

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: P1434145

Luminaire Tested: **GALN-SB4C-735-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: P1434145  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 03/24/202  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: McGRAW-EDISON  
 Catalog Number: GALN-SB4C-735-U-T2LG  
 Description: GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 615mA 4xLight  
 Square PACKAGE 70CRI 3500K FIXTURE w/ TYPE II LOW GLARE  
 Light Source: (104) 3500K 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               |

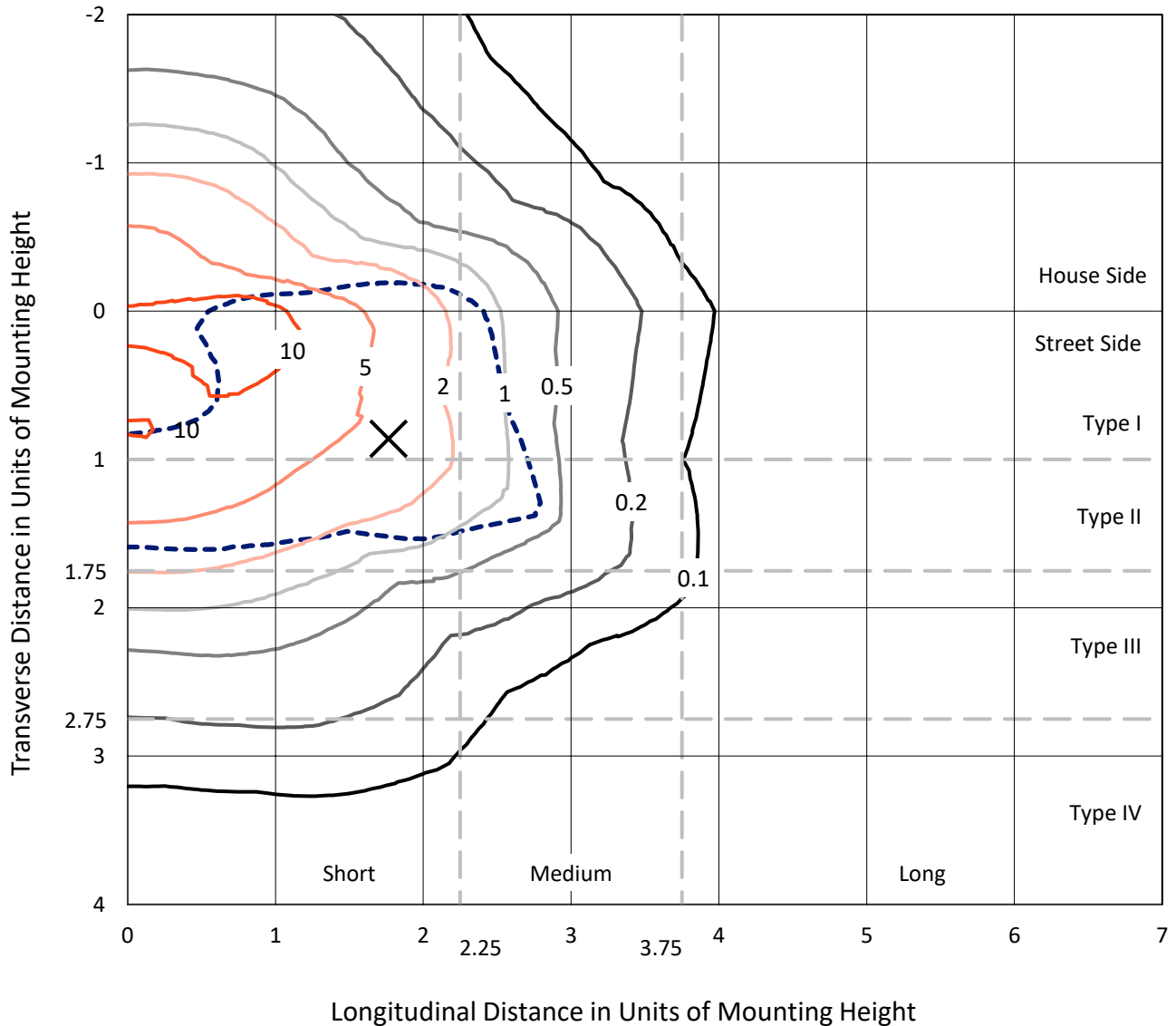
**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 29030.5 lumens  
 Efficiency: N/A  
 Efficacy: 144.6 lumens/watt  
 Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
 IES Classification: Type II - Short  
 BUG Rating: B3 - U0 - G3  
  
 Input Watts (W): 200.7  
 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: P1434145  
 CATALOG NUMBER: GALN-SB4C-735-U-T2LG

