

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: P1434229

Luminaire Tested: **GALN-SB7C-760-U-T2LG**

Issue Date: 03/24/202

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: P1434229  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 03/24/202  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: McGRAW-EDISON  
 Catalog Number: GALN-SB7C-760-U-T2LG  
 Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 615mA 7xLight Square PACKAGE 70CRI 5700K FIXTURE w/ TYPE II LOW GLARE  
 Light Source: (182) 5700K 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**

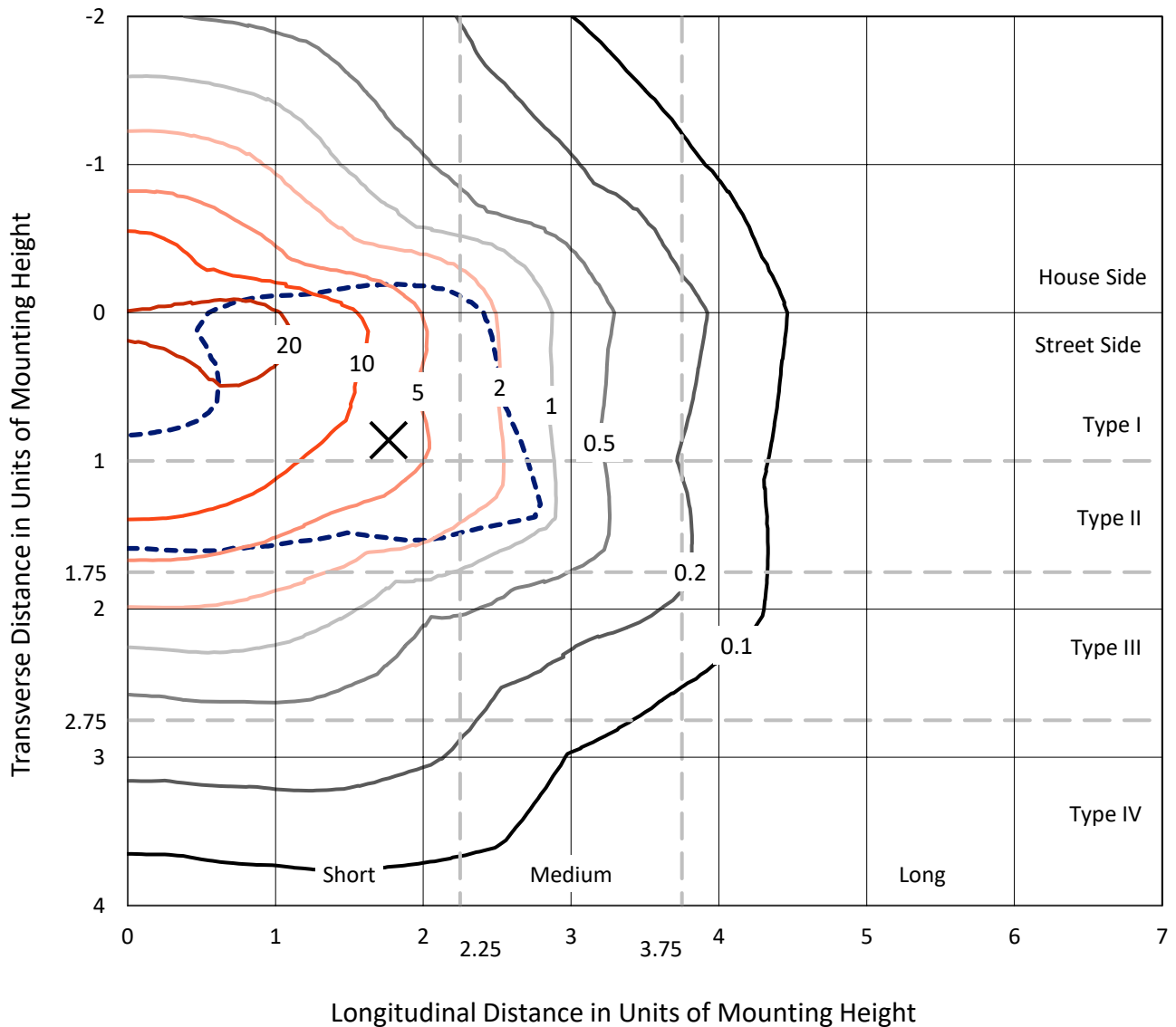
Lumens per Lamp: N/A  
 Luminaire Lumens: 54511.9 lumens  
 Efficiency: N/A  
 Efficacy: 155.5 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
 IES Classification: Type II - Short  
 BUG Rating: B4 - U0 - G4

