

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: P1047107

Luminaire Tested: **GALN-SA6C-727-U-T3BC**

Issue Date: 07/10/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1047107  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 07/10/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GALN-SA6C-727-U-T3BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 6xLight Square PACKAGE  
70CRI 2700K FIXTURE w/ TYPE III ANGLED BACKLIGHT CONTROL  
Light Source: (84) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 31605.3 lumens  
Efficiency: N/A  
Efficacy: 111.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 282.5  
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

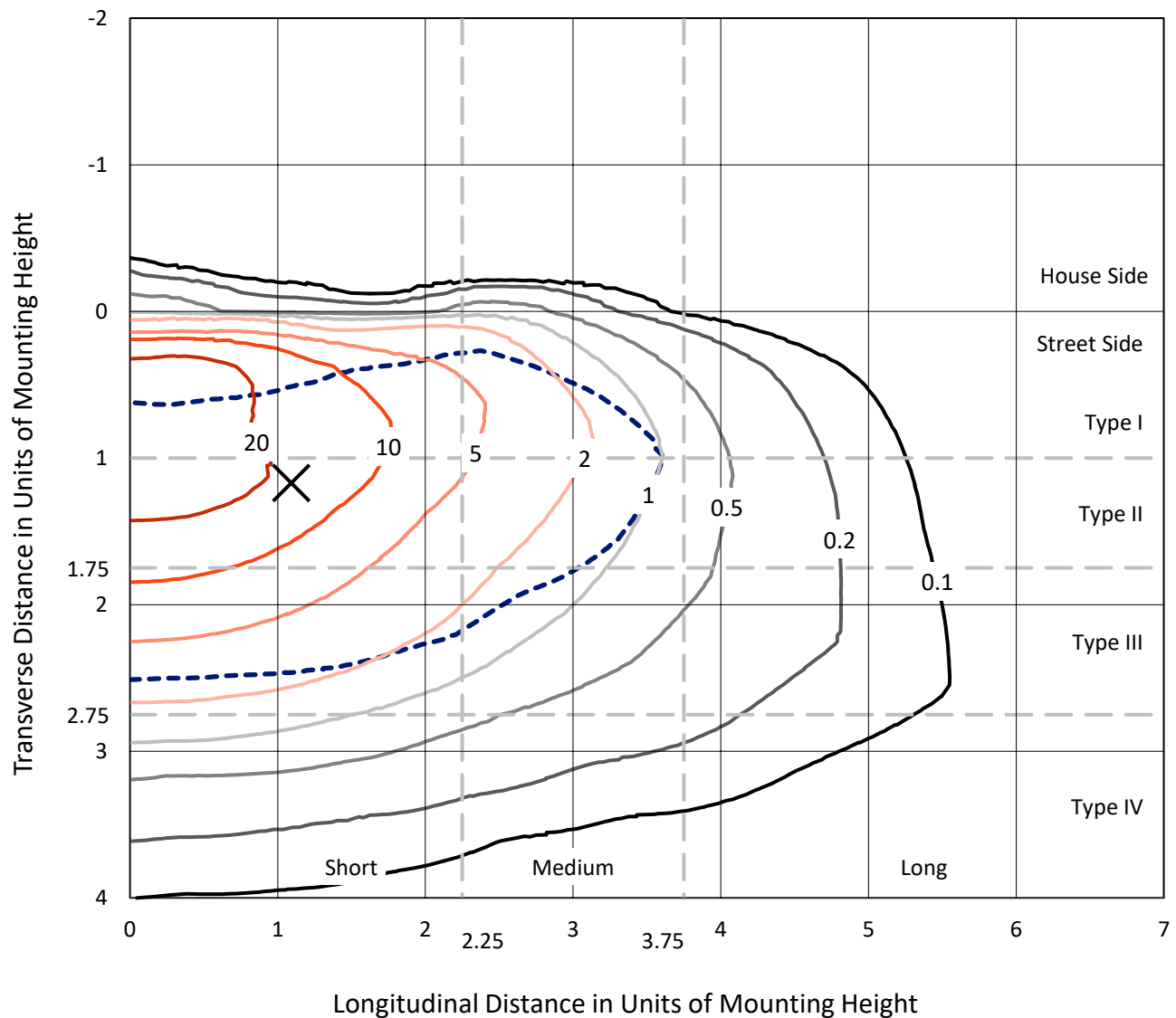


REPORT NUMBER: P1047107

CATALOG NUMBER: GALN-SA6C-727-U-T3BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