### Iso-Footcandle Lines of Horizontal Illumination

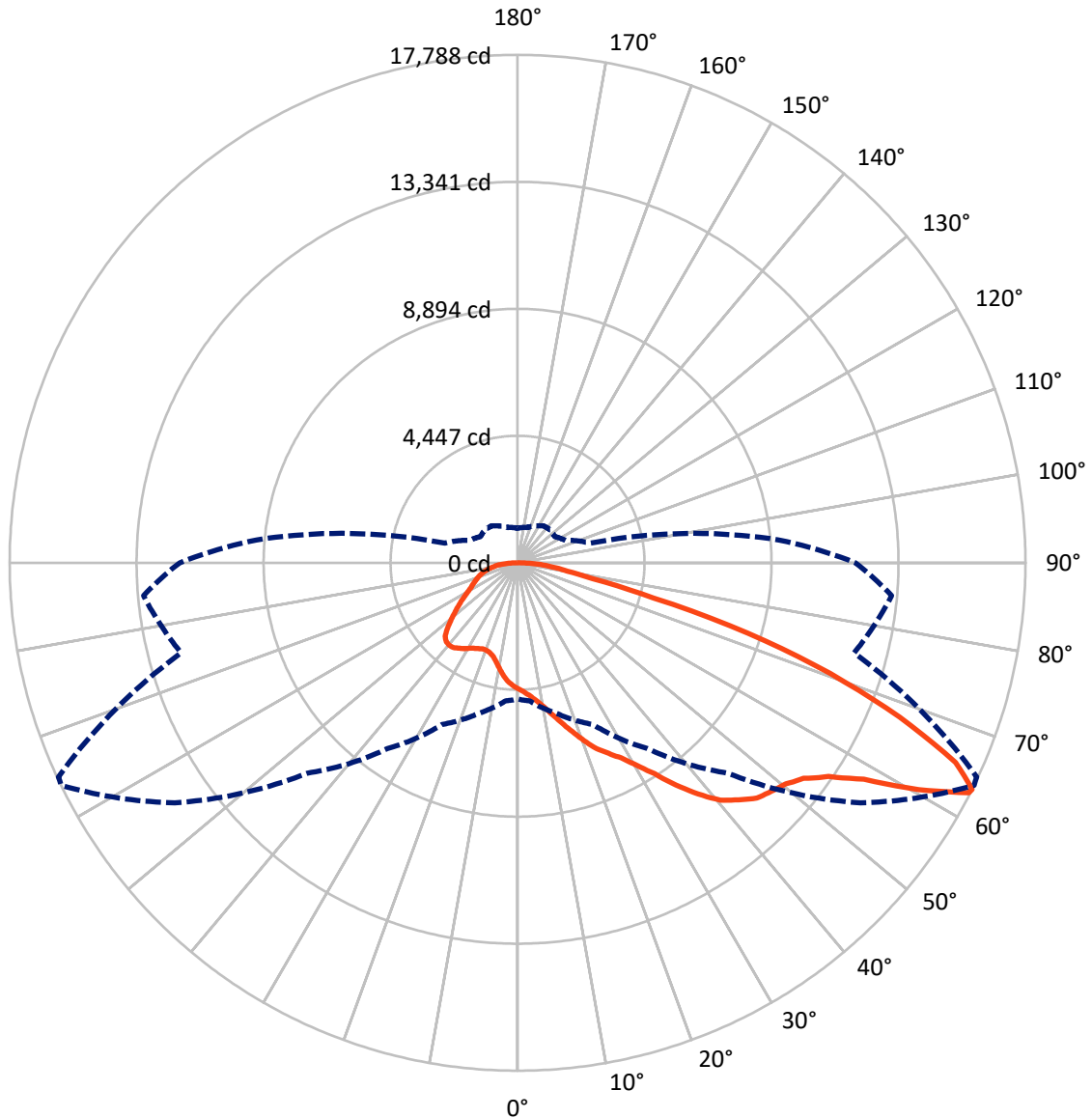
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 17 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    | 7799.7   | 0.0    | 7799.7  |
|                    | % Fixture | 26.9     | 0.0    | 26.9    |
| <b>Street Side</b> | Lumens    | 21230.8  | 0.0    | 21230.8 |
|                    | % Fixture | 73.1     | 0.0    | 73.1    |
| <b>Total</b>       | Lumens    | 29030.5  | 0.0    | 29030.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 405.9   | 1.4       |
| 10°-20°   | 1249.6  | 4.3       |
| 20°-30°   | 2285.1  | 7.9       |
| 30°-40°   | 3930.7  | 13.5      |
| 40°-50°   | 5796.8  | 20.0      |
| 50°-60°   | 6947.8  | 23.9      |
| 60°-70°   | 5576.3  | 19.2      |
| 70°-80°   | 2240.7  | 7.7       |
| 80°-90°   | 597.5   | 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°    | 29030.5 | 100.0     |
| 0°-180°   | 29030.5 | 100.0     |