Input Watts (W): 350.5  
 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: P1434229  
 CATALOG NUMBER: GALN-SB7C-760-U-T2LG

### Iso-Footcandle Lines of Horizontal Illumination

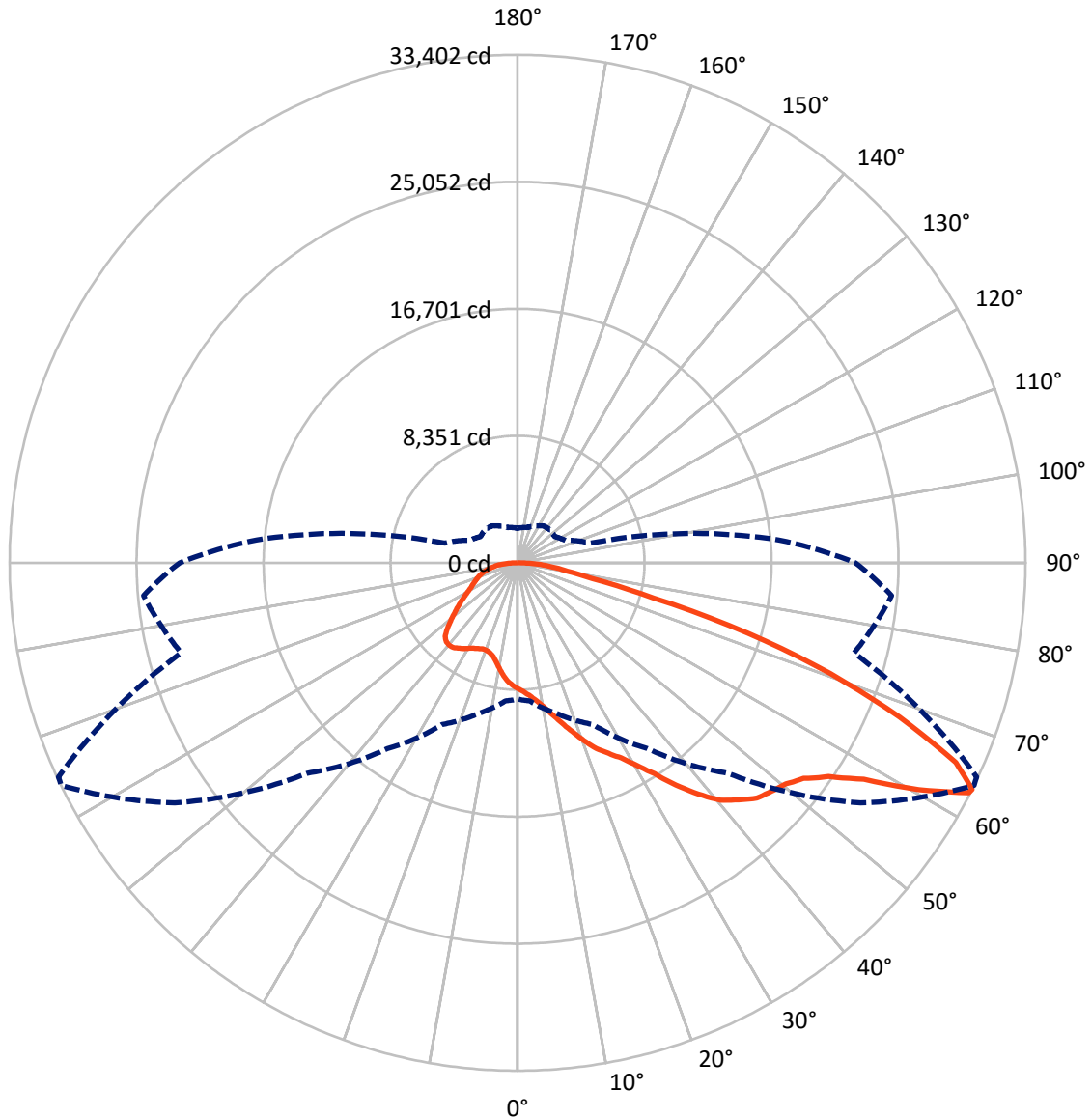
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 32 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