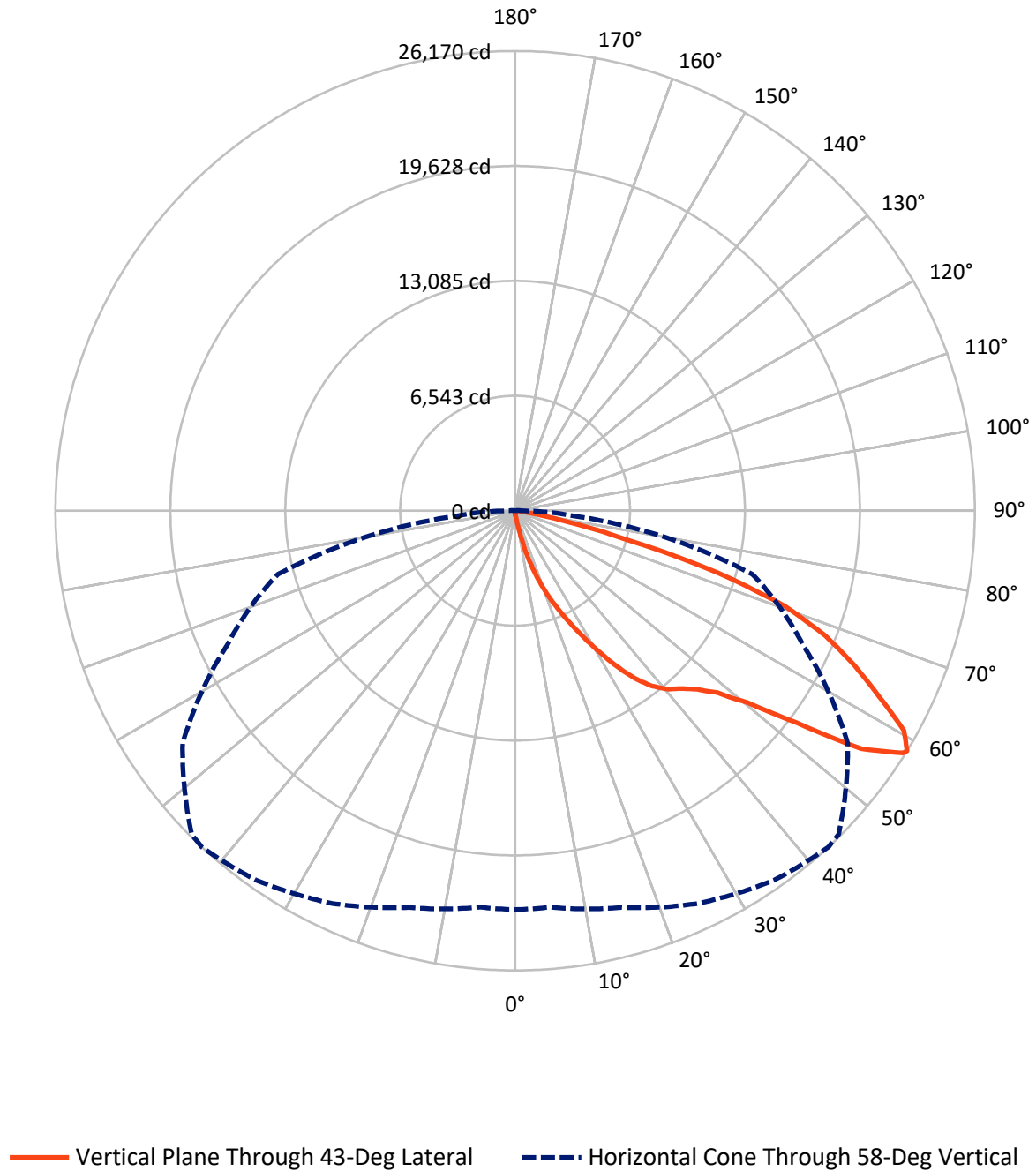


Based on 15 foot mounting height. Maximum calculated value = 35.5 fc  
 Type III - Short - N/A

REPORT NUMBER: P1047107

CATALOG NUMBER: GALN-SA6C-727-U-T3BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1047107

