

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: P1048077

Luminaire Tested: **GALN-SA6A-927-U-T2BC**

Issue Date: 07/10/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1048077  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 07/10/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GALN-SA6A-927-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 6xLight Square PACKAGE  
90CRI 2700K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (84) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13291.4 lumens  
Efficiency: N/A  
Efficacy: 81.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 162.9  
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



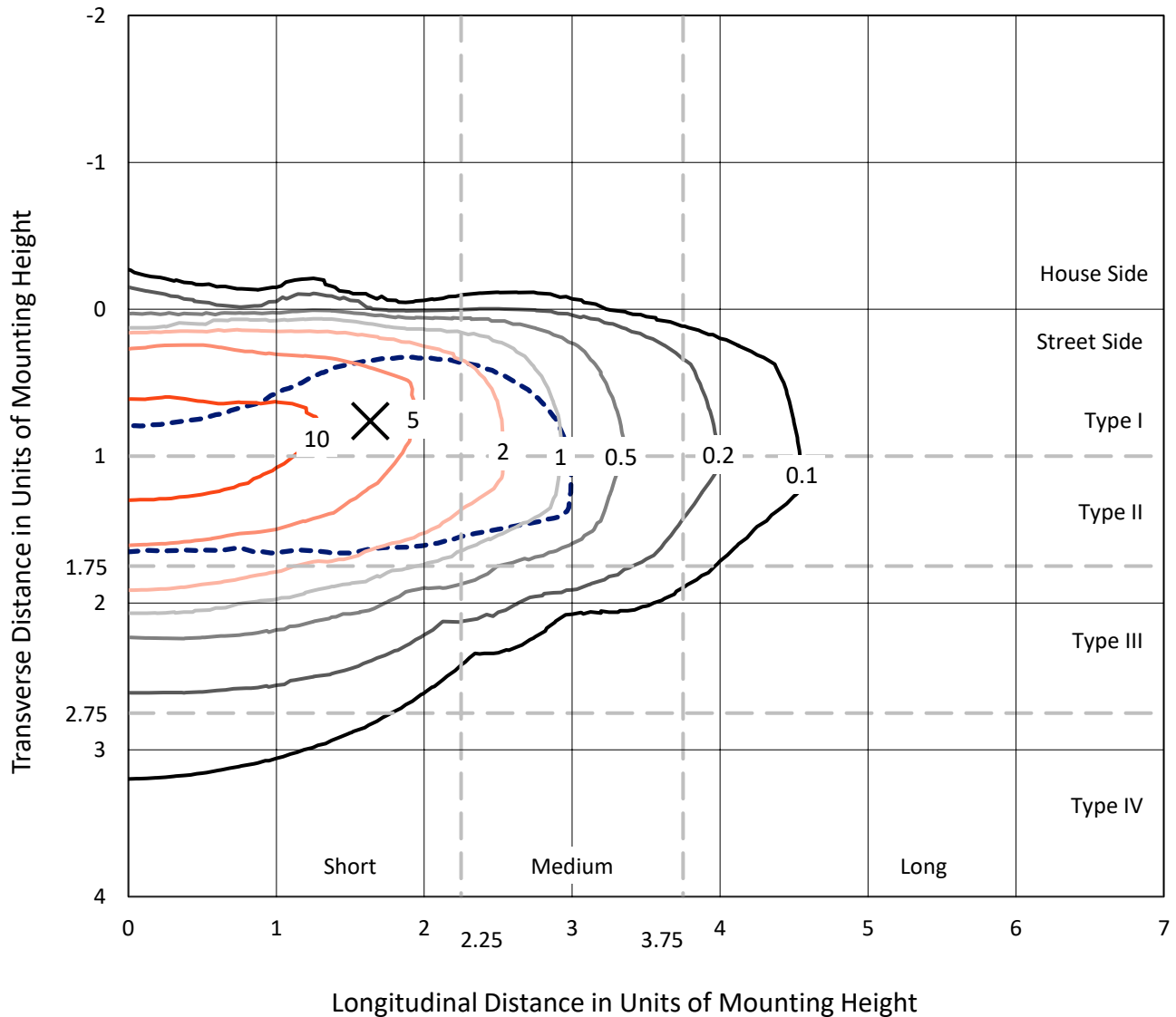
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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