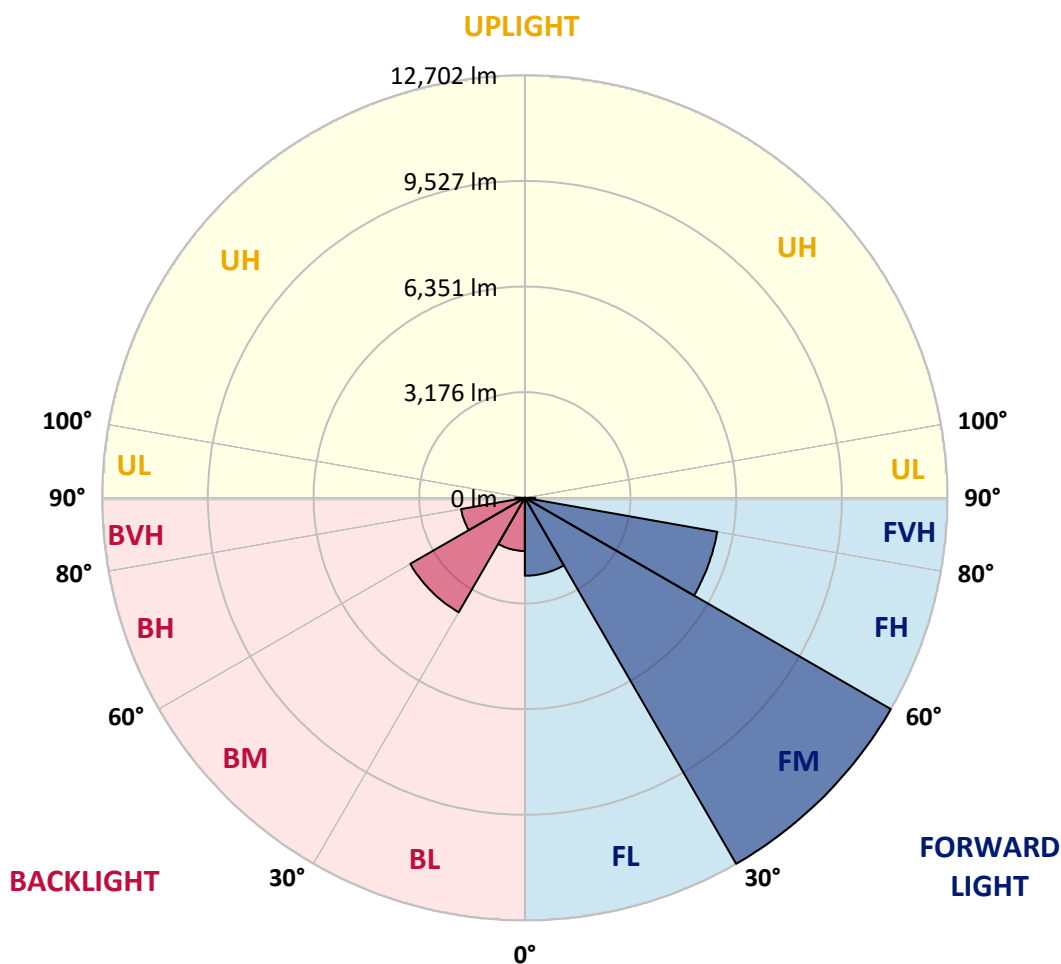


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|---------|-----------|-------------------------|------|---------|
|                |         |           | B                       | U    | G       |
| FL (0°-30°)    | 2342.2  | 8.1       |                         |      |         |
| FM (30°-60°)   | 12702.4 | 43.8      |                         |      |         |
| FH (60°-80°)   | 5872.3  | 20.2      |                         |      | G3/7500 |
| FVH (80°-90°)  | 313.9   | 1.1       |                         |      | G3/500  |
| BL (0°-30°)    | 1598.4  | 5.5       | B3/2500                 |      |         |
| BM (30°-60°)   | 3973.0  | 13.7      | B3/5000                 |      |         |
| BH (60°-80°)   | 1944.7  | 6.7       | B3/2500                 |      | G3/2500 |
| BVH (80°-90°)  | 283.6   | 1.0       |                         |      | G3/500  |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G3**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  | 4421.0  |
| 2.5°  | 4603.6  | 4610.1  | 4590.5  | 4584.0  | 4597.1  | 4571.0  | 4564.5  | 4538.4  | 4525.3  | 4499.3  | 4466.7  |
| 5°    | 4734.0  | 4740.5  | 4727.5  | 4727.5  | 4740.5  | 4721.0  | 4714.4  | 4688.4  | 4675.3  | 4649.2  | 4584.0  |
| 7.5°  | 4727.5  | 4734.0  | 4747.0  | 4799.2  | 4864.4  | 4890.5  | 4910.1  | 4890.5  | 4884.0  | 4844.9  | 4779.6  |
| 10°   | 4623.2  | 4629.7  | 4662.3  | 4740.5  | 4903.5  | 5020.9  | 5144.8  | 5144.8  | 5157.8  | 5125.2  | 5007.9  |
| 12.5° | 4479.7  | 4486.2  | 4564.5  | 4688.4  | 4903.5  | 5105.7  | 5360.0  | 5464.3  | 5457.8  | 5438.2  | 5301.3  |
| 15°   | 4134.1  | 4134.1  | 4251.5  | 4486.2  | 4831.8  | 5164.4  | 5542.6  | 5823.0  | 5829.5  | 5849.0  | 5686.0  |
| 17.5° | 3840.7  | 3847.2  | 3945.0  | 4153.7  | 4603.6  | 5131.8  | 5738.2  | 6220.7  | 6240.3  | 6351.1  | 6116.4  |
| 20°   | 3866.8  | 3866.8  | 3899.4  | 3990.6  | 4355.8  | 5001.3  | 5849.0  | 6644.6  | 6709.8  | 6970.6  | 6677.2  |
| 22.5° | 4068.9  | 4068.9  | 4095.0  | 4088.5  | 4310.2  | 4916.6  | 5920.8  | 7068.4  | 7185.8  | 7727.0  | 7348.8  |
| 25°   | 4440.6  | 4434.1  | 4408.0  | 4368.8  | 4499.3  | 5007.9  | 6083.8  | 7394.4  | 7622.7  | 8561.6  | 8124.7  |
| 27.5° | 4897.0  | 4884.0  | 4844.9  | 4779.6  | 4870.9  | 5281.7  | 6364.2  | 7740.0  | 7987.8  | 9474.5  | 8946.3  |
| 30°   | 5464.3  | 5425.2  | 5386.1  | 5301.3  | 5399.1  | 5731.7  | 6781.5  | 8229.1  | 8463.8  | 10511.3 | 9937.5  |
| 32.5° | 6135.9  | 6181.6  | 6051.2  | 5933.8  | 6038.1  | 6344.6  | 7401.0  | 8809.4  | 9063.7  | 11593.7 | 10967.8 |
| 35°   | 7140.1  | 7277.1  | 7237.9  | 6644.6  | 6742.4  | 7081.4  | 8124.7  | 9559.3  | 9787.5  | 12578.4 | 12024.1 |