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

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 14645.8  | 0.0    | 14645.8 |
|                    | % Fixture | 26.9     | 0.0    | 26.9    |
| <b>Street Side</b> | Lumens    | 39866.1  | 0.0    | 39866.1 |
|                    | % Fixture | 73.1     | 0.0    | 73.1    |
| <b>Total</b>       | Lumens    | 54511.9  | 0.0    | 54511.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 762.2   | 1.4       |
| 10°-20°   | 2346.5  | 4.3       |
| 20°-30°   | 4290.8  | 7.9       |
| 30°-40°   | 7380.9  | 13.5      |
| 40°-50°   | 10884.9 | 20.0      |
| 50°-60°   | 13046.2 | 23.9      |
| 60°-70°   | 10470.9 | 19.2      |
| 70°-80°   | 4207.5  | 7.7       |
| 80°-90°   | 1121.9  | 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°    | 54511.9 | 100.0     |
| 0°-180°   | 54511.9 | 100.0     |

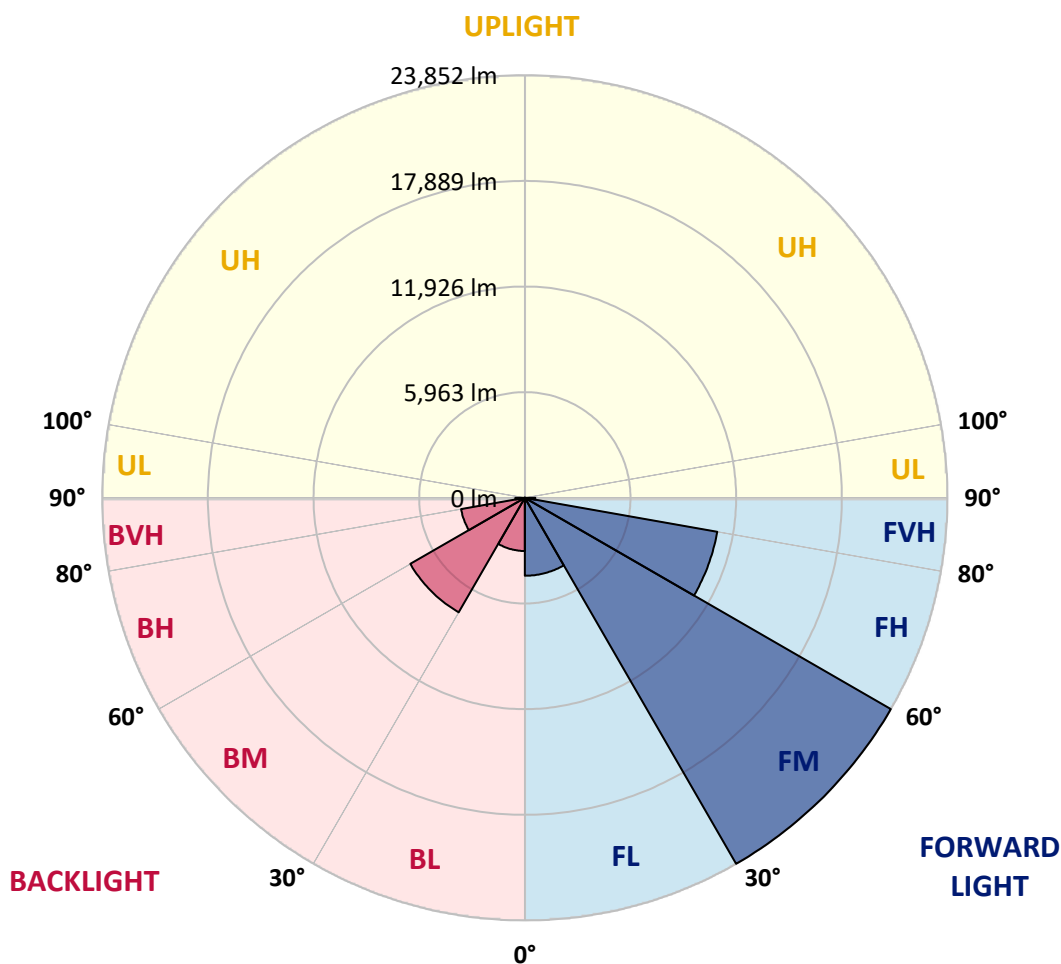


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|----------------|---------|-----------|-------------------------|------|----------|
|                |         |           | B                       | U    | G        |
| FL (0°-30°)    | 4398.1  | 8.1       |                         |      |          |
| FM (30°-60°)   | 23851.8 | 43.8      |                         |      |          |
| FH (60°-80°)   | 11026.7 | 20.2      |                         |      | G4/12000 |
| FVH (80°-90°)  | 589.5   | 1.1       |                         |      | G4/750   |
| BL (0°-30°)    | 3001.4  | 5.5       | B4/5000                 |      |          |
| BM (30°-60°)   | 7460.3  | 13.7      | B4/8500                 |      |          |
| BH (60°-80°)   | 3651.6  | 6.7       | B4/5000                 |      | G4/5000  |
| BVH (80°-90°)  | 532.5   | 1.0       |                         |      | G4/750   |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B4-U0-G4**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  | 8301.5  |
| 2.5°  | 8644.4  | 8656.6  | 8619.9  | 8607.6  | 8632.1  | 8583.2  | 8570.9  | 8521.9  | 8497.4  | 8448.5  | 8387.2  |