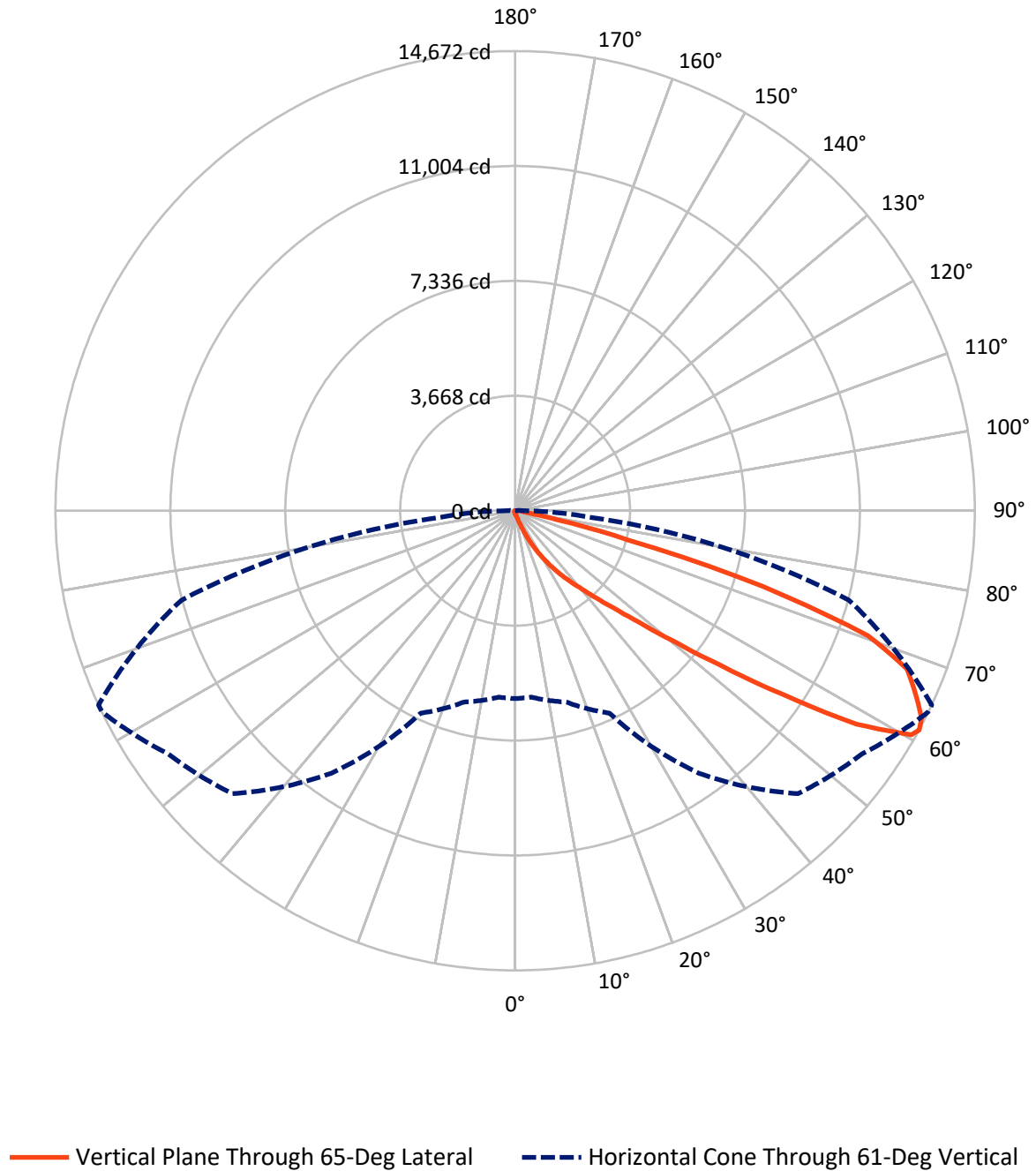


Based on 15 foot mounting height. Maximum calculated value = 17.6 fc  
 Type II - Short - N/A

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CATALOG NUMBER: GALN-SA6A-927-U-T2BC

## Luminous Intensity Polar Plot



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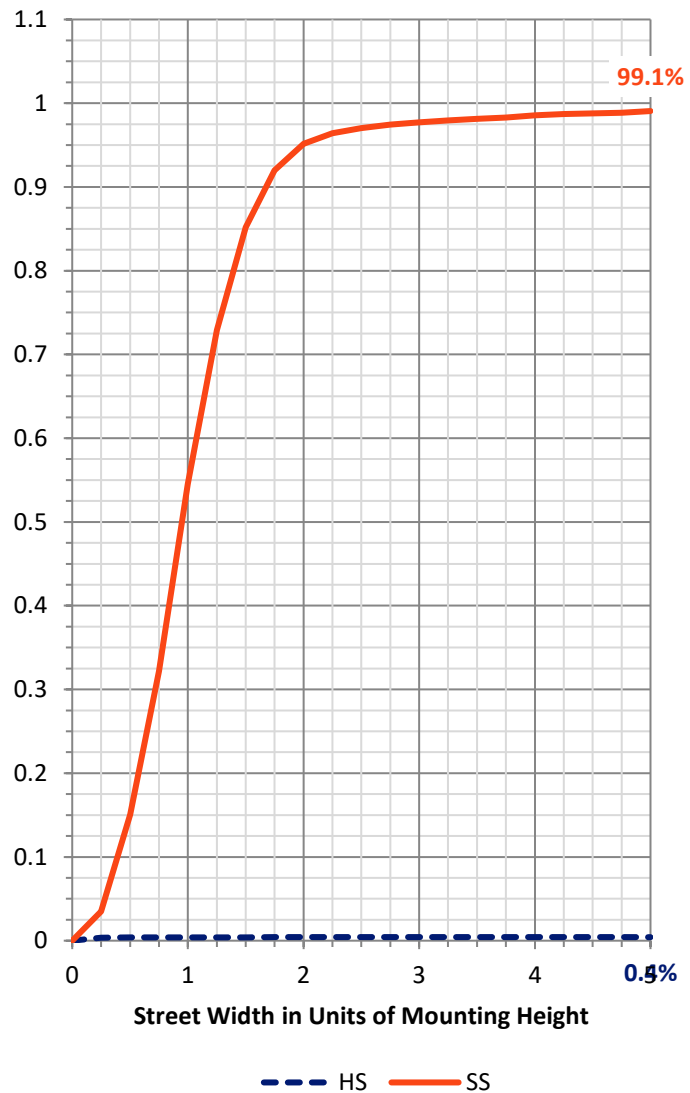
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 56.7     | 0.0    | 56.7    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 13234.6  | 0.0    | 13234.6 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 13291.4  | 0.0    | 13291.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 10.3    | 0.1       |
| 10°-20°   | 109.3   | 0.8       |
| 20°-30°   | 392.2   | 3.0       |
| 30°-40°   | 1044.3  | 7.9       |
| 40°-50°   | 2743.4  | 20.6      |
| 50°-60°   | 4250.1  | 32.0      |
| 60°-70°   | 3563.6  | 26.8      |
| 70°-80°   | 1048.7  | 7.9       |
| 80°-90°   | 129.4   | 1.0       |
| 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°    | 13291.4 | 100.0     |
| 0°-180°   | 13291.4 | 100.0     |



