

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: P1047943

Luminaire Tested: **GALN-SA8C-830-U-T2BC**

Issue Date: 07/10/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1047943  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 07/10/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GALN-SA8C-830-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 8xLight Square PACKAGE  
80CRI 3000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (112) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 39540 lumens  
Efficiency: N/A  
Efficacy: 106.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 372.9  
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

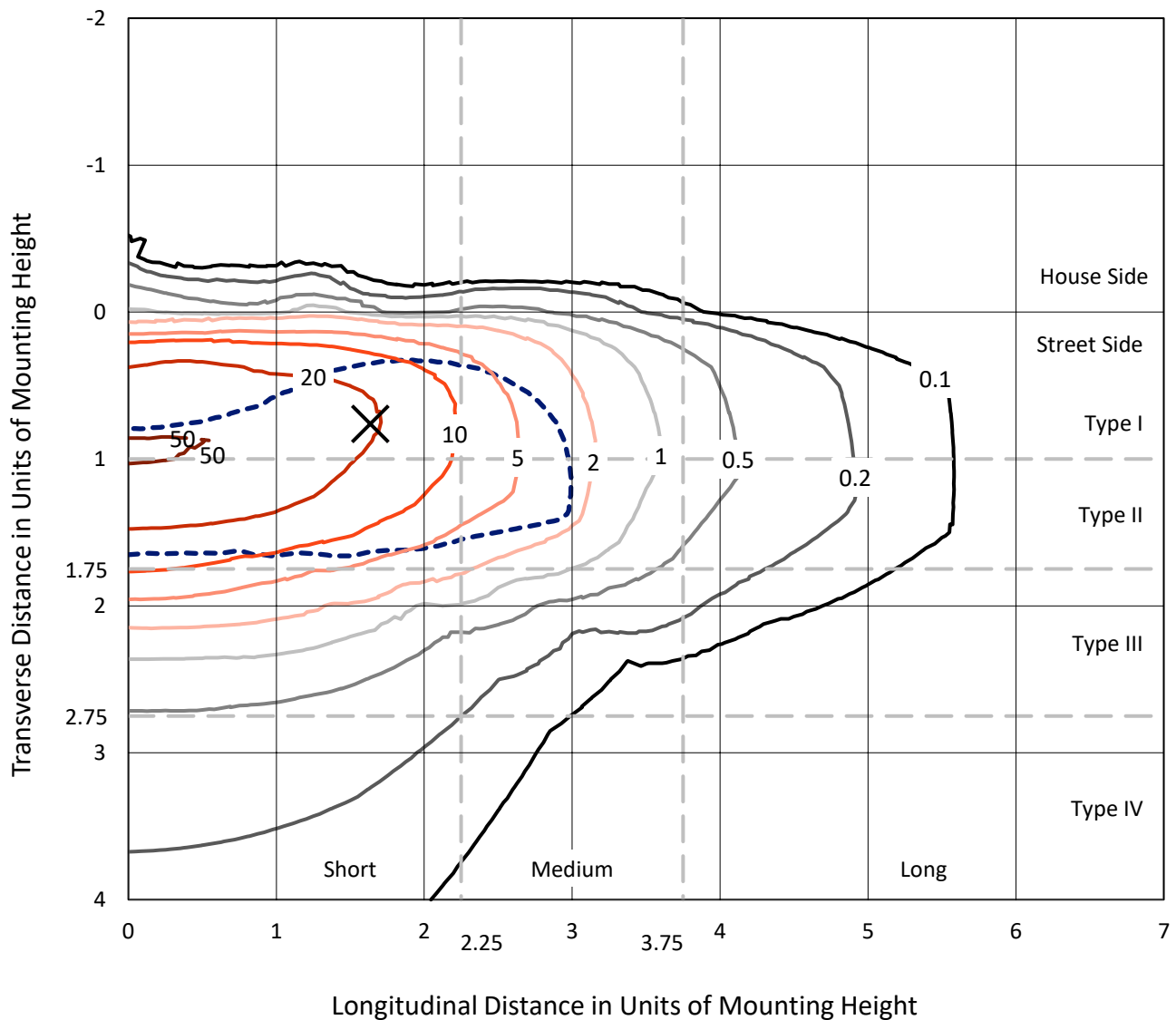


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

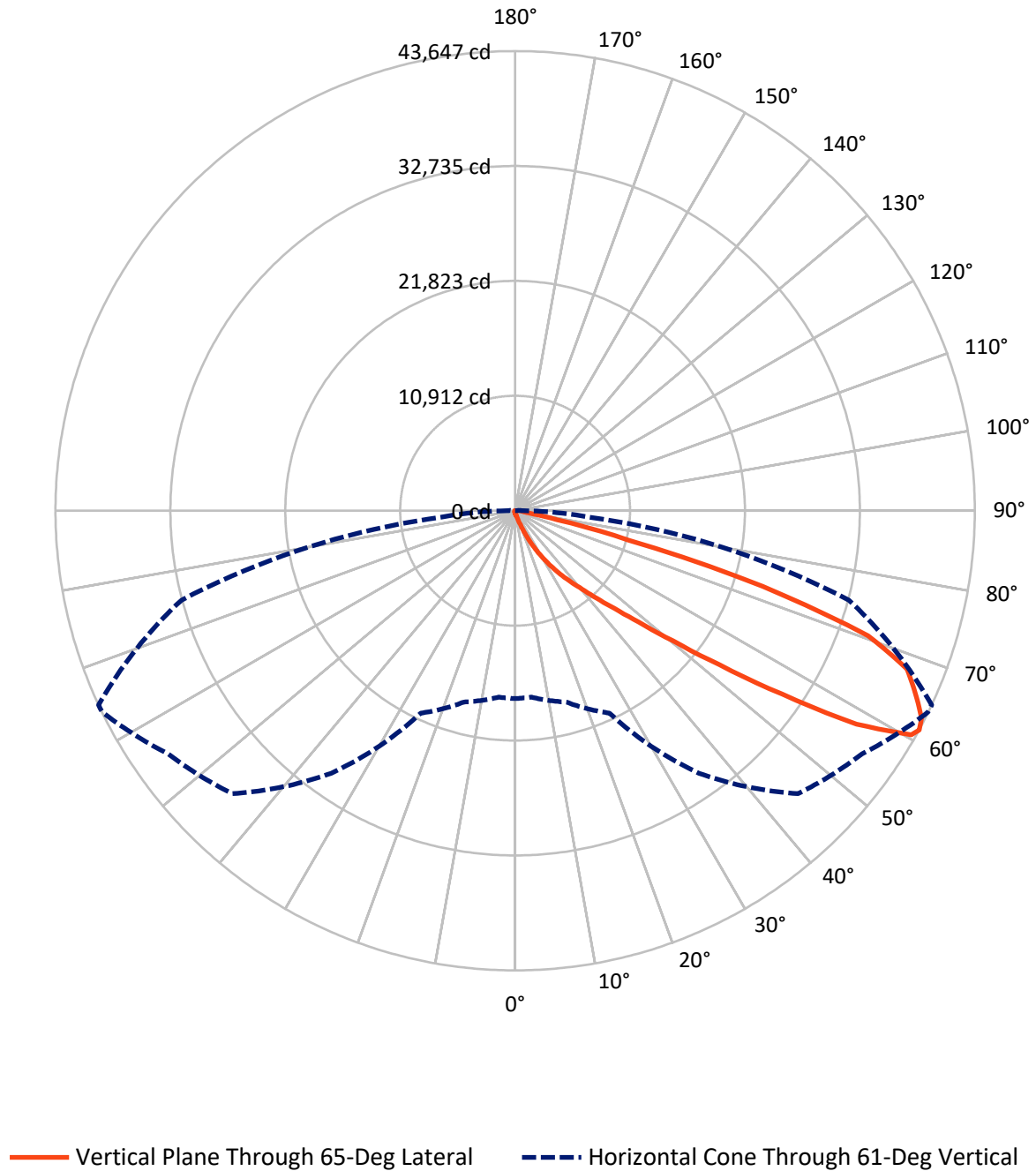


Based on 15 foot mounting height. Maximum calculated value = 52.3 fc  
 Type II - Short - N/A