| 37.5° | 8131.3  | 8098.7  | 8131.3  | 7635.7  | 7479.2  | 7890.0  | 8900.7  | 10276.6 | 10498.3 | 13380.4 | 12956.6 |
| 40°   | 8926.8  | 9024.6  | 9024.6  | 8620.3  | 8418.2  | 8692.0  | 9604.9  | 10935.2 | 11150.3 | 13823.8 | 13628.2 |
| 42.5° | 9794.0  | 9807.1  | 9781.0  | 9428.9  | 9350.6  | 9422.4  | 10224.4 | 11352.5 | 11528.5 | 14052.0 | 14084.6 |
| 45°   | 10772.1 | 10765.6 | 10654.8 | 10361.3 | 10244.0 | 10178.8 | 10609.1 | 11756.8 | 11932.8 | 14156.4 | 14332.4 |
| 47.5° | 11580.7 | 11613.3 | 11619.8 | 11306.8 | 11111.2 | 10830.8 | 10941.7 | 11958.9 | 12161.0 | 14039.0 | 14384.6 |
| 50°   | 11626.3 | 11678.5 | 11926.3 | 12017.6 | 11978.5 | 11528.5 | 11248.1 | 12174.1 | 12376.2 | 14065.1 | 14573.7 |
| 52.5° | 11339.4 | 11391.6 | 11711.1 | 12089.3 | 12545.8 | 12330.6 | 11730.7 | 12545.8 | 12754.4 | 14319.4 | 15004.0 |
| 55°   | 10570.0 | 10654.8 | 11130.8 | 11658.9 | 12474.0 | 12780.5 | 12584.9 | 13217.4 | 13413.0 | 14521.5 | 15506.1 |
| 57.5° | 9200.7  | 9305.0  | 9963.6  | 10804.7 | 11919.8 | 12676.2 | 13823.8 | 14293.3 | 14456.3 | 14665.0 | 15512.7 |
| 60°   | 6879.3  | 6964.1  | 7994.3  | 9128.9  | 10804.7 | 12024.1 | 14560.6 | 16138.6 | 16229.9 | 13889.0 | 14632.4 |
| 62.5° | 5066.6  | 5151.3  | 5842.5  | 6657.6  | 8489.9  | 10824.3 | 14704.1 | 17736.2 | 17749.2 | 12487.1 | 13419.5 |
| 63°   | 4773.1  | 4857.9  | 5483.9  | 6246.8  | 7942.2  | 10420.0 | 14658.5 | 17788.4 | 17742.7 | 12200.2 | 13152.2 |
| 65°   | 3716.8  | 3866.8  | 4518.8  | 5099.2  | 5953.4  | 8294.3  | 14071.6 | 16862.4 | 16927.6 | 11352.5 | 11808.9 |
| 67.5° | 2530.0  | 2640.9  | 3469.0  | 4140.6  | 4499.3  | 5281.7  | 11541.6 | 14430.2 | 14534.6 | 10472.2 | 9422.4  |
| 70°   | 1956.2  | 2008.4  | 2490.9  | 3279.9  | 3638.5  | 3358.1  | 7524.8  | 11619.8 | 11619.8 | 8176.9  | 6677.2  |
| 72.5° | 1532.4  | 1551.9  | 1878.0  | 2562.6  | 2927.8  | 2582.2  | 4192.8  | 8450.8  | 8137.8  | 4851.4  | 4453.6  |
| 75°   | 1095.5  | 1121.6  | 1415.0  | 1910.6  | 2334.4  | 2034.4  | 2680.0  | 4923.1  | 4734.0  | 2790.8  | 2973.4  |
| 77.5° | 867.2   | 880.3   | 1056.3  | 1408.5  | 1891.0  | 1551.9  | 2041.0  | 2686.5  | 2660.4  | 1962.7  | 1910.6  |
| 80°   | 684.7   | 710.8   | 828.1   | 1010.7  | 1460.6  | 1212.8  | 1519.3  | 1773.6  | 1721.5  | 1349.8  | 1225.9  |
| 82.5° | 489.0   | 534.7   | 639.0   | 769.4   | 1082.4  | 867.2   | 997.7   | 1252.0  | 1252.0  | 1017.2  | 808.6   |
| 85°   | 300.0   | 339.1   | 378.2   | 476.0   | 769.4   | 560.8   | 528.2   | 808.6   | 828.1   | 762.9   | 521.7   |
| 87.5° | 143.5   | 156.5   | 182.6   | 202.1   | 280.4   | 254.3   | 208.7   | 306.5   | 313.0   | 339.1   | 215.2   |
| 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: P1434145