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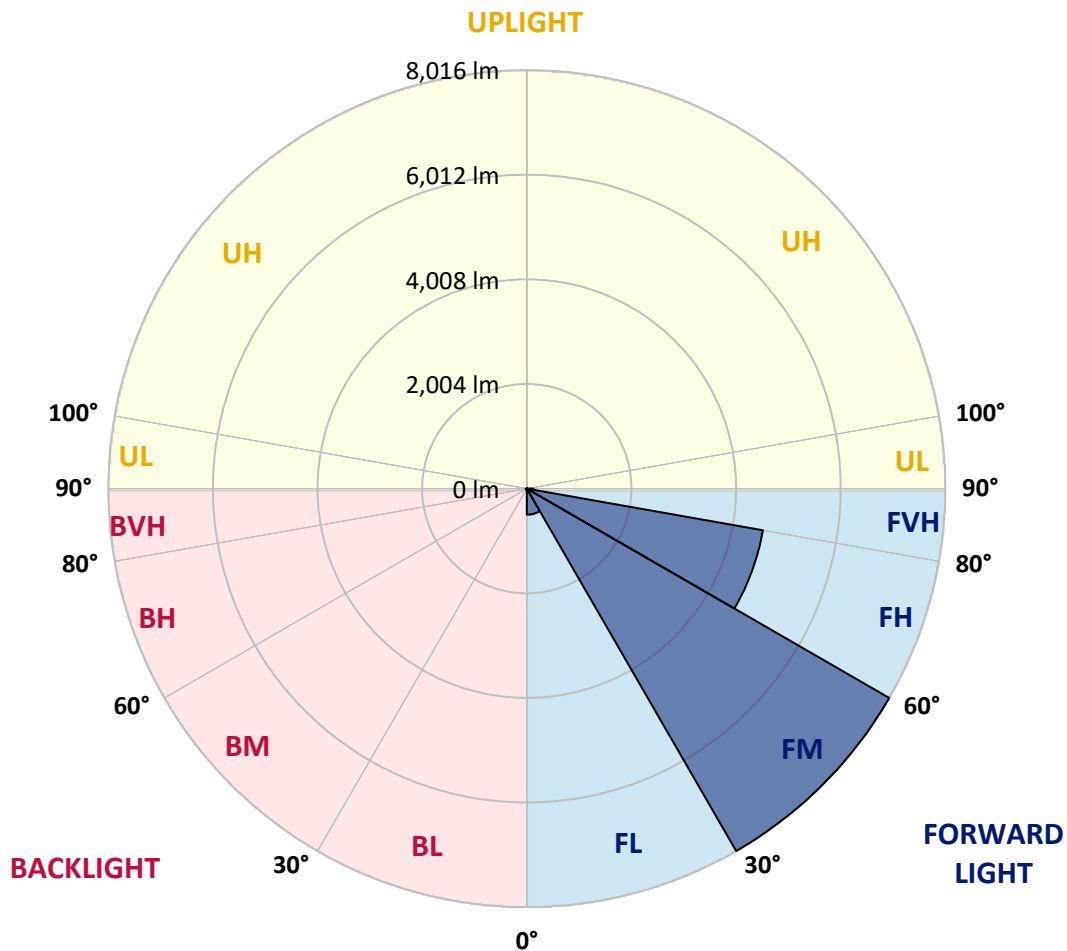
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 499.2  | 3.8       |                         |      |         |
| FM   | (30°-60°)   | 8016.2 | 60.3      |                         |      |         |
| FH   | (60°-80°)   | 4592.3 | 34.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 127.0  | 1.0       |                         |      | G2/225  |
| BL   | (0°-30°)    | 12.7   | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 21.6   | 0.2       | B0/220                  |      |         |
| BH   | (60°-80°)   | 20.0   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 2.4    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G2**