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CATALOG NUMBER: GALN-SA8C-830-U-T2BC

## Luminous Intensity Polar Plot



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CATALOG NUMBER: GALN-SA8C-830-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 168.8    | 0.0    | 168.8   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 39371.2  | 0.0    | 39371.2 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 39540.0  | 0.0    | 39540.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 30.8    | 0.1       |
| 10°-20°   | 325.1   | 0.8       |
| 20°-30°   | 1166.9  | 3.0       |
| 30°-40°   | 3106.7  | 7.9       |
| 40°-50°   | 8161.3  | 20.6      |
| 50°-60°   | 12643.4 | 32.0      |
| 60°-70°   | 10601.3 | 26.8      |
| 70°-80°   | 3119.8  | 7.9       |
| 80°-90°   | 384.8   | 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°    | 39540.0 | 100.0     |
| 0°-180°   | 39540.0 | 100.0     |



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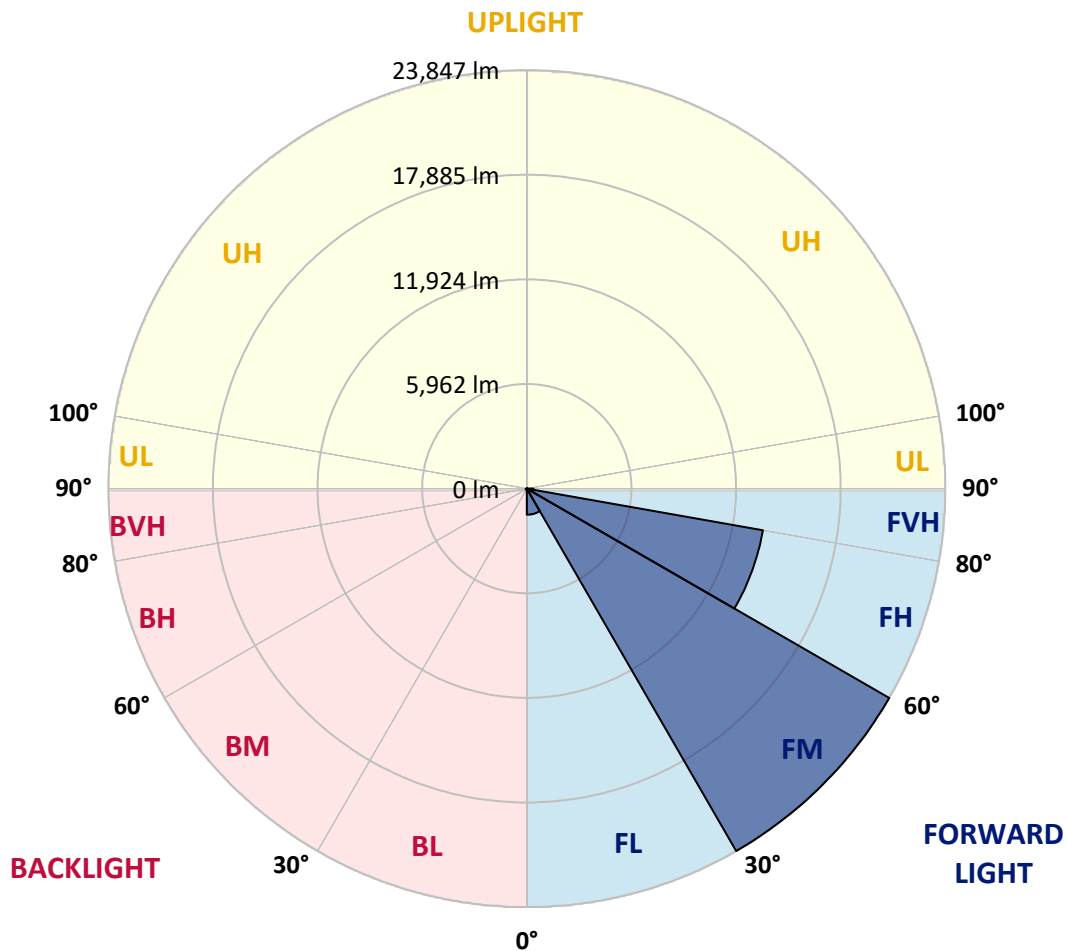
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|---------|-----------|-------------------------|------|--------|
|      |             |         |           | B                       | U    | G      |
| FL   | (0°-30°)    | 1484.9  | 3.8       |                         |      |        |
| FM   | (30°-60°)   | 23847.1 | 60.3      |                         |      |        |
| FH   | (60°-80°)   | 13661.5 | 34.6      |                         |      | G5     |
| FVH  | (80°-90°)   | 377.7   | 1.0       |                         |      | G3/500 |
| BL   | (0°-30°)    | 37.9    | 0.1       | B0/110                  |      |        |
| BM   | (30°-60°)   | 64.2    | 0.2       | B0/220                  |      |        |
| BH   | (60°-80°)   | 59.5    | 0.2       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 7.1     | 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 II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   | 242.1   |
| 2.5°  | 293.8   | 296.5   | 291.0   | 280.2   | 272.0   | 272.0   | 269.3   | 261.1   | 261.1   | 253.0   | 247.5   |