CATALOG NUMBER: GALN-SA6C-727-U-T3BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 115.4    | 0.0    | 115.4   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 31489.9  | 0.0    | 31489.9 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 31605.3  | 0.0    | 31605.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 30.3    | 0.1       |
| 10°-20°   | 363.3   | 1.1       |
| 20°-30°   | 1309.4  | 4.1       |
| 30°-40°   | 2996.0  | 9.5       |
| 40°-50°   | 5053.1  | 16.0      |
| 50°-60°   | 8338.7  | 26.4      |
| 60°-70°   | 9319.7  | 29.5      |
| 70°-80°   | 3847.9  | 12.2      |
| 80°-90°   | 346.9   | 1.1       |
| 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°    | 31605.3 | 100.0     |
| 0°-180°   | 31605.3 | 100.0     |



REPORT NUMBER: P1047107

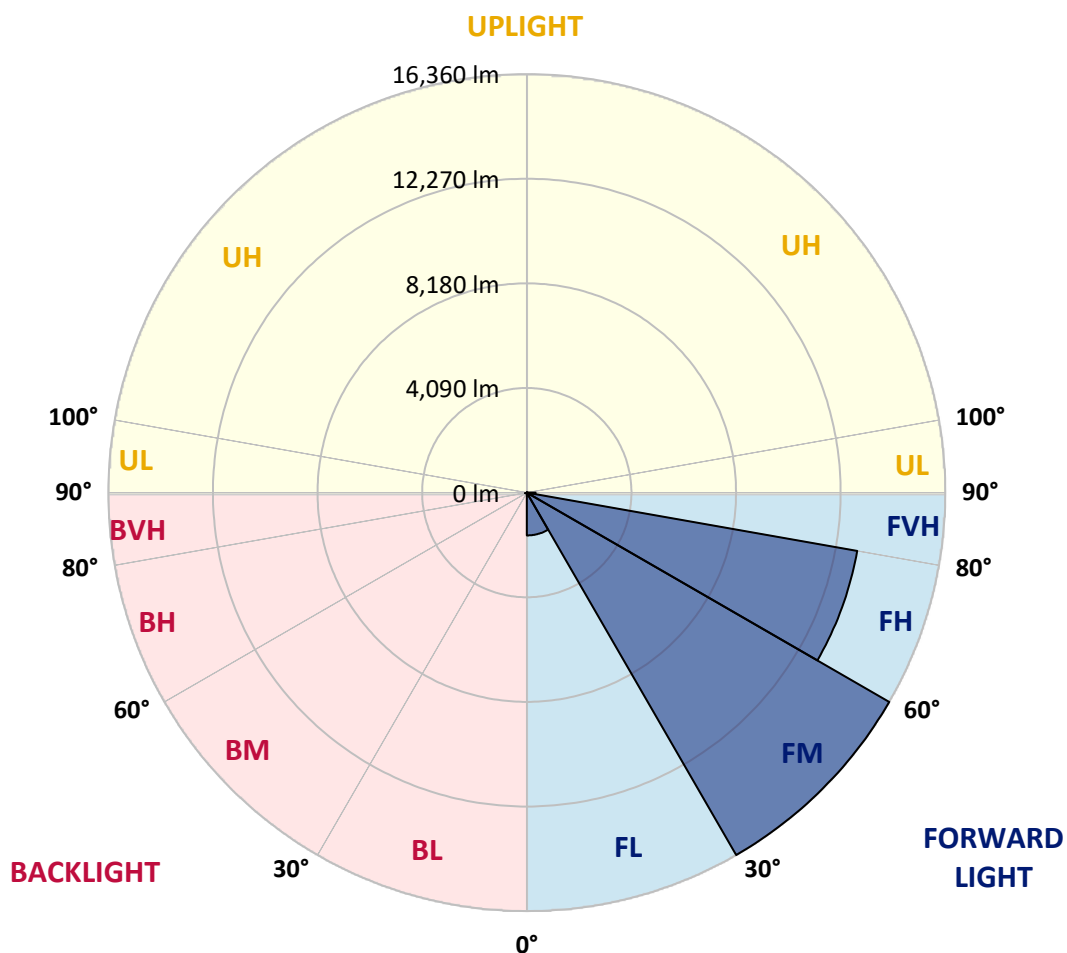
CATALOG NUMBER: GALN-SA6C-727-U-T3BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|---------|-----------|-------------------------|------|--------|
|      |             |         |           | B                       | U    | G      |
| FL   | (0°-30°)    | 1672.9  | 5.3       |                         |      |        |
| FM   | (30°-60°)   | 16360.1 | 51.8      |                         |      |        |
| FH   | (60°-80°)   | 13114.7 | 41.5      |                         |      | G5     |
| FVH  | (80°-90°)   | 342.1   | 1.1       |                         |      | G3/500 |
| BL   | (0°-30°)    | 30.1    | 0.1       | B0/110                  |      |        |
| BM   | (30°-60°)   | 27.7    | 0.1       | B0/220                  |      |        |
| BH   | (60°-80°)   | 52.9    | 0.2       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 4.8     | 0.0       |                         |      | G0/10  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |        |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |        |