Type II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4    | 81.4   |
| 2.5°  | 98.7    | 99.7    | 97.8    | 94.2    | 91.4    | 91.4    | 90.5    | 87.8    | 87.8    | 85.0    | 83.2   |
| 5°    | 138.1   | 136.2   | 132.6   | 125.3   | 118.9   | 112.5   | 106.1   | 99.7    | 98.7    | 90.5    | 85.0   |
| 7.5°  | 225.8   | 227.7   | 215.8   | 192.9   | 173.7   | 149.0   | 126.2   | 112.5   | 110.6   | 96.9    | 85.9   |
| 10°   | 495.6   | 481.8   | 454.4   | 365.7   | 300.8   | 226.7   | 168.2   | 130.7   | 128.9   | 104.2   | 87.8   |
| 12.5° | 903.3   | 892.4   | 842.1   | 750.6   | 583.3   | 406.0   | 245.9   | 161.8   | 156.3   | 110.6   | 88.7   |
| 15°   | 1302.0  | 1284.6  | 1257.2  | 1164.8  | 969.2   | 727.8   | 402.3   | 221.3   | 206.6   | 119.8   | 87.8   |
| 17.5° | 1556.1  | 1558.9  | 1534.2  | 1494.9  | 1368.7  | 1077.0  | 694.9   | 330.1   | 301.7   | 136.2   | 85.9   |
| 20°   | 1778.3  | 1771.9  | 1785.6  | 1764.6  | 1675.9  | 1463.8  | 1011.2  | 523.0   | 474.5   | 162.7   | 86.9   |
| 22.5° | 2034.3  | 2049.9  | 2059.9  | 2055.4  | 1957.5  | 1776.5  | 1370.5  | 782.6   | 721.4   | 211.2   | 89.6   |
| 25°   | 2377.2  | 2375.4  | 2376.3  | 2364.4  | 2269.3  | 2068.2  | 1730.8  | 1105.4  | 1043.2  | 289.8   | 96.0   |
| 27.5° | 2736.5  | 2747.5  | 2752.1  | 2709.1  | 2584.7  | 2387.2  | 2064.5  | 1458.3  | 1385.2  | 416.0   | 104.2  |
| 30°   | 3227.5  | 3218.3  | 3197.3  | 3109.5  | 2958.7  | 2713.7  | 2393.6  | 1828.6  | 1751.8  | 592.5   | 117.0  |
| 32.5° | 3889.4  | 3879.4  | 3773.3  | 3579.5  | 3353.7  | 3053.8  | 2724.6  | 2199.8  | 2106.6  | 812.8   | 134.4  |
| 35°   | 4980.2  | 4995.8  | 4735.2  | 4233.2  | 3828.2  | 3462.5  | 3091.3  | 2569.2  | 2486.9  | 1084.4  | 158.2  |
| 37.5° | 6650.6  | 6565.6  | 6211.8  | 5324.9  | 4452.7  | 3972.6  | 3441.4  | 2942.2  | 2870.9  | 1419.0  | 189.3  |
| 40°   | 8273.5  | 8189.4  | 8087.0  | 7246.8  | 5537.9  | 4534.9  | 3931.5  | 3380.2  | 3287.8  | 1796.6  | 235.0  |
| 42.5° | 9979.6  | 9933.0  | 9928.4  | 9294.8  | 7518.3  | 5419.1  | 4521.2  | 3893.1  | 3814.5  | 2210.8  | 309.9  |
| 45°   | 11188.3 | 11141.7 | 11239.5 | 11350.2 | 10215.5 | 7313.5  | 5548.0  | 4559.6  | 4445.3  | 2713.7  | 429.7  |
| 47.5° | 11351.1 | 11352.9 | 11614.4 | 11960.9 | 12219.7 | 10243.8 | 6915.8  | 5442.8  | 5303.9  | 3433.2  | 630.9  |
| 50°   | 10809.8 | 10830.8 | 11246.8 | 11866.7 | 12563.4 | 12702.4 | 9327.7  | 6724.7  | 6519.0  | 4286.3  | 916.1  |
| 52.5° | 9779.4  | 9803.2  | 10382.8 | 11402.3 | 12247.1 | 13293.0 | 12167.5 | 8401.5  | 8164.7  | 5350.5  | 1318.4 |
| 55°   | 8851.4  | 8866.0  | 9530.7  | 10818.9 | 11865.8 | 12972.1 | 13853.5 | 10640.7 | 10329.8 | 6659.8  | 1715.2 |
| 57.5° | 7932.5  | 7898.7  | 8331.1  | 9805.9  | 11800.9 | 12578.1 | 14102.2 | 13192.5 | 12849.6 | 8090.7  | 2024.3 |
| 60°   | 6703.7  | 6647.0  | 6994.4  | 7932.5  | 10946.9 | 12836.8 | 13636.8 | 14604.2 | 14526.4 | 10082.9 | 2262.9 |
| 61°   | 5996.9  | 5973.1  | 6322.4  | 7127.0  | 10228.3 | 12771.0 | 13525.3 | 14663.6 | 14671.8 | 11025.6 | 2369.9 |
| 62.5° | 4282.6  | 4350.3  | 4884.2  | 5930.2  | 8567.0  | 12344.0 | 13539.9 | 14479.8 | 14561.2 | 12278.2 | 2646.9 |
| 65°   | 1903.6  | 2012.4  | 2427.5  | 3278.7  | 4982.0  | 10268.5 | 13410.1 | 14076.6 | 14036.4 | 12622.0 | 3601.4 |
| 67.5° | 1129.2  | 1145.6  | 1352.3  | 1857.9  | 2638.7  | 5523.3  | 11833.8 | 13543.6 | 13489.6 | 10988.1 | 4481.0 |
| 70°   | 889.6   | 897.8   | 963.7   | 1165.7  | 1531.5  | 2115.7  | 6754.0  | 11717.7 | 11952.7 | 8909.9  | 4386.8 |
| 72.5° | 843.9   | 842.1   | 851.2   | 886.9   | 964.6   | 1049.6  | 2614.9  | 7788.9  | 8267.1  | 6416.6  | 3678.2 |
| 75°   | 832.9   | 829.3   | 820.1   | 806.4   | 698.5   | 618.1   | 810.1   | 3445.1  | 3722.1  | 4384.1  | 2769.4 |
| 77.5° | 808.2   | 809.2   | 811.0   | 773.5   | 598.9   | 437.0   | 392.2   | 1105.4  | 1359.6  | 2782.2  | 1968.5 |
| 80°   | 546.8   | 555.0   | 568.7   | 554.1   | 538.5   | 316.3   | 277.0   | 393.2   | 398.6   | 1561.6  | 1300.1 |
| 82.5° | 277.0   | 277.0   | 270.6   | 241.4   | 208.5   | 205.7   | 220.3   | 285.3   | 288.9   | 790.0   | 611.7  |
| 85°   | 167.3   | 176.5   | 180.1   | 163.7   | 149.9   | 138.1   | 168.2   | 226.7   | 235.0   | 306.3   | 142.6  |
| 87.5° | 37.5    | 38.4    | 42.1    | 55.8    | 81.4    | 110.6   | 156.3   | 207.5   | 211.2   | 196.6   | 17.4   |
| 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: P1048077