| 5°    | 8889.3  | 8901.5  | 8877.0  | 8877.0  | 8901.5  | 8864.8  | 8852.5  | 8803.5  | 8779.1  | 8730.1  | 8607.6  |
| 7.5°  | 8877.0  | 8889.3  | 8913.7  | 9011.7  | 9134.1  | 9183.1  | 9219.8  | 9183.1  | 9170.9  | 9097.4  | 8975.0  |
| 10°   | 8681.1  | 8693.3  | 8754.6  | 8901.5  | 9207.6  | 9428.0  | 9660.6  | 9660.6  | 9685.1  | 9623.9  | 9403.5  |
| 12.5° | 8411.7  | 8424.0  | 8570.9  | 8803.5  | 9207.6  | 9587.2  | 10064.7 | 10260.6 | 10248.4 | 10211.6 | 9954.5  |
| 15°   | 7762.8  | 7762.8  | 7983.2  | 8424.0  | 9072.9  | 9697.4  | 10407.5 | 10934.0 | 10946.3 | 10983.0 | 10676.9 |
| 17.5° | 7211.8  | 7224.1  | 7407.7  | 7799.5  | 8644.4  | 9636.1  | 10774.9 | 11680.9 | 11717.7 | 11925.8 | 11485.0 |
| 20°   | 7260.8  | 7260.8  | 7322.0  | 7493.4  | 8179.1  | 9391.3  | 10983.0 | 12476.8 | 12599.2 | 13089.0 | 12538.0 |
| 22.5° | 7640.4  | 7640.4  | 7689.3  | 7677.1  | 8093.4  | 9232.1  | 11117.7 | 13272.7 | 13493.1 | 14509.3 | 13799.2 |
| 25°   | 8338.3  | 8326.0  | 8277.0  | 8203.6  | 8448.5  | 9403.5  | 11423.8 | 13884.9 | 14313.4 | 16076.6 | 15256.2 |
| 27.5° | 9195.4  | 9170.9  | 9097.4  | 8975.0  | 9146.4  | 9917.8  | 11950.3 | 14533.8 | 14999.1 | 17790.8 | 16799.0 |
| 30°   | 10260.6 | 10187.1 | 10113.7 | 9954.5  | 10138.2 | 10762.6 | 12733.9 | 15452.1 | 15892.9 | 19737.6 | 18660.1 |
| 32.5° | 11521.7 | 11607.5 | 11362.6 | 11142.2 | 11338.1 | 11913.6 | 13897.1 | 16541.9 | 17019.4 | 21770.1 | 20594.7 |
| 35°   | 13407.3 | 13664.5 | 13591.0 | 12476.8 | 12660.5 | 13297.2 | 15256.2 | 17949.9 | 18378.5 | 23619.0 | 22578.2 |
| 37.5° | 15268.5 | 15207.2 | 15268.5 | 14337.9 | 14044.0 | 14815.4 | 16713.3 | 19296.8 | 19713.1 | 25125.0 | 24329.1 |
| 40°   | 16762.2 | 16945.9 | 16945.9 | 16186.8 | 15807.2 | 16321.5 | 18035.6 | 20533.4 | 20937.5 | 25957.6 | 25590.3 |
| 42.5° | 18390.7 | 18415.2 | 18366.2 | 17705.0 | 17558.1 | 17692.8 | 19198.8 | 21317.1 | 21647.7 | 26386.2 | 26447.4 |
| 45°   | 20227.3 | 20215.1 | 20006.9 | 19456.0 | 19235.6 | 19113.1 | 19921.2 | 22076.2 | 22406.8 | 26582.1 | 26912.7 |
| 47.5° | 21745.6 | 21806.8 | 21819.1 | 21231.4 | 20864.0 | 20337.5 | 20545.7 | 22455.8 | 22835.3 | 26361.7 | 27010.6 |