**BUG Rating: B0-U0-G5**

Type III Short



REPORT NUMBER: P1047107

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 43°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   | 206.7   |
| 2.5°  | 248.0   | 256.2   | 248.0   | 248.0   | 248.0   | 239.7   | 239.7   | 231.5   | 231.5   | 223.2   | 214.9   |
| 5°    | 363.7   | 363.7   | 338.9   | 322.4   | 305.8   | 297.6   | 289.3   | 272.8   | 256.2   | 239.7   | 223.2   |
| 7.5°  | 810.1   | 810.1   | 735.7   | 636.5   | 504.2   | 429.8   | 413.3   | 338.9   | 289.3   | 256.2   | 223.2   |
| 10°   | 1934.3  | 1934.3  | 1768.9  | 1496.2  | 1157.3  | 859.7   | 768.7   | 487.7   | 347.2   | 272.8   | 231.5   |
| 12.5° | 3215.5  | 3256.8  | 3050.2  | 2703.0  | 2198.8  | 1678.0  | 1496.2  | 892.7   | 462.9   | 297.6   | 231.5   |
| 15°   | 4364.5  | 4265.3  | 4207.4  | 3876.8  | 3397.4  | 2777.4  | 2546.0  | 1504.4  | 669.6   | 338.9   | 231.5   |
| 17.5° | 5141.5  | 5141.5  | 5058.8  | 4835.7  | 4397.6  | 3852.0  | 3661.9  | 2430.2  | 1082.9  | 388.5   | 239.7   |
| 20°   | 6050.8  | 6050.8  | 5902.0  | 5744.9  | 5356.4  | 4893.5  | 4711.7  | 3455.2  | 1678.0  | 496.0   | 239.7   |
| 22.5° | 7150.2  | 7166.7  | 7001.4  | 6720.3  | 6348.3  | 5835.8  | 5678.8  | 4405.8  | 2430.2  | 661.3   | 248.0   |
| 25°   | 8489.3  | 8505.8  | 8266.1  | 8001.6  | 7431.2  | 6877.4  | 6637.7  | 5496.9  | 3347.8  | 925.8   | 248.0   |
| 27.5° | 9968.9  | 10084.6 | 9729.2  | 9274.5  | 8671.1  | 7976.8  | 7794.9  | 6480.6  | 4257.0  | 1306.0  | 264.5   |
| 30°   | 11812.2 | 11812.2 | 11341.1 | 10704.6 | 10051.5 | 9191.9  | 8960.4  | 7513.9  | 5224.2  | 1810.3  | 281.0   |
| 32.5° | 13399.3 | 13275.3 | 12671.9 | 12002.3 | 11308.0 | 10506.2 | 10258.2 | 8596.7  | 6216.1  | 2438.5  | 314.1   |
| 35°   | 14614.4 | 14507.0 | 13763.0 | 13043.9 | 12440.4 | 11704.8 | 11407.2 | 9770.5  | 7265.9  | 3149.4  | 363.7   |
| 37.5° | 15655.9 | 15614.6 | 14606.2 | 13705.2 | 13308.4 | 12663.6 | 12399.1 | 10878.2 | 8299.1  | 3918.1  | 421.6   |
| 40°   | 16796.7 | 16664.4 | 15589.8 | 14473.9 | 13878.7 | 13358.0 | 13118.3 | 11770.9 | 9291.1  | 4819.1  | 504.2   |
| 42.5° | 17772.1 | 17615.0 | 16647.9 | 15556.8 | 14540.0 | 13837.4 | 13606.0 | 12523.1 | 10258.2 | 5720.1  | 611.7   |