CATALOG NUMBER: GALN-SA6A-927-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|------|------|------|------|------|------|------|------|------|
| 0°    | 81.4   | 81.4  | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 | 81.4 |
| 2.5°  | 82.3   | 80.5  | 79.5 | 76.8 | 74.1 | 71.3 | 69.5 | 68.6 | 69.5 | 70.4 | 70.4 |
| 5°    | 81.4   | 78.6  | 74.1 | 69.5 | 65.8 | 62.2 | 58.5 | 57.6 | 57.6 | 58.5 | 58.5 |
| 7.5°  | 81.4   | 76.8  | 70.4 | 64.9 | 59.4 | 53.9 | 51.2 | 49.4 | 50.3 | 50.3 | 50.3 |
| 10°   | 81.4   | 75.9  | 67.7 | 59.4 | 53.0 | 46.6 | 42.1 | 40.2 | 40.2 | 40.2 | 40.2 |
| 12.5° | 80.5   | 75.0  | 64.9 | 54.9 | 45.7 | 38.4 | 32.9 | 30.2 | 31.1 | 31.1 | 31.1 |
| 15°   | 78.6   | 72.2  | 61.3 | 46.6 | 36.6 | 29.3 | 23.8 | 21.0 | 21.9 | 23.8 | 24.7 |
| 17.5° | 75.9   | 69.5  | 54.9 | 39.3 | 29.3 | 21.9 | 16.5 | 14.6 | 15.5 | 18.3 | 18.3 |
| 20°   | 75.0   | 66.7  | 48.5 | 32.0 | 21.9 | 15.5 | 11.0 | 9.1  | 10.1 | 13.7 | 14.6 |
| 22.5° | 75.0   | 64.9  | 43.9 | 26.5 | 16.5 | 10.1 | 6.4  | 3.7  | 3.7  | 6.4  | 6.4  |
| 25°   | 75.9   | 64.0  | 40.2 | 21.9 | 11.9 | 7.3  | 3.7  | 1.8  | 3.7  | 10.1 | 11.9 |
| 27.5° | 77.7   | 63.1  | 38.4 | 18.3 | 9.1  | 6.4  | 2.7  | 6.4  | 11.0 | 11.0 | 11.0 |
| 30°   | 79.5   | 61.3  | 35.7 | 15.5 | 8.2  | 4.6  | 4.6  | 9.1  | 9.1  | 11.0 | 11.9 |
| 32.5° | 82.3   | 60.3  | 33.8 | 13.7 | 6.4  | 3.7  | 6.4  | 5.5  | 5.5  | 6.4  | 7.3  |
| 35°   | 87.8   | 61.3  | 32.0 | 13.7 | 6.4  | 4.6  | 5.5  | 2.7  | 1.8  | 1.8  | 1.8  |
| 37.5° | 95.1   | 62.2  | 29.3 | 11.9 | 5.5  | 5.5  | 2.7  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 107.0  | 64.9  | 27.4 | 11.0 | 4.6  | 4.6  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 127.1  | 70.4  | 26.5 | 10.1 | 4.6  | 3.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 167.3  | 83.2  | 24.7 | 9.1  | 4.6  | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 240.5  | 113.4 | 23.8 | 7.3  | 2.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 351.1  | 153.6 | 22.9 | 6.4  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 448.0  | 161.8 | 15.5 | 5.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 459.0  | 111.5 | 11.9 | 3.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 365.7  | 72.2  | 10.1 | 2.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 277.0  | 54.9  | 9.1  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 61°   | 266.1  | 49.4  | 9.1  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 293.5  | 43.0  | 8.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 477.3  | 35.7  | 7.3  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 829.3  | 31.1  | 6.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1047.8 | 29.3  | 5.5  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 913.4  | 26.5  | 5.5  | 1.8  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 549.5  | 22.9  | 5.5  | 3.7  | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 288.0  | 17.4  | 5.5  | 4.6  | 2.7  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 139.9  | 15.5  | 6.4  | 4.6  | 3.7  | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 54.9   | 12.8  | 7.3  | 6.4  | 4.6  | 2.7  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 24.7   | 11.0  | 8.2  | 7.3  | 6.4  | 3.7  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 12.8   | 10.1  | 9.1  | 8.2  | 6.4  | 4.6  | 1.8  | 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: SP1-2407-184-13

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-927-U-5WQ

Data in this report applies to families of products including GSS-SB1A-927-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-13  
 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-927-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI  
 2700K CCT 26 LEDS

### Spectral Parameters

CCT (K): 2731  
 CIE  $u'$ : 0.2605  
 CIE  $v'$ : 0.5298  
 Duv: 0.0021  
 CIE x: 0.4610  
 CIE y: 0.4166  
 CIE z: 0.1224  
 Peak Wavelength (nm): 622  
 Dominant Wavelength (nm): 583  
 Purity: 63.43685  
 R<sub>f</sub>: 92.6  
 R<sub>g</sub>: 98

CRI (Ra): 91.8  
 R1: 91.4  
 R2: 95.1  
 R3: 97.6  
 R4: 92.3  
 R5: 91.1  
 R6: 94.7  
 R7: 92.3  
 R8: 80.0  
 R9: 54.7  
 R10: 87.7  
 R11: 92.9  
 R12: 84.0  
 R13: 92.2  
 R14: 97.8  
 R15: 86.8



### Test Conditions

Stabilization Time: M  
 Operation Time: 1H 0M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-13