| 50°   | 21831.3 | 21929.3 | 22394.6 | 22566.0 | 22492.5 | 21647.7 | 21121.2 | 22859.8 | 23239.4 | 26410.6 | 27365.7 |
| 52.5° | 21292.6 | 21390.5 | 21990.5 | 22700.7 | 23557.8 | 23153.7 | 22027.2 | 23557.8 | 23949.6 | 26888.2 | 28173.8 |
| 55°   | 19847.8 | 20006.9 | 20900.8 | 21892.5 | 23423.1 | 23998.5 | 23631.2 | 24818.9 | 25186.2 | 27267.7 | 29116.6 |
| 57.5° | 17276.5 | 17472.4 | 18709.1 | 20288.6 | 22382.3 | 23802.6 | 25957.6 | 26839.2 | 27145.3 | 27537.1 | 29128.8 |
| 60°   | 12917.6 | 13076.8 | 15011.3 | 17141.8 | 20288.6 | 22578.2 | 27341.2 | 30304.3 | 30475.7 | 26080.0 | 27475.9 |
| 62.5° | 9513.7  | 9672.9  | 10970.8 | 12501.3 | 15941.9 | 20325.3 | 27610.6 | 33304.1 | 33328.6 | 23447.6 | 25198.5 |
| 63°   | 8962.7  | 9121.9  | 10297.3 | 11729.9 | 14913.4 | 19566.2 | 27524.9 | 33402.1 | 33316.3 | 22908.8 | 24696.5 |
| 65°   | 6979.2  | 7260.8  | 8485.2  | 9574.9  | 11178.9 | 15574.6 | 26422.9 | 31663.4 | 31785.8 | 21317.1 | 22174.2 |
| 67.5° | 4750.7  | 4958.9  | 6513.9  | 7775.0  | 8448.5  | 9917.8  | 21672.2 | 27096.3 | 27292.2 | 19664.1 | 17692.8 |
| 70°   | 3673.2  | 3771.2  | 4677.3  | 6158.8  | 6832.2  | 6305.7  | 14129.8 | 21819.1 | 21819.1 | 15354.2 | 12538.0 |
| 72.5° | 2877.4  | 2914.1  | 3526.3  | 4812.0  | 5497.6  | 4848.7  | 7873.0  | 15868.4 | 15280.7 | 9109.7  | 8362.8  |
| 75°   | 2057.0  | 2106.0  | 2657.0  | 3587.5  | 4383.4  | 3820.2  | 5032.3  | 9244.3  | 8889.3  | 5240.5  | 5583.3  |
| 77.5° | 1628.5  | 1653.0  | 1983.6  | 2644.7  | 3550.8  | 2914.1  | 3832.4  | 5044.6  | 4995.6  | 3685.5  | 3587.5  |
| 80°   | 1285.6  | 1334.6  | 1555.0  | 1897.8  | 2742.7  | 2277.4  | 2852.9  | 3330.4  | 3232.5  | 2534.5  | 2301.9  |
| 82.5° | 918.3   | 1004.0  | 1199.9  | 1444.8  | 2032.5  | 1628.5  | 1873.4  | 2350.9  | 2350.9  | 1910.1  | 1518.3  |
| 85°   | 563.2   | 636.7   | 710.2   | 893.8   | 1444.8  | 1053.0  | 991.8   | 1518.3  | 1555.0  | 1432.6  | 979.5   |
| 87.5° | 269.4   | 293.9   | 342.8   | 379.6   | 526.5   | 477.5   | 391.8   | 575.5   | 587.7   | 636.7   | 404.1   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