| 45°   | 18854.9 | 18772.3 | 17796.9 | 16970.3 | 15614.6 | 14490.4 | 14184.6 | 13126.5 | 11142.7 | 6794.7  | 752.2   |
| 47.5° | 20483.3 | 20334.5 | 19425.3 | 18747.5 | 17176.9 | 15482.4 | 15044.3 | 13746.5 | 11994.1 | 7852.8  | 967.1   |
| 50°   | 22376.3 | 22277.1 | 21739.8 | 21202.5 | 19640.2 | 17176.9 | 16656.1 | 14639.2 | 12944.7 | 9109.2  | 1248.2  |
| 52.5° | 23922.0 | 23905.5 | 23971.6 | 23979.9 | 22797.8 | 20028.7 | 19251.7 | 16077.5 | 14035.8 | 10349.1 | 1644.9  |
| 55°   | 23889.0 | 23963.4 | 24690.8 | 25525.6 | 25616.6 | 23922.0 | 23169.8 | 18499.5 | 15457.6 | 11878.3 | 2198.8  |
| 57.5° | 22996.2 | 22938.4 | 23707.1 | 24963.5 | 25848.0 | 26029.9 | 25905.9 | 22260.5 | 17598.5 | 13721.7 | 3050.2  |
| 58°   | 22706.9 | 22657.3 | 23384.7 | 24666.0 | 25682.7 | 26170.4 | 26046.4 | 23111.9 | 18077.9 | 13986.2 | 3281.6  |
| 60°   | 21657.1 | 21665.4 | 22095.2 | 23260.7 | 24277.5 | 25434.7 | 25550.4 | 25542.2 | 20466.8 | 15755.1 | 4447.1  |
| 62.5° | 20268.4 | 20202.3 | 20599.1 | 21549.7 | 22442.4 | 23219.4 | 23417.8 | 25707.5 | 23963.4 | 18003.5 | 6670.7  |
| 65°   | 18350.7 | 18251.5 | 18673.1 | 19747.7 | 20706.5 | 21210.7 | 21219.0 | 23492.2 | 25608.3 | 20417.2 | 9844.9  |
| 67.5° | 14788.0 | 14705.3 | 15548.5 | 16928.9 | 18408.5 | 19069.8 | 19367.4 | 20384.1 | 24219.6 | 22053.9 | 11663.4 |
| 70°   | 9059.6  | 9233.2  | 10407.0 | 12572.7 | 15102.1 | 16317.2 | 16763.6 | 17077.7 | 20623.9 | 21805.9 | 9754.0  |
| 72.5° | 4182.6  | 3976.0  | 4976.2  | 6488.9  | 9373.7  | 12076.7 | 12539.6 | 13771.3 | 16350.3 | 18929.3 | 7274.1  |
| 75°   | 1950.8  | 1876.4  | 2107.8  | 2835.3  | 4248.8  | 6521.9  | 7365.1  | 10993.9 | 12539.6 | 13167.9 | 5249.0  |
| 77.5° | 1000.2  | 1008.5  | 1198.6  | 1289.5  | 1752.4  | 3017.1  | 3463.5  | 7232.8  | 9191.9  | 7348.5  | 3521.3  |
| 80°   | 438.1   | 454.6   | 462.9   | 504.2   | 710.9   | 1165.5  | 1314.3  | 3356.0  | 6282.2  | 3744.5  | 1926.0  |
| 82.5° | 281.0   | 289.3   | 289.3   | 289.3   | 338.9   | 462.9   | 529.0   | 1347.4  | 3132.8  | 1859.9  | 595.2   |
| 85°   | 148.8   | 148.8   | 165.3   | 206.7   | 239.7   | 281.0   | 297.6   | 429.8   | 1033.3  | 553.8   | 140.5   |
| 87.5° | 82.7    | 90.9    | 99.2    | 124.0   | 157.1   | 190.1   | 206.7   | 297.6   | 396.8   | 380.2   | 33.1    |
| 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: P1047107

