |
| CES19 = 71 | CES44 = 99 | CES69 = 86 | CES94 = 65 |
| CES20 = 65 | CES45 = 87 | CES70 = 73 | CES95 = 77 |
| CES21 = 86 | CES46 = 85 | CES71 = 70 | CES96 = 83 |
| CES22 = 78 | CES47 = 84 | CES72 = 90 | CES97 = 87 |
| CES23 = 91 | CES48 = 79 | CES73 = 65 | CES98 = 81 |
| CES24 = 90 | CES49 = 84 | CES74 = 98 | CES99 = 75 |
| CES25 = 71 | CES50 = 91 | CES75 = 68 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)