CATALOG NUMBER: GALN-SB4C-735-U-T2LG

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4421.0  | 4421.0 | 4421.0 | 4421.0 | 4421.0 | 4421.0 | 4421.0 | 4421.0 | 4421.0 | 4421.0 | 4421.0 |
| 2.5°  | 4460.1  | 4447.1 | 4381.9 | 4316.7 | 4245.0 | 4179.7 | 4114.5 | 4062.4 | 4003.7 | 4016.7 | 4023.2 |
| 5°    | 4544.9  | 4512.3 | 4368.8 | 4199.3 | 3977.6 | 3768.9 | 3566.8 | 3423.3 | 3332.1 | 3306.0 | 3253.8 |
| 7.5°  | 4727.5  | 4649.2 | 4388.4 | 4029.8 | 3619.0 | 3292.9 | 3103.8 | 3019.1 | 2993.0 | 2999.5 | 2986.5 |
| 10°   | 4936.1  | 4818.8 | 4414.5 | 3827.6 | 3306.0 | 3084.3 | 3058.2 | 3110.4 | 3136.4 | 3162.5 | 3169.0 |
| 12.5° | 5210.0  | 5020.9 | 4401.4 | 3605.9 | 3156.0 | 3116.9 | 3214.7 | 3312.5 | 3371.2 | 3410.3 | 3403.8 |
| 15°   | 5529.5  | 5275.2 | 4362.3 | 3423.3 | 3136.4 | 3240.8 | 3364.7 | 3475.5 | 3547.2 | 3586.4 | 3566.8 |
| 17.5° | 5914.2  | 5575.2 | 4316.7 | 3306.0 | 3195.1 | 3319.0 | 3449.4 | 3560.3 | 3638.5 | 3664.6 | 3645.1 |
| 20°   | 6390.2  | 5914.2 | 4238.4 | 3253.8 | 3240.8 | 3351.6 | 3469.0 | 3573.3 | 3638.5 | 3664.6 | 3638.5 |
| 22.5° | 6951.0  | 6318.5 | 4173.2 | 3253.8 | 3260.3 | 3351.6 | 3436.4 | 3514.6 | 3573.3 | 3592.9 | 3560.3 |
| 25°   | 7668.3  | 6788.0 | 4147.1 | 3306.0 | 3266.9 | 3319.0 | 3364.7 | 3410.3 | 3442.9 | 3456.0 | 3442.9 |
| 27.5° | 8398.6  | 7329.2 | 4160.2 | 3371.2 | 3260.3 | 3273.4 | 3273.4 | 3279.9 | 3286.4 | 3292.9 | 3286.4 |
| 30°   | 9239.8  | 7877.0 | 4212.3 | 3456.0 | 3273.4 | 3208.2 | 3188.6 | 3149.5 | 3116.9 | 3090.8 | 3064.7 |
| 32.5° | 10054.9 | 8398.6 | 4303.6 | 3579.8 | 3260.3 | 3136.4 | 3097.3 | 2999.5 | 2908.2 | 2830.0 | 2830.0 |
| 35°   | 10935.2 | 8939.8 | 4466.7 | 3671.1 | 3247.3 | 3071.2 | 2960.4 | 2849.5 | 2751.7 | 2640.9 | 2640.9 |
| 37.5° | 11691.5 | 9402.8 | 4597.1 | 3775.5 | 3234.2 | 2993.0 | 2816.9 | 2693.0 | 2588.7 | 2477.9 | 2464.8 |
| 40°   | 12219.7 | 9670.1 | 4675.3 | 3814.6 | 3188.6 | 2888.7 | 2680.0 | 2523.5 | 2373.5 | 2223.5 | 2217.0 |
| 42.5° | 12474.0 | 9657.1 | 4629.7 | 3801.5 | 3103.8 | 2758.2 | 2562.6 | 2354.0 | 2151.8 | 2014.9 | 2001.8 |