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CATALOG NUMBER: GALN-SB7C-760-U-T2LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 8301.5  | 8301.5  | 8301.5 | 8301.5 | 8301.5 | 8301.5 | 8301.5 | 8301.5 | 8301.5 | 8301.5 | 8301.5 |
| 2.5°  | 8375.0  | 8350.5  | 8228.1 | 8105.6 | 7970.9 | 7848.5 | 7726.1 | 7628.1 | 7517.9 | 7542.4 | 7554.6 |
| 5°    | 8534.2  | 8473.0  | 8203.6 | 7885.2 | 7468.9 | 7077.1 | 6697.6 | 6428.2 | 6256.8 | 6207.8 | 6109.8 |
| 7.5°  | 8877.0  | 8730.1  | 8240.3 | 7566.9 | 6795.5 | 6183.3 | 5828.2 | 5669.0 | 5620.1 | 5632.3 | 5607.8 |
| 10°   | 9268.8  | 9048.4  | 8289.3 | 7187.3 | 6207.8 | 5791.5 | 5742.5 | 5840.5 | 5889.4 | 5938.4 | 5950.7 |
| 12.5° | 9783.1  | 9428.0  | 8264.8 | 6771.0 | 5926.2 | 5852.7 | 6036.4 | 6220.0 | 6330.2 | 6403.7 | 6391.4 |
| 15°   | 10383.0 | 9905.5  | 8191.3 | 6428.2 | 5889.4 | 6085.3 | 6318.0 | 6526.1 | 6660.8 | 6734.3 | 6697.6 |
| 17.5° | 11105.4 | 10468.8 | 8105.6 | 6207.8 | 5999.6 | 6232.3 | 6477.2 | 6685.3 | 6832.2 | 6881.2 | 6844.5 |
| 20°   | 11999.3 | 11105.4 | 7958.7 | 6109.8 | 6085.3 | 6293.5 | 6513.9 | 6709.8 | 6832.2 | 6881.2 | 6832.2 |
| 22.5° | 13052.3 | 11864.6 | 7836.3 | 6109.8 | 6122.1 | 6293.5 | 6452.7 | 6599.6 | 6709.8 | 6746.5 | 6685.3 |
| 25°   | 14399.1 | 12746.2 | 7787.3 | 6207.8 | 6134.3 | 6232.3 | 6318.0 | 6403.7 | 6464.9 | 6489.4 | 6464.9 |
| 27.5° | 15770.5 | 13762.4 | 7811.8 | 6330.2 | 6122.1 | 6146.6 | 6146.6 | 6158.8 | 6171.1 | 6183.3 | 6171.1 |
| 30°   | 17350.0 | 14790.9 | 7909.7 | 6489.4 | 6146.6 | 6024.1 | 5987.4 | 5913.9 | 5852.7 | 5803.7 | 5754.8 |
| 32.5° | 18880.5 | 15770.5 | 8081.1 | 6722.0 | 6122.1 | 5889.4 | 5816.0 | 5632.3 | 5460.9 | 5314.0 | 5314.0 |
| 35°   | 20533.4 | 16786.7 | 8387.2 | 6893.5 | 6097.6 | 5767.0 | 5558.8 | 5350.7 | 5167.0 | 4958.9 | 4958.9 |
| 37.5° | 21953.8 | 17656.1 | 8632.1 | 7089.4 | 6073.1 | 5620.1 | 5289.5 | 5056.8 | 4860.9 | 4652.8 | 4628.3 |
| 40°   | 22945.5 | 18158.1 | 8779.1 | 7162.8 | 5987.4 | 5424.2 | 5032.3 | 4738.5 | 4456.9 | 4175.3 | 4163.0 |
| 42.5° | 23423.1 | 18133.6 | 8693.3 | 7138.3 | 5828.2 | 5179.3 | 4812.0 | 4420.1 | 4040.6 | 3783.4 | 3759.0 |