| 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: SP1-2407-184-13

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|
| 360               | 0                                      | NR                             | 490               | 253                                    | NR                             | 620               | 997                                    | NR                             | 750               | 78                                     | NR                             | 880               | 2                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 285                                    | NR                             | 625               | 996                                    | NR                             | 755               | 67                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 314                                    | NR                             | 630               | 989                                    | NR                             | 760               | 58                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 343                                    | NR                             | 635               | 969                                    | NR                             | 765               | 50                                     | NR                             | 895               | 1                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 372                                    | NR                             | 640               | 939                                    | NR                             | 770               | 42                                     | NR                             | 900               | 1                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 401                                    | NR                             | 645               | 901                                    | NR                             | 775               | 36                                     | NR                             | 905               | 1                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 431                                    | NR                             | 650               | 858                                    | NR                             | 780               | 31                                     | NR                             | 910               | 1                                      | NR                             |
| 395               | 0                                      | NR                             | 525               | 459                                    | NR                             | 655               | 806                                    | NR                             | 785               | 26                                     | NR                             | 915               | 1                                      | NR                             |
| 400               | 0                                      | NR                             | 530               | 488                                    | NR                             | 660               | 752                                    | NR                             | 790               | 23                                     | NR                             | 920               | 1                                      | NR                             |
| 405               | 2                                      | NR                             | 535               | 516                                    | NR                             | 665               | 696                                    | NR                             | 795               | 19                                     | NR                             | 925               | 1                                      | NR                             |
| 410               | 5                                      | NR                             | 540               | 540                                    | NR                             | 670               | 636                                    | NR                             | 800               | 17                                     | NR                             | 930               | 0                                      | NR                             |
| 415               | 10                                     | NR                             | 545               | 566                                    | NR                             | 675               | 579                                    | NR                             | 805               | 14                                     | NR                             | 935               | 0                                      | NR                             |
| 420               | 19                                     | NR                             | 550               | 589                                    | NR                             | 680               | 524                                    | NR                             | 810               | 12                                     | NR                             | 940               | 0                                      | NR                             |
| 425               | 34                                     | NR                             | 555               | 612                                    | NR                             | 685               | 470                                    | NR                             | 815               | 11                                     | NR                             | 945               | 0                                      | NR                             |
| 430               | 61                                     | NR                             | 560               | 634                                    | NR                             | 690               | 421                                    | NR                             | 820               | 9                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 113                                    | NR                             | 565               | 660                                    | NR                             | 695               | 371                                    | NR                             | 825               | 8                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 198                                    | NR                             | 570               | 688                                    | NR                             | 700               | 327                                    | NR                             | 830               | 7                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 288                                    | NR                             | 575               | 719                                    | NR                             | 705               | 288                                    | NR                             | 835               | 6                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 286                                    | NR                             | 580               | 754                                    | NR                             | 710               | 251                                    | NR                             | 840               | 5                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 228                                    | NR                             | 585               | 791                                    | NR                             | 715               | 220                                    | NR                             | 845               | 4                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 207                                    | NR                             | 590               | 831                                    | NR                             | 720               | 192                                    | NR                             | 850               | 4                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 186                                    | NR                             | 595               | 870                                    | NR                             | 725               | 166                                    | NR                             | 855               | 3                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 168                                    | NR                             | 600               | 907                                    | NR                             | 730               | 144                                    | NR                             | 860               | 3                                      | NR                             | 990               | 1                                      | NR                             |
| 475               | 177                                    | NR                             | 605               | 940                                    | NR                             | 735               | 124                                    | NR                             | 865               | 2                                      | NR                             | 995               | 1                                      | NR                             |
| 480               | 198                                    | NR                             | 610               | 967                                    | NR                             | 740               | 106                                    | NR                             | 870               | 2                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 223                                    | NR                             | 615               | 988                                    | NR                             | 745               | 91                                     | NR                             | 875               | 2                                      | NR                             |                   |                                        |                                |

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### Scotopic Flux vs. Wavelength