| 45°   | 12611.0 | 9572.3 | 4453.6 | 3690.7 | 2966.9 | 2621.3 | 2412.6 | 2190.9 | 1988.8 | 1864.9 | 1838.8 |
| 47.5° | 12584.9 | 9363.7 | 4212.3 | 3416.8 | 2784.3 | 2471.3 | 2262.7 | 2034.4 | 1871.4 | 1799.7 | 1799.7 |
| 50°   | 12656.6 | 9200.7 | 3938.5 | 3103.8 | 2536.5 | 2295.3 | 2125.7 | 1917.1 | 1819.3 | 1728.0 | 1695.4 |
| 52.5° | 12976.1 | 9337.6 | 3703.7 | 2810.4 | 2301.8 | 2125.7 | 2008.4 | 1832.3 | 1708.4 | 1649.7 | 1630.2 |
| 55°   | 13400.0 | 9631.0 | 3482.0 | 2549.6 | 2073.6 | 1975.8 | 1917.1 | 1754.1 | 1610.6 | 1551.9 | 1519.3 |
| 57.5° | 13478.2 | 9833.2 | 3266.9 | 2295.3 | 1884.5 | 1858.4 | 1838.8 | 1617.1 | 1499.8 | 1454.1 | 1428.0 |
| 60°   | 12937.0 | 9683.2 | 2986.5 | 2067.1 | 1734.5 | 1747.5 | 1695.4 | 1532.4 | 1395.4 | 1349.8 | 1323.7 |
| 62.5° | 12017.6 | 9291.9 | 2706.1 | 1871.4 | 1617.1 | 1643.2 | 1591.0 | 1428.0 | 1291.1 | 1245.4 | 1232.4 |
| 63°   | 11835.0 | 9187.6 | 2640.9 | 1851.9 | 1591.0 | 1623.6 | 1578.0 | 1415.0 | 1278.0 | 1232.4 | 1212.8 |
| 65°   | 10746.1 | 8561.6 | 2412.6 | 1747.5 | 1506.3 | 1506.3 | 1512.8 | 1349.8 | 1232.4 | 1212.8 | 1199.8 |
| 67.5° | 8763.8  | 7146.6 | 2164.9 | 1623.6 | 1415.0 | 1434.5 | 1467.1 | 1375.9 | 1330.2 | 1317.2 | 1304.1 |
| 70°   | 6625.0  | 5379.5 | 1949.7 | 1506.3 | 1317.2 | 1382.4 | 1604.1 | 1565.0 | 1395.4 | 1278.0 | 1252.0 |
| 72.5° | 4694.9  | 3664.6 | 1760.6 | 1388.9 | 1199.8 | 1362.8 | 1662.8 | 1493.2 | 1258.5 | 1121.6 | 1095.5 |
| 75°   | 3143.0  | 2360.5 | 1571.5 | 1265.0 | 1069.4 | 1258.5 | 1571.5 | 1362.8 | 1095.5 | 1062.9 | 1023.7 |
| 77.5° | 1975.8  | 1682.3 | 1382.4 | 1121.6 | 925.9  | 1121.6 | 1428.0 | 1212.8 | 945.5  | 958.5  | 899.9  |
| 80°   | 1206.3  | 1199.8 | 1160.7 | 952.0  | 743.4  | 893.3  | 1199.8 | 1023.7 | 756.4  | 756.4  | 671.6  |
| 82.5° | 717.3   | 867.2  | 984.6  | 789.0  | 541.2  | 639.0  | 867.2  | 769.4  | 632.5  | 612.9  | 573.8  |
| 85°   | 482.5   | 586.9  | 782.5  | 606.4  | 345.6  | 391.2  | 599.9  | 645.5  | 580.3  | 508.6  | 476.0  |
| 87.5° | 176.1   | 234.7  | 358.6  | 247.8  | 150.0  | 234.7  | 449.9  | 469.5  | 352.1  | 273.9  | 247.8  |
| 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: SP1-2407-184-5