| 45°   | 23680.2 | 17974.4 | 8362.8 | 6930.2 | 5571.1 | 4922.1 | 4530.3 | 4114.0 | 3734.5 | 3501.8 | 3452.9 |
| 47.5° | 23631.2 | 17582.6 | 7909.7 | 6415.9 | 5228.3 | 4640.5 | 4248.7 | 3820.2 | 3514.1 | 3379.4 | 3379.4 |
| 50°   | 23765.9 | 17276.5 | 7395.5 | 5828.2 | 4763.0 | 4309.9 | 3991.6 | 3599.8 | 3416.1 | 3244.7 | 3183.5 |
| 52.5° | 24365.9 | 17533.6 | 6954.7 | 5277.2 | 4322.2 | 3991.6 | 3771.2 | 3440.6 | 3208.0 | 3097.8 | 3061.0 |
| 55°   | 25161.7 | 18084.6 | 6538.4 | 4787.5 | 3893.6 | 3710.0 | 3599.8 | 3293.7 | 3024.3 | 2914.1 | 2852.9 |
| 57.5° | 25308.7 | 18464.2 | 6134.3 | 4309.9 | 3538.6 | 3489.6 | 3452.9 | 3036.6 | 2816.2 | 2730.4 | 2681.5 |
| 60°   | 24292.4 | 18182.6 | 5607.8 | 3881.4 | 3256.9 | 3281.4 | 3183.5 | 2877.4 | 2620.2 | 2534.5 | 2485.6 |
| 62.5° | 22566.0 | 17447.9 | 5081.3 | 3514.1 | 3036.6 | 3085.5 | 2987.6 | 2681.5 | 2424.3 | 2338.6 | 2314.1 |
| 63°   | 22223.1 | 17252.0 | 4958.9 | 3477.3 | 2987.6 | 3048.8 | 2963.1 | 2657.0 | 2399.9 | 2314.1 | 2277.4 |
| 65°   | 20178.4 | 16076.6 | 4530.3 | 3281.4 | 2828.4 | 2828.4 | 2840.6 | 2534.5 | 2314.1 | 2277.4 | 2252.9 |
| 67.5° | 16456.1 | 13419.6 | 4065.1 | 3048.8 | 2657.0 | 2693.7 | 2754.9 | 2583.5 | 2497.8 | 2473.3 | 2448.8 |
| 70°   | 12440.1 | 10101.4 | 3661.0 | 2828.4 | 2473.3 | 2595.8 | 3012.1 | 2938.6 | 2620.2 | 2399.9 | 2350.9 |
| 72.5° | 8815.8  | 6881.2  | 3305.9 | 2608.0 | 2252.9 | 2559.0 | 3122.3 | 2803.9 | 2363.1 | 2106.0 | 2057.0 |
| 75°   | 5901.7  | 4432.4  | 2950.8 | 2375.4 | 2008.0 | 2363.1 | 2950.8 | 2559.0 | 2057.0 | 1995.8 | 1922.3 |
| 77.5° | 3710.0  | 3159.0  | 2595.8 | 2106.0 | 1738.7 | 2106.0 | 2681.5 | 2277.4 | 1775.4 | 1799.9 | 1689.7 |
| 80°   | 2265.2  | 2252.9  | 2179.5 | 1787.6 | 1395.8 | 1677.4 | 2252.9 | 1922.3 | 1420.3 | 1420.3 | 1261.1 |
| 82.5° | 1346.9  | 1628.5  | 1848.9 | 1481.5 | 1016.3 | 1199.9 | 1628.5 | 1444.8 | 1187.7 | 1151.0 | 1077.5 |
| 85°   | 906.1   | 1102.0  | 1469.3 | 1138.7 | 648.9  | 734.6  | 1126.5 | 1212.2 | 1089.7 | 955.0  | 893.8  |
| 87.5° | 330.6   | 440.8   | 673.4  | 465.3  | 281.6  | 440.8  | 844.8  | 881.6  | 661.2  | 514.3  | 465.3  |
| 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: SP1-2407-184-7