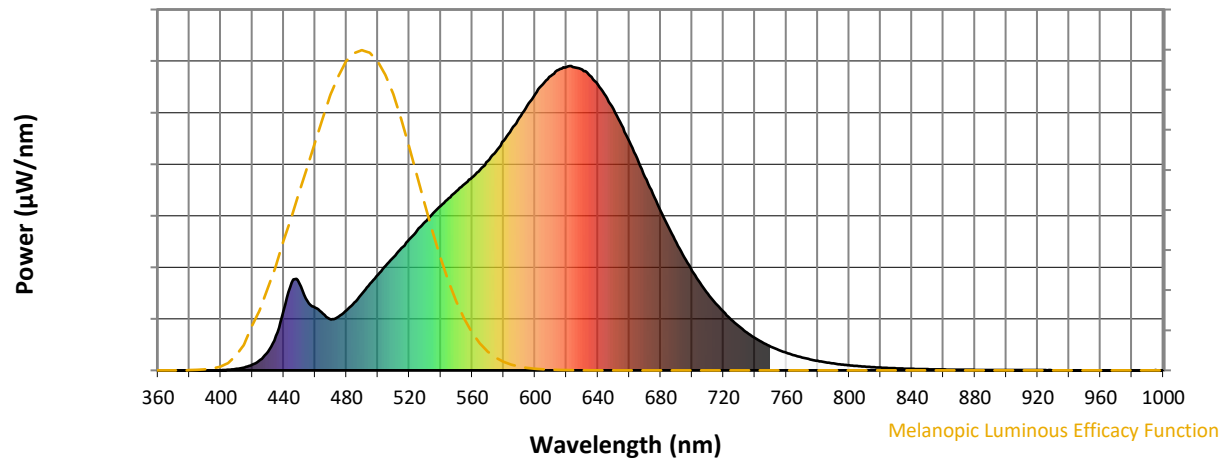
Scotopic Lumens: NR

S/P: 1.27

| 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    | 253                      | NR            | 620    | 997                      | NR            | 750    | 78                       | NR            | 880    | 2                        | NR            |
| 365    | 0                        | NR            | 495    | 285                      | NR            | 625    | 996                      | NR            | 755    | 67                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 314                      | NR            | 630    | 989                      | NR            | 760    | 58                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 343                      | NR            | 635    | 969                      | NR            | 765    | 50                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 372                      | NR            | 640    | 939                      | NR            | 770    | 42                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 401                      | NR            | 645    | 901                      | NR            | 775    | 36                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 431                      | NR            | 650    | 858                      | NR            | 780    | 31                       | NR            | 910    | 1                        | NR            |
| 395    | 0                        | NR            | 525    | 459                      | NR            | 655    | 806                      | NR            | 785    | 26                       | NR            | 915    | 1                        | NR            |
| 400    | 0                        | NR            | 530    | 488                      | NR            | 660    | 752                      | NR            | 790    | 23                       | NR            | 920    | 1                        | NR            |
| 405    | 2                        | NR            | 535    | 516                      | NR            | 665    | 696                      | NR            | 795    | 19                       | NR            | 925    | 1                        | NR            |
| 410    | 5                        | NR            | 540    | 540                      | NR            | 670    | 636                      | NR            | 800    | 17                       | NR            | 930    | 0                        | NR            |
| 415    | 10                       | NR            | 545    | 566                      | NR            | 675    | 579                      | NR            | 805    | 14                       | NR            | 935    | 0                        | NR            |
| 420    | 19                       | NR            | 550    | 589                      | NR            | 680    | 524                      | NR            | 810    | 12                       | NR            | 940    | 0                        | NR            |
| 425    | 34                       | NR            | 555    | 612                      | NR            | 685    | 470                      | NR            | 815    | 11                       | NR            | 945    | 0                        | NR            |
| 430    | 61                       | NR            | 560    | 634                      | NR            | 690    | 421                      | NR            | 820    | 9                        | NR            | 950    | 0                        | NR            |
| 435    | 113                      | NR            | 565    | 660                      | NR            | 695    | 371                      | NR            | 825    | 8                        | NR            | 955    | 0                        | NR            |
| 440    | 198                      | NR            | 570    | 688                      | NR            | 700    | 327                      | NR            | 830    | 7                        | NR            | 960    | 0                        | NR            |
| 445    | 288                      | NR            | 575    | 719                      | NR            | 705    | 288                      | NR            | 835    | 6                        | NR            | 965    | 0                        | NR            |
| 450    | 286                      | NR            | 580    | 754                      | NR            | 710    | 251                      | NR            | 840    | 5                        | NR            | 970    | 0                        | NR            |
| 455    | 228                      | NR            | 585    | 791                      | NR            | 715    | 220                      | NR            | 845    | 4                        | NR            | 975    | 0                        | NR            |
| 460    | 207                      | NR            | 590    | 831                      | NR            | 720    | 192                      | NR            | 850    | 4                        | NR            | 980    | 0                        | NR            |
| 465    | 186                      | NR            | 595    | 870                      | NR            | 725    | 166                      | NR            | 855    | 3                        | NR            | 985    | 0                        | NR            |
| 470    | 168                      | NR            | 600    | 907                      | NR            | 730    | 144                      | NR            | 860    | 3                        | NR            | 990    | 1                        | NR            |
| 475    | 177                      | NR            | 605    | 940                      | NR            | 735    | 124                      | NR            | 865    | 2                        | NR            | 995    | 1                        | NR            |
| 480    | 198                      | NR            | 610    | 967                      | NR            | 740    | 106                      | NR            | 870    | 2                        | NR            | 1000   | 0                        | NR            |
| 485    | 223                      | NR            | 615    | 988                      | NR            | 745    | 91                       | NR            | 875    | 2                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.38

| 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       | 253                         | NR               | 620       | 997                         | NR               | 750       | 78                          | NR               | 880       | 2                           | NR               |
| 365       | 0                           | NR               | 495       | 285                         | NR               | 625       | 996                         | NR               | 755       | 67                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 314                         | NR               | 630       | 989                         | NR               | 760       | 58                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 343                         | NR               | 635       | 969                         | NR               | 765       | 50                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 372                         | NR               | 640       | 939                         | NR               | 770       | 42                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 401                         | NR               | 645       | 901                         | NR               | 775       | 36                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 431                         | NR               | 650       | 858                         | NR               | 780       | 31                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 459                         | NR               | 655       | 806                         | NR               | 785       | 26                          | NR               | 915       | 1                           | NR               |
| 400       | 0                           | NR               | 530       | 488                         | NR               | 660       | 752                         | NR               | 790       | 23                          | NR               | 920       | 1                           | NR               |
| 405       | 2                           | NR               | 535       | 516                         | NR               | 665       | 696                         | NR               | 795       | 19                          | NR               | 925       | 1                           | NR               |
| 410       | 5                           | NR               | 540       | 540                         | NR               | 670       | 636                         | NR               | 800       | 17                          | NR               | 930       | 0                           | NR               |
| 415       | 10                          | NR               | 545       | 566                         | NR               | 675       | 579                         | NR               | 805       | 14                          | NR               | 935       | 0                           | NR               |
| 420       | 19                          | NR               | 550       | 589                         | NR               | 680       | 524                         | NR               | 810       | 12                          | NR               | 940       | 0                           | NR               |
| 425       | 34                          | NR               | 555       | 612                         | NR               | 685       | 470                         | NR               | 815       | 11                          | NR               | 945       | 0                           | NR               |
| 430       | 61                          | NR               | 560       | 634                         | NR               | 690       | 421                         | NR               | 820       | 9                           | NR               | 950       | 0                           | NR               |
| 435       | 113                         | NR               | 565       | 660                         | NR               | 695       | 371                         | NR               | 825       | 8                           | NR               | 955       | 0                           | NR               |
| 440       | 198                         | NR               | 570       | 688                         | NR               | 700       | 327                         | NR               | 830       | 7                           | NR               | 960       | 0                           | NR               |
| 445       | 288                         | NR               | 575       | 719                         | NR               | 705       | 288                         | NR               | 835       | 6                           | NR               | 965       | 0                           | NR               |
| 450       | 286                         | NR               | 580       | 754                         | NR               | 710       | 251                         | NR               | 840       | 5                           | NR               | 970       | 0                           | NR               |
| 455       | 228                         | NR               | 585       | 791                         | NR               | 715       | 220                         | NR               | 845       | 4                           | NR               | 975       | 0                           | NR               |
| 460       | 207                         | NR               | 590       | 831                         | NR               | 720       | 192                         | NR               | 850       | 4                           | NR               | 980       | 0                           | NR               |
| 465       | 186                         | NR               | 595       | 870                         | NR               | 725       | 166                         | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 168                         | NR               | 600       | 907                         | NR               | 730       | 144                         | NR               | 860       | 3                           | NR               | 990       | 1                           | NR               |
| 475       | 177                         | NR               | 605       | 940                         | NR               | 735       | 124                         | NR               | 865       | 2                           | NR               | 995       | 1                           | NR               |
| 480       | 198                         | NR               | 610       | 967                         | NR               | 740       | 106                         | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 223                         | NR               | 615       | 988                         | NR               | 745       | 91                          | NR               | 875       | 2                           | NR               |           |                             |                  |