| 5°    | 410.7   | 405.3   | 394.4   | 372.6   | 353.6   | 334.6   | 315.5   | 296.5   | 293.8   | 269.3   | 253.0   |
| 7.5°  | 671.8   | 677.3   | 641.9   | 573.9   | 516.8   | 443.3   | 375.3   | 334.6   | 329.1   | 288.3   | 255.7   |
| 10°   | 1474.2  | 1433.4  | 1351.8  | 1088.0  | 894.9   | 674.5   | 500.5   | 388.9   | 383.5   | 310.1   | 261.1   |
| 12.5° | 2687.3  | 2654.6  | 2505.1  | 2233.1  | 1735.3  | 1207.6  | 731.7   | 481.4   | 465.1   | 329.1   | 263.8   |
| 15°   | 3873.2  | 3821.5  | 3739.9  | 3465.2  | 2883.1  | 2165.1  | 1196.8  | 658.2   | 614.7   | 356.3   | 261.1   |
| 17.5° | 4629.3  | 4637.5  | 4564.0  | 4447.1  | 4071.7  | 3204.1  | 2067.1  | 981.9   | 897.6   | 405.3   | 255.7   |
| 20°   | 5290.3  | 5271.2  | 5312.0  | 5249.5  | 4985.6  | 4354.6  | 3008.2  | 1555.8  | 1411.6  | 484.1   | 258.4   |
| 22.5° | 6051.8  | 6098.1  | 6128.0  | 6114.4  | 5823.4  | 5284.8  | 4077.2  | 2328.3  | 2146.0  | 628.3   | 266.6   |
| 25°   | 7071.8  | 7066.4  | 7069.1  | 7033.7  | 6750.9  | 6152.5  | 5148.8  | 3288.4  | 3103.4  | 862.2   | 285.6   |
| 27.5° | 8140.7  | 8173.4  | 8187.0  | 8059.1  | 7689.2  | 7101.7  | 6141.6  | 4338.3  | 4120.7  | 1237.6  | 310.1   |
| 30°   | 9601.3  | 9574.1  | 9511.6  | 9250.5  | 8801.7  | 8072.7  | 7120.8  | 5439.9  | 5211.4  | 1762.5  | 348.2   |
| 32.5° | 11570.6 | 11540.6 | 11225.1 | 10648.5 | 9976.7  | 9084.6  | 8105.4  | 6544.1  | 6266.7  | 2418.0  | 399.8   |
| 35°   | 14815.4 | 14861.7 | 14086.5 | 12593.3 | 11388.3 | 10300.4 | 9196.1  | 7643.0  | 7398.2  | 3225.8  | 470.5   |
| 37.5° | 19784.7 | 19531.8 | 18479.2 | 15840.9 | 13246.0 | 11818.1 | 10237.8 | 8752.7  | 8540.6  | 4221.3  | 563.0   |
| 40°   | 24612.6 | 24362.4 | 24057.8 | 21558.1 | 16474.6 | 13490.8 | 11695.7 | 10055.6 | 9780.9  | 5344.7  | 699.0   |
| 42.5° | 29688.0 | 29549.3 | 29535.7 | 27650.8 | 22366.0 | 16121.0 | 13450.0 | 11581.4 | 11347.5 | 6576.8  | 922.1   |
| 45°   | 33283.7 | 33145.0 | 33436.1 | 33765.2 | 30389.7 | 21756.7 | 16504.5 | 13564.3 | 13224.3 | 8072.7  | 1278.4  |