CATALOG NUMBER: GALN-SA6C-727-U-T3BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 206.7  | 206.7 | 206.7 | 206.7 | 206.7 | 206.7 | 206.7 | 206.7 | 206.7 | 206.7 | 206.7 |
| 2.5°  | 214.9  | 206.7 | 198.4 | 190.1 | 181.9 | 173.6 | 173.6 | 173.6 | 173.6 | 173.6 | 173.6 |
| 5°    | 206.7  | 198.4 | 190.1 | 173.6 | 157.1 | 148.8 | 140.5 | 132.3 | 132.3 | 132.3 | 132.3 |
| 7.5°  | 206.7  | 198.4 | 173.6 | 157.1 | 140.5 | 124.0 | 107.5 | 107.5 | 107.5 | 107.5 | 107.5 |
| 10°   | 206.7  | 190.1 | 165.3 | 140.5 | 115.7 | 99.2  | 90.9  | 82.7  | 82.7  | 82.7  | 82.7  |
| 12.5° | 206.7  | 181.9 | 157.1 | 124.0 | 99.2  | 82.7  | 74.4  | 66.1  | 66.1  | 66.1  | 66.1  |
| 15°   | 206.7  | 181.9 | 148.8 | 115.7 | 90.9  | 66.1  | 57.9  | 49.6  | 49.6  | 49.6  | 49.6  |
| 17.5° | 198.4  | 173.6 | 140.5 | 99.2  | 74.4  | 49.6  | 41.3  | 33.1  | 33.1  | 41.3  | 41.3  |
| 20°   | 190.1  | 165.3 | 124.0 | 82.7  | 57.9  | 41.3  | 24.8  | 24.8  | 24.8  | 24.8  | 24.8  |
| 22.5° | 190.1  | 165.3 | 115.7 | 74.4  | 49.6  | 24.8  | 16.5  | 16.5  | 16.5  | 16.5  | 24.8  |
| 25°   | 190.1  | 157.1 | 99.2  | 57.9  | 33.1  | 16.5  | 8.3   | 8.3   | 8.3   | 8.3   | 8.3   |
| 27.5° | 190.1  | 157.1 | 90.9  | 49.6  | 24.8  | 16.5  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   |
| 30°   | 181.9  | 148.8 | 82.7  | 41.3  | 16.5  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 32.5° | 181.9  | 140.5 | 66.1  | 33.1  | 16.5  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 35°   | 190.1  | 132.3 | 57.9  | 24.8  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 8.3   |
| 37.5° | 198.4  | 124.0 | 49.6  | 16.5  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 206.7  | 115.7 | 49.6  | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 223.2  | 115.7 | 41.3  | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 239.7  | 115.7 | 33.1  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 272.8  | 124.0 | 33.1  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 297.6  | 132.3 | 24.8  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 330.6  | 124.0 | 24.8  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 372.0  | 124.0 | 24.8  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 405.0  | 115.7 | 24.8  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 58°   | 421.6  | 107.5 | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 504.2  | 99.2  | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 785.3  | 82.7  | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1595.4 | 74.4  | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2975.8 | 66.1  | 16.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 3331.2 | 74.4  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 2099.6 | 57.9  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1107.7 | 57.9  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 553.8  | 57.9  | 8.3   | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 256.2  | 41.3  | 8.3   | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 107.5  | 24.8  | 16.5  | 8.3   | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 49.6   | 24.8  | 16.5  | 16.5  | 8.3   | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 24.8   | 24.8  | 24.8  | 16.5  | 16.5  | 8.3   | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-727-U-5WQ

Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-3  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-727-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2700K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2672     | CRI (Ra): | 71.1 |      |       |
| CIE u':                   | 0.2638   | R1:       | 68.3 | R9:  | -27.8 |
| CIE v':                   | 0.5276   | R2:       | 79.8 | R10: | 54.4  |
| Duv:                      | -0.0002  | R3:       | 91.2 | R11: | 65.8  |
| CIE x:                    | 0.4619   | R4:       | 69.4 | R12: | 45.6  |
| CIE y:                    | 0.4106   | R5:       | 66.5 | R13: | 69.8  |
| CIE z:                    | 0.1275   | R6:       | 72.6 | R14: | 94.5  |
| Peak Wavelength (nm):     | 601      | R7:       | 77.0 | R15: | 60.1  |
| Dominant Wavelength (nm): | 584      | R8:       | 44.1 |      |       |
| Purity:                   | 61.88407 |           |      |      |       |
| Rf:                       | 67.9     |           |      |      |       |
| Rg:                       | 98.6     |           |      |      |       |



### Test Conditions

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

REPORT NUMBER: SP1-2407-184-3

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

REPORT NUMBER: SP1-2407-184-3

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-3

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 0                             | NR                             | 490               | 52                            | NR                             | 620               | 888                           | NR                             | 750               | 27                            | NR                             | 880               | 1                             | NR                             |
| 365               | 0                             | NR                             | 495               | 87                            | NR                             | 625               | 834                           | NR                             | 755               | 23                            | NR                             | 885               | 1                             | NR                             |
| 370               | 0                             | NR                             | 500               | 135                           | NR                             | 630               | 776                           | NR                             | 760               | 20                            | NR                             | 890               | 1                             | NR                             |
| 375               | 0                             | NR                             | 505               | 196                           | NR                             | 635               | 712                           | NR                             | 765               | 17                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 258                           | NR                             | 640               | 648                           | NR                             | 770               | 15                            | NR                             | 900               | 0                             | NR                             |
| 385               | 1                             | NR                             | 515               | 317                           | NR                             | 645               | 583                           | NR                             | 775               | 12                            | NR                             | 905               | 0                             | NR                             |
| 390               | 2                             | NR                             | 520               | 368                           | NR                             | 650               | 523                           | NR                             | 780               | 11                            | NR                             | 910               | 0                             | NR                             |
| 395               | 4                             | NR                             | 525               | 408                           | NR                             | 655               | 465                           | NR                             | 785               | 9                             | NR                             | 915               | 0                             | NR                             |
| 400               | 6                             | NR                             | 530               | 443                           | NR                             | 660               | 410                           | NR                             | 790               | 8                             | NR                             | 920               | 0                             | NR                             |
| 405               | 11                            | NR                             | 535               | 473                           | NR                             | 665               | 360                           | NR                             | 795               | 7                             | NR                             | 925               | 0                             | NR                             |
| 410               | 23                            | NR                             | 540               | 498                           | NR                             | 670               | 313                           | NR                             | 800               | 6                             | NR                             | 930               | 0                             | NR                             |
| 415               | 51                            | NR                             | 545               | 530                           | NR                             | 675               | 272                           | NR                             | 805               | 5                             | NR                             | 935               | 0                             | NR                             |
| 420               | 111                           | NR                             | 550               | 563                           | NR                             | 680               | 236                           | NR                             | 810               | 4                             | NR                             | 940               | 0                             | NR                             |
| 425               | 214                           | NR                             | 555               | 605                           | NR                             | 685               | 203                           | NR                             | 815               | 4                             | NR                             | 945               | 0                             | NR                             |
| 430               | 339                           | NR                             | 560               | 651                           | NR                             | 690               | 175                           | NR                             | 820               | 3                             | NR                             | 950               | 0                             | NR                             |
| 435               | 467                           | NR                             | 565               | 705                           | NR                             | 695               | 150                           | NR                             | 825               | 3                             | NR                             | 955               | 0                             | NR                             |
| 440               | 535                           | NR                             | 570               | 765                           | NR                             | 700               | 128                           | NR                             | 830               | 3                             | NR                             | 960               | 0                             | NR                             |
| 445               | 372                           | NR                             | 575               | 824                           | NR                             | 705               | 110                           | NR                             | 835               | 2                             | NR                             | 965               | 0                             | NR                             |
| 450               | 160                           | NR                             | 580               | 882                           | NR                             | 710               | 94                            | NR                             | 840               | 2                             | NR                             | 970               | 0                             | NR                             |
| 455               | 89                            | NR                             | 585               | 930                           | NR                             | 715               | 80                            | NR                             | 845               | 2                             | NR                             | 975               | 0                             | NR                             |
| 460               | 53                            | NR                             | 590               | 968                           | NR                             | 720               | 69                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 31                            | NR                             | 595               | 991                           | NR                             | 725               | 59                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 23                            | NR                             | 600               | 999                           | NR                             | 730               | 50                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 21                            | NR                             | 605               | 992                           | NR                             | 735               | 43                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 23                            | NR                             | 610               | 969                           | NR                             | 740               | 36                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 32                            | NR                             | 615               | 935                           | NR                             | 745               | 31                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

REPORT NUMBER: SP1-2407-184-3

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.02

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 52                          | NR               | 620       | 888                         | NR               | 750       | 27                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 87                          | NR               | 625       | 834                         | NR               | 755       | 23                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 135                         | NR               | 630       | 776                         | NR               | 760       | 20                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 196                         | NR               | 635       | 712                         | NR               | 765       | 17                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 258                         | NR               | 640       | 648                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 317                         | NR               | 645       | 583                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 368                         | NR               | 650       | 523                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 408                         | NR               | 655       | 465                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 443                         | NR               | 660       | 410                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 11                          | NR               | 535       | 473                         | NR               | 665       | 360                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 23                          | NR               | 540       | 498                         | NR               | 670       | 313                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 51                          | NR               | 545       | 530                         | NR               | 675       | 272                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 111                         | NR               | 550       | 563                         | NR               | 680       | 236                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 214                         | NR               | 555       | 605                         | NR               | 685       | 203                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 339                         | NR               | 560       | 651                         | NR               | 690       | 175                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 467                         | NR               | 565       | 705                         | NR               | 695       | 150                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 535                         | NR               | 570       | 765                         | NR               | 700       | 128                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 372                         | NR               | 575       | 824                         | NR               | 705       | 110                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 160                         | NR               | 580       | 882                         | NR               | 710       | 94                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 89                          | NR               | 585       | 930                         | NR               | 715       | 80                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 53                          | NR               | 590       | 968                         | NR               | 720       | 69                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 31                          | NR               | 595       | 991                         | NR               | 725       | 59                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 999                         | NR               | 730       | 50                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 21                          | NR               | 605       | 992                         | NR               | 735       | 43                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 23                          | NR               | 610       | 969                         | NR               | 740       | 36                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 32                          | NR               | 615       | 935                         | NR               | 745       | 31                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-3