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-735-U-5WQ

Data in this report applies to families of products including GSS-SB1A-735-U-5WQ

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-5  
 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-735-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3500K CCT 26 LEDS

**Spectral Parameters**

CCT (K): 3369  
 CIE u': 0.2386  
 CIE v': 0.5156  
 Duv: 0.0013  
 CIE x: 0.4143  
 CIE y: 0.3980  
 CIE z: 0.1877  
 Peak Wavelength (nm): 590  
 Dominant Wavelength (nm): 580  
 Purity: 43.80166  
 Rf: 71.4  
 Rg: 96

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 70.1 |      |       |
| R1:       | 66.6 | R9:  | -40.2 |
| R2:       | 77.6 | R10: | 49.1  |
| R3:       | 88.5 | R11: | 66.3  |
| R4:       | 69.5 | R12: | 45.7  |
| R5:       | 66.4 | R13: | 68.0  |
| R6:       | 69.6 | R14: | 93.4  |
| R7:       | 77.5 | R15: | 57.6  |
| R8:       | 44.9 |      |       |



**Test Conditions**

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

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

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3500K 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    | 119                      | NR            | 620    | 778                      | NR            | 750    | 19                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 173                      | NR            | 625    | 711                      | NR            | 755    | 16                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 239                      | NR            | 630    | 648                      | NR            | 760    | 14                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 313                      | NR            | 635    | 582                      | NR            | 765    | 12                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 383                      | NR            | 640    | 520                      | NR            | 770    | 11                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 448                      | NR            | 645    | 460                      | NR            | 775    | 9                        | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 500                      | NR            | 650    | 406                      | NR            | 780    | 8                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 539                      | NR            | 655    | 355                      | NR            | 785    | 7                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 575                      | NR            | 660    | 309                      | NR            | 790    | 6                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 606                      | NR            | 665    | 269                      | NR            | 795    | 5                        | NR            | 925    | 0                        | NR            |
| 410    | 22                       | NR            | 540    | 633                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 45                       | NR            | 545    | 666                      | NR            | 675    | 199                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 96                       | NR            | 550    | 701                      | NR            | 680    | 171                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 193                      | NR            | 555    | 743                      | NR            | 685    | 147                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 341                      | NR            | 560    | 788                      | NR            | 690    | 126                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 547                      | NR            | 565    | 837                      | NR            | 695    | 107                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 799                      | NR            | 570    | 887                      | NR            | 700    | 92                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 831                      | NR            | 575    | 931                      | NR            | 705    | 78                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 461                      | NR            | 580    | 967                      | NR            | 710    | 67                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 256                      | NR            | 585    | 990                      | NR            | 715    | 57                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 176                      | NR            | 590    | 1000                     | NR            | 720    | 49                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 994                      | NR            | 725    | 42                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 74                       | NR            | 600    | 973                      | NR            | 730    | 36                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 67                       | NR            | 605    | 938                      | NR            | 735    | 31                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 68                       | NR            | 610    | 892                      | NR            | 740    | 26                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 84                       | NR            | 615    | 838                      | NR            | 745    | 22                       | NR            | 875    | 1                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.29**

| $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360            | 0                        | NR                   | 490            | 119                      | NR                   | 620            | 778                      | NR                   | 750            | 19                       | NR                   | 880            | 1                        | NR                   |
| 365            | 0                        | NR                   | 495            | 173                      | NR                   | 625            | 711                      | NR                   | 755            | 16                       | NR                   | 885            | 0                        | NR                   |
| 370            | 0                        | NR                   | 500            | 239                      | NR                   | 630            | 648                      | NR                   | 760            | 14                       | NR                   | 890            | 0                        | NR                   |
| 375            | 0                        | NR                   | 505            | 313                      | NR                   | 635            | 582                      | NR                   | 765            | 12                       | NR                   | 895            | 0                        | NR                   |
| 380            | 0                        | NR                   | 510            | 383                      | NR                   | 640            | 520                      | NR                   | 770            | 11                       | NR                   | 900            | 0                        | NR                   |
| 385            | 0                        | NR                   | 515            | 448                      | NR                   | 645            | 460                      | NR                   | 775            | 9                        | NR                   | 905            | 0                        | NR                   |
| 390            | 2                        | NR                   | 520            | 500                      | NR                   | 650            | 406                      | NR                   | 780            | 8                        | NR                   | 910            | 0                        | NR                   |
| 395            | 4                        | NR                   | 525            | 539                      | NR                   | 655            | 355                      | NR                   | 785            | 7                        | NR                   | 915            | 0                        | NR                   |
| 400            | 6                        | NR                   | 530            | 575                      | NR                   | 660            | 309                      | NR                   | 790            | 6                        | NR                   | 920            | 0                        | NR                   |
| 405            | 11                       | NR                   | 535            | 606                      | NR                   | 665            | 269                      | NR                   | 795            | 5                        | NR                   | 925            | 0                        | NR                   |
| 410            | 22                       | NR                   | 540            | 633                      | NR                   | 670            | 231                      | NR                   | 800            | 4                        | NR                   | 930            | 0                        | NR                   |
| 415            | 45                       | NR                   | 545            | 666                      | NR                   | 675            | 199                      | NR                   | 805            | 4                        | NR                   | 935            | 0                        | NR                   |
| 420            | 96                       | NR                   | 550            | 701                      | NR                   | 680            | 171                      | NR                   | 810            | 3                        | NR                   | 940            | 0                        | NR                   |
| 425            | 193                      | NR                   | 555            | 743                      | NR                   | 685            | 147                      | NR                   | 815            | 3                        | NR                   | 945            | 0                        | NR                   |
| 430            | 341                      | NR                   | 560            | 788                      | NR                   | 690            | 126                      | NR                   | 820            | 3                        | NR                   | 950            | 0                        | NR                   |
| 435            | 547                      | NR                   | 565            | 837                      | NR                   | 695            | 107                      | NR                   | 825            | 2                        | NR                   | 955            | 0                        | NR                   |
| 440            | 799                      | NR                   | 570            | 887                      | NR                   | 700            | 92                       | NR                   | 830            | 2                        | NR                   | 960            | 0                        | NR                   |
| 445            | 831                      | NR                   | 575            | 931                      | NR                   | 705            | 78                       | NR                   | 835            | 2                        | NR                   | 965            | 0                        | NR                   |
| 450            | 461                      | NR                   | 580            | 967                      | NR                   | 710            | 67                       | NR                   | 840            | 2                        | NR                   | 970            | 0                        | NR                   |
| 455            | 256                      | NR                   | 585            | 990                      | NR                   | 715            | 57                       | NR                   | 845            | 1                        | NR                   | 975            | 0                        | NR                   |
| 460            | 176                      | NR                   | 590            | 1000                     | NR                   | 720            | 49                       | NR                   | 850            | 1                        | NR                   | 980            | 0                        | NR                   |
| 465            | 107                      | NR                   | 595            | 994                      | NR                   | 725            | 42                       | NR                   | 855            | 1                        | NR                   | 985            | 0                        | NR                   |
| 470            | 74                       | NR                   | 600            | 973                      | NR                   | 730            | 36                       | NR                   | 860            | 1                        | NR                   | 990            | 0                        | NR                   |
| 475            | 67                       | NR                   | 605            | 938                      | NR                   | 735            | 31                       | NR                   | 865            | 1                        | NR                   | 995            | 0                        | NR                   |
| 480            | 68                       | NR                   | 610            | 892                      | NR                   | 740            | 26                       | NR                   | 870            | 1                        | NR                   | 1000           | 0                        | NR                   |
| 485            | 84                       | NR                   | 615            | 838                      | NR                   | 745            | 22                       | NR                   | 875            | 1                        | NR                   |                |                          |                      |