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-757-U-5WQ

Data in this report applies to families of products including GSS-SB1A-757-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-7  
 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-757-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 5700K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 5571  
 CIE u': 0.2033  
 CIE v': 0.4806  
 Duv: 0.0041  
 CIE x: 0.3308  
 CIE y: 0.3476  
 CIE z: 0.3216  
 Peak Wavelength (nm): 442  
 Dominant Wavelength (nm): 544  
 Purity: 3.635698  
 Rf: 70.4  
 Rg: 97.1

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 69.9 |      |       |
| R1:       | 68.8 | R9:  | -35.4 |
| R2:       | 72.5 | R10: | 36.7  |
| R3:       | 76.8 | R11: | 73.9  |
| R4:       | 72.0 | R12: | 47.8  |
| R5:       | 70.9 | R13: | 68.0  |
| R6:       | 65.6 | R14: | 87.0  |
| R7:       | 75.5 | R15: | 59.8  |
| R8:       | 56.8 |      |       |



**Test Conditions**

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-7

| 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 5700K 4-step quadrangle

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**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    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.84**

| 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    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.71

| 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    | 120                      | NR            | 620    | 298                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 167                      | NR            | 625    | 270                      | NR            | 755    | 7                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 222                      | NR            | 630    | 245                      | NR            | 760    | 6                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 279                      | NR            | 635    | 219                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 329                      | NR            | 640    | 196                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 371                      | NR            | 645    | 173                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 4                        | NR            | 520    | 403                      | NR            | 650    | 153                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 6                        | NR            | 525    | 424                      | NR            | 655    | 135                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 9                        | NR            | 530    | 439                      | NR            | 660    | 117                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 14                       | NR            | 535    | 449                      | NR            | 665    | 103                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 28                       | NR            | 540    | 454                      | NR            | 670    | 89                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 55                       | NR            | 545    | 459                      | NR            | 675    | 77                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 118                      | NR            | 550    | 463                      | NR            | 680    | 67                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 237                      | NR            | 555    | 466                      | NR            | 685    | 58                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 420                      | NR            | 560    | 467                      | NR            | 690    | 50                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 677                      | NR            | 565    | 469                      | NR            | 695    | 43                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 962                      | NR            | 570    | 469                      | NR            | 700    | 37                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 894                      | NR            | 575    | 466                      | NR            | 705    | 32                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 472                      | NR            | 580    | 461                      | NR            | 710    | 28                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 275                      | NR            | 585    | 450                      | NR            | 715    | 24                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 180                      | NR            | 590    | 437                      | NR            | 720    | 21                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 420                      | NR            | 725    | 18                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 76                       | NR            | 600    | 400                      | NR            | 730    | 15                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 68                       | NR            | 605    | 376                      | NR            | 735    | 13                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 69                       | NR            | 610    | 352                      | NR            | 740    | 11                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 86                       | NR            | 615    | 325                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 70.4$   
 $R_g = 97.1$   
 CIE  $R_a = 69.9$   
 $R_g = -35.4$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 52 | CES51 = 87 | CES76 = 40 |
| CES02 = 59 | CES27 = 77 | CES52 = 88 | CES77 = 62 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 43 |
| CES04 = 68 | CES29 = 46 | CES54 = 79 | CES79 = 72 |
| CES05 = 45 | CES30 = 54 | CES55 = 78 | CES80 = 68 |
| CES06 = 49 | CES31 = 52 | CES56 = 67 | CES81 = 70 |
| CES07 = 38 | CES32 = 49 | CES57 = 64 | CES82 = 87 |
| CES08 = 37 | CES33 = 59 | CES58 = 66 | CES83 = 81 |
| CES09 = 29 | CES34 = 61 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 78 | CES60 = 91 | CES85 = 83 |
| CES11 = 55 | CES36 = 88 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 71 | CES62 = 77 | CES87 = 74 |
| CES13 = 41 | CES38 = 64 | CES63 = 74 | CES88 = 76 |
| CES14 = 74 | CES39 = 90 | CES64 = 71 | CES89 = 75 |
| CES15 = 70 | CES40 = 81 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 82 | CES66 = 66 | CES91 = 93 |
| CES17 = 48 | CES42 = 69 | CES67 = 63 | CES92 = 69 |
| CES18 = 55 | CES43 = 67 | CES68 = 71 | CES93 = 82 |
| CES19 = 70 | CES44 = 98 | CES69 = 81 | CES94 = 58 |
| CES20 = 63 | CES45 = 77 | CES70 = 57 | CES95 = 72 |
| CES21 = 85 | CES46 = 76 | CES71 = 54 | CES96 = 78 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 45 | CES98 = 70 |
| CES24 = 90 | CES49 = 77 | CES74 = 92 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)