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.71

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 52                          | NR               | 620       | 888                         | NR               | 750       | 27                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 87                          | NR               | 625       | 834                         | NR               | 755       | 23                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 135                         | NR               | 630       | 776                         | NR               | 760       | 20                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 196                         | NR               | 635       | 712                         | NR               | 765       | 17                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 258                         | NR               | 640       | 648                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 317                         | NR               | 645       | 583                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 368                         | NR               | 650       | 523                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 408                         | NR               | 655       | 465                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 443                         | NR               | 660       | 410                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 11                          | NR               | 535       | 473                         | NR               | 665       | 360                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 23                          | NR               | 540       | 498                         | NR               | 670       | 313                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 51                          | NR               | 545       | 530                         | NR               | 675       | 272                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 111                         | NR               | 550       | 563                         | NR               | 680       | 236                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 214                         | NR               | 555       | 605                         | NR               | 685       | 203                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 339                         | NR               | 560       | 651                         | NR               | 690       | 175                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 467                         | NR               | 565       | 705                         | NR               | 695       | 150                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 535                         | NR               | 570       | 765                         | NR               | 700       | 128                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 372                         | NR               | 575       | 824                         | NR               | 705       | 110                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 160                         | NR               | 580       | 882                         | NR               | 710       | 94                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 89                          | NR               | 585       | 930                         | NR               | 715       | 80                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 53                          | NR               | 590       | 968                         | NR               | 720       | 69                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 31                          | NR               | 595       | 991                         | NR               | 725       | 59                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 999                         | NR               | 730       | 50                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 21                          | NR               | 605       | 992                         | NR               | 735       | 43                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 23                          | NR               | 610       | 969                         | NR               | 740       | 36                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 32                          | NR               | 615       | 935                         | NR               | 745       | 31                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-3

TM-30-18

### Summary

$R_f = 67.9$   
 $R_g = 98.6$   
 $CIE R_a = 71.1$   
 $R_g = -27.8$

### Spectral Power Distribution Comparison



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 52 | CES31 = 44 | CES56 = 60 | CES81 = 69 |
| CES07 = 42 | CES32 = 47 | CES57 = 54 | CES82 = 92 |
| CES08 = 41 | CES33 = 45 | CES58 = 59 | CES83 = 82 |
| CES09 = 29 | CES34 = 67 | CES59 = 85 | CES84 = 92 |
| CES10 = 77 | CES35 = 84 | CES60 = 86 | CES85 = 87 |
| CES11 = 60 | CES36 = 68 | CES61 = 86 | CES86 = 60 |
| CES12 = 66 | CES37 = 77 | CES62 = 59 | CES87 = 79 |
| CES13 = 44 | CES38 = 40 | CES63 = 66 | CES88 = 70 |
| CES14 = 74 | CES39 = 88 | CES64 = 69 | CES89 = 66 |
| CES15 = 72 | CES40 = 82 | CES65 = 64 | CES90 = 64 |
| CES16 = 48 | CES41 = 70 | CES66 = 65 | CES91 = 81 |
| CES17 = 51 | CES42 = 76 | CES67 = 64 | CES92 = 69 |
| CES18 = 57 | CES43 = 63 | CES68 = 73 | CES93 = 81 |
| CES19 = 73 | CES44 = 97 | CES69 = 83 | CES94 = 53 |
| CES20 = 67 | CES45 = 74 | CES70 = 64 | CES95 = 77 |
| CES21 = 88 | CES46 = 67 | CES71 = 60 | CES96 = 79 |
| CES22 = 80 | CES47 = 55 | CES72 = 87 | CES97 = 78 |
| CES23 = 92 | CES48 = 42 | CES73 = 57 | CES98 = 69 |
| CES24 = 92 | CES49 = 65 | CES74 = 84 | CES99 = 60 |
| CES25 = 73 | CES50 = 74 | CES75 = 60 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)