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.36

| 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    | 119                      | NR            | 620    | 778                      | NR            | 750    | 19                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 173                      | NR            | 625    | 711                      | NR            | 755    | 16                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 239                      | NR            | 630    | 648                      | NR            | 760    | 14                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 313                      | NR            | 635    | 582                      | NR            | 765    | 12                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 383                      | NR            | 640    | 520                      | NR            | 770    | 11                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 448                      | NR            | 645    | 460                      | NR            | 775    | 9                        | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 500                      | NR            | 650    | 406                      | NR            | 780    | 8                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 539                      | NR            | 655    | 355                      | NR            | 785    | 7                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 575                      | NR            | 660    | 309                      | NR            | 790    | 6                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 606                      | NR            | 665    | 269                      | NR            | 795    | 5                        | NR            | 925    | 0                        | NR            |
| 410    | 22                       | NR            | 540    | 633                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 45                       | NR            | 545    | 666                      | NR            | 675    | 199                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 96                       | NR            | 550    | 701                      | NR            | 680    | 171                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 193                      | NR            | 555    | 743                      | NR            | 685    | 147                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 341                      | NR            | 560    | 788                      | NR            | 690    | 126                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 547                      | NR            | 565    | 837                      | NR            | 695    | 107                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 799                      | NR            | 570    | 887                      | NR            | 700    | 92                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 831                      | NR            | 575    | 931                      | NR            | 705    | 78                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 461                      | NR            | 580    | 967                      | NR            | 710    | 67                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 256                      | NR            | 585    | 990                      | NR            | 715    | 57                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 176                      | NR            | 590    | 1000                     | NR            | 720    | 49                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 994                      | NR            | 725    | 42                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 74                       | NR            | 600    | 973                      | NR            | 730    | 36                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 67                       | NR            | 605    | 938                      | NR            | 735    | 31                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 68                       | NR            | 610    | 892                      | NR            | 740    | 26                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 84                       | NR            | 615    | 838                      | NR            | 745    | 22                       | NR            | 875    | 1                        | NR            |        |                          |               |

**Summary**

$R_f = 71.4$   
 $R_g = 96$   
 $CIE R_a = 70.1$   
 $R_9 = -40.2$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 57 | CES51 = 84 | CES76 = 50 |
| CES02 = 62 | CES27 = 80 | CES52 = 86 | CES77 = 74 |
| CES03 = 31 | CES28 = 81 | CES53 = 72 | CES78 = 54 |
| CES04 = 70 | CES29 = 50 | CES54 = 79 | CES79 = 81 |
| CES05 = 48 | CES30 = 55 | CES55 = 78 | CES80 = 79 |
| CES06 = 51 | CES31 = 56 | CES56 = 67 | CES81 = 74 |
| CES07 = 40 | CES32 = 54 | CES57 = 65 | CES82 = 91 |
| CES08 = 39 | CES33 = 60 | CES58 = 68 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 85 | CES84 = 89 |
| CES10 = 75 | CES35 = 83 | CES60 = 91 | CES85 = 83 |
| CES11 = 58 | CES36 = 88 | CES61 = 85 | CES86 = 66 |
| CES12 = 64 | CES37 = 78 | CES62 = 78 | CES87 = 77 |
| CES13 = 43 | CES38 = 64 | CES63 = 71 | CES88 = 75 |
| CES14 = 74 | CES39 = 92 | CES64 = 70 | CES89 = 68 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 72 |
| CES16 = 47 | CES41 = 81 | CES66 = 65 | CES91 = 95 |
| CES17 = 50 | CES42 = 79 | CES67 = 63 | CES92 = 62 |
| CES18 = 56 | CES43 = 71 | CES68 = 69 | CES93 = 78 |
| CES19 = 72 | CES44 = 98 | CES69 = 80 | CES94 = 51 |
| CES20 = 65 | CES45 = 80 | CES70 = 60 | CES95 = 70 |
| CES21 = 87 | CES46 = 75 | CES71 = 58 | CES96 = 76 |
| CES22 = 79 | CES47 = 71 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 61 | CES73 = 51 | CES98 = 72 |
| CES24 = 91 | CES49 = 74 | CES74 = 94 | CES99 = 60 |
| CES25 = 72 | CES50 = 83 | CES75 = 57 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)