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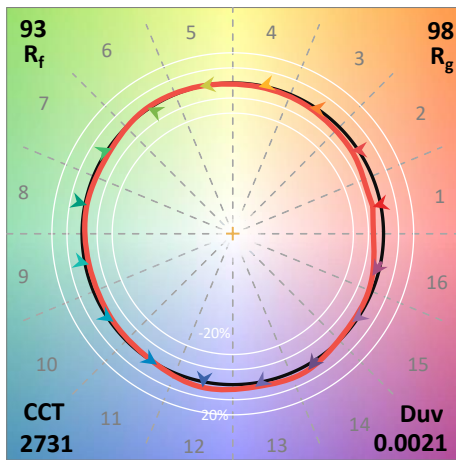
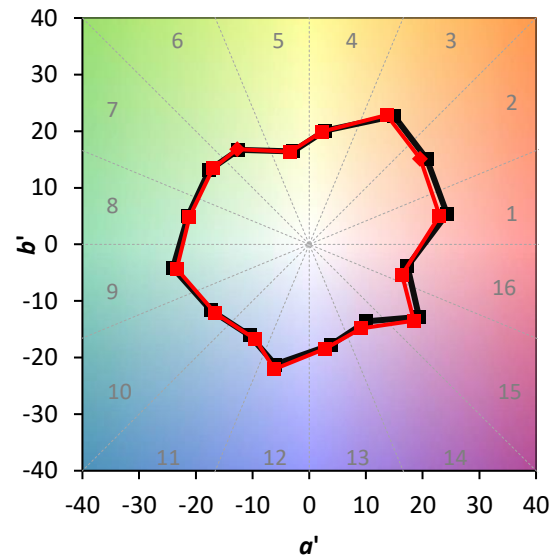
TM-30-18

### Summary

$R_f = 92.6$   
 $R_g = 98$   
 $CIE R_a = 91.8$   
 $R_9 = 54.7$

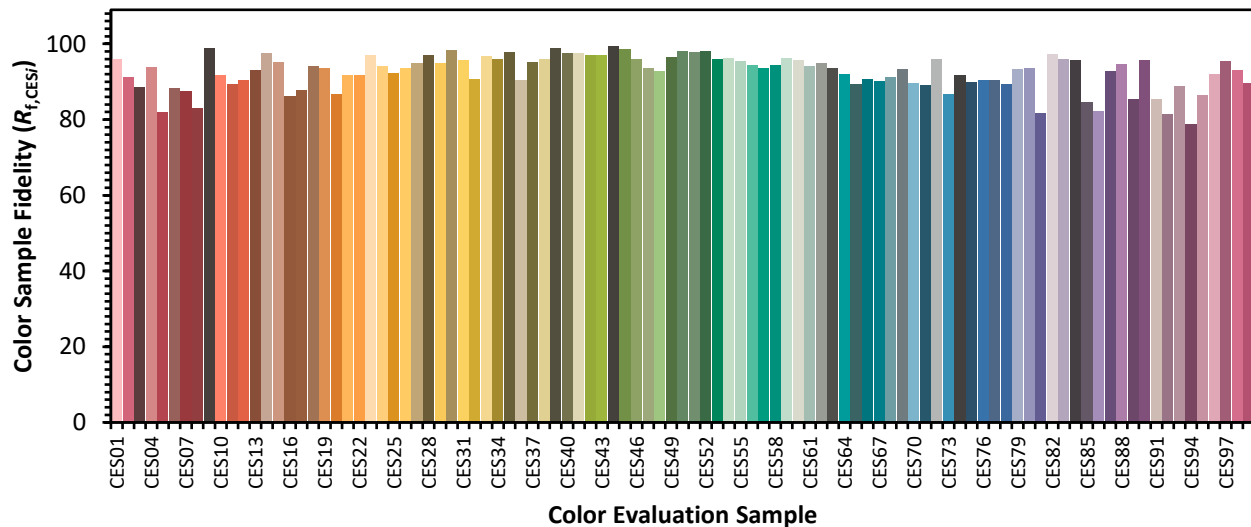


### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 94 | CES51 = 98 | CES76 = 90 |
| CES02 = 64 | CES27 = 95 | CES52 = 98 | CES77 = 90 |
| CES03 = 32 | CES28 = 97 | CES53 = 96 | CES78 = 89 |
| CES04 = 71 | CES29 = 95 | CES54 = 96 | CES79 = 93 |
| CES05 = 51 | CES30 = 98 | CES55 = 95 | CES80 = 94 |
| CES06 = 52 | CES31 = 96 | CES56 = 94 | CES81 = 82 |
| CES07 = 44 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 43 | CES33 = 97 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 96 | CES59 = 96 | CES84 = 96 |
| CES10 = 77 | CES35 = 98 | CES60 = 96 | CES85 = 85 |
| CES11 = 59 | CES36 = 90 | CES61 = 94 | CES86 = 82 |
| CES12 = 66 | CES37 = 95 | CES62 = 95 | CES87 = 93 |
| CES13 = 44 | CES38 = 96 | CES63 = 94 | CES88 = 95 |
| CES14 = 74 | CES39 = 99 | CES64 = 92 | CES89 = 85 |
| CES15 = 72 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 48 | CES41 = 98 | CES66 = 91 | CES91 = 85 |
| CES17 = 50 | CES42 = 97 | CES67 = 90 | CES92 = 82 |
| CES18 = 57 | CES43 = 97 | CES68 = 91 | CES93 = 89 |
| CES19 = 72 | CES44 = 99 | CES69 = 93 | CES94 = 79 |
| CES20 = 68 | CES45 = 99 | CES70 = 90 | CES95 = 87 |
| CES21 = 87 | CES46 = 96 | CES71 = 89 | CES96 = 92 |
| CES22 = 79 | CES47 = 94 | CES72 = 96 | CES97 = 96 |
| CES23 = 92 | CES48 = 93 | CES73 = 87 | CES98 = 93 |
| CES24 = 91 | CES49 = 96 | CES74 = 92 | CES99 = 90 |
| CES25 = 72 | CES50 = 98 | CES75 = 90 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)