| 47.5° | 33767.9 | 33773.3 | 34551.2 | 35582.1 | 36351.8 | 30474.1 | 20573.5 | 16191.7 | 15778.3 | 10213.3 | 1876.7  |
| 50°   | 32157.7 | 32220.3 | 33457.8 | 35301.9 | 37374.5 | 37787.9 | 27748.7 | 20005.1 | 19393.1 | 12751.0 | 2725.4  |
| 52.5° | 29092.3 | 29163.1 | 30887.5 | 33920.2 | 36433.4 | 39545.0 | 36196.8 | 24993.4 | 24288.9 | 15917.0 | 3922.1  |
| 55°   | 26331.6 | 26375.1 | 28352.5 | 32184.9 | 35299.2 | 38590.3 | 41212.3 | 31654.5 | 30729.7 | 19811.9 | 5102.6  |
| 57.5° | 23598.1 | 23497.4 | 24784.0 | 29171.2 | 35106.1 | 37418.0 | 41952.1 | 39245.8 | 38225.9 | 24068.6 | 6021.9  |
| 60°   | 19942.5 | 19773.9 | 20807.4 | 23598.1 | 32565.7 | 38187.8 | 40567.7 | 43445.4 | 43214.2 | 29995.4 | 6731.8  |
| 61°   | 17840.0 | 17769.3 | 18808.3 | 21201.8 | 30427.8 | 37991.9 | 40235.9 | 43622.2 | 43646.7 | 32799.6 | 7050.1  |
| 62.5° | 12740.1 | 12941.4 | 14529.8 | 17641.4 | 25485.7 | 36721.7 | 40279.4 | 43075.5 | 43317.6 | 36525.9 | 7874.2  |
| 65°   | 5662.9  | 5986.6  | 7221.4  | 9753.7  | 14820.9 | 30547.5 | 39893.2 | 41876.0 | 41756.3 | 37548.6 | 10713.8 |
| 67.5° | 3359.1  | 3408.1  | 4022.8  | 5526.9  | 7849.7  | 16431.1 | 35204.0 | 40290.3 | 40129.8 | 32688.1 | 13330.4 |
| 70°   | 2646.5  | 2671.0  | 2866.8  | 3467.9  | 4555.9  | 6293.9  | 20092.1 | 34858.6 | 35557.6 | 26505.7 | 13050.2 |
| 72.5° | 2510.5  | 2505.1  | 2532.3  | 2638.3  | 2869.5  | 3122.5  | 7779.0  | 23171.1 | 24593.6 | 19088.4 | 10942.3 |
| 75°   | 2477.9  | 2467.0  | 2439.8  | 2399.0  | 2078.0  | 1838.7  | 2409.9  | 10248.7 | 11072.8 | 13042.0 | 8238.7  |
| 77.5° | 2404.4  | 2407.1  | 2412.6  | 2301.1  | 1781.6  | 1300.1  | 1166.8  | 3288.4  | 4044.5  | 8276.7  | 5856.0  |
| 80°   | 1626.5  | 1651.0  | 1691.8  | 1648.3  | 1602.0  | 941.1   | 824.1   | 1169.6  | 1185.9  | 4645.6  | 3867.7  |
| 82.5° | 824.1   | 824.1   | 805.1   | 718.1   | 620.1   | 612.0   | 655.5   | 848.6   | 859.5   | 2350.0  | 1819.6  |
| 85°   | 497.7   | 524.9   | 535.8   | 486.9   | 446.1   | 410.7   | 500.5   | 674.5   | 699.0   | 911.2   | 424.3   |
| 87.5° | 111.5   | 114.2   | 125.1   | 165.9   | 242.1   | 329.1   | 465.1   | 617.4   | 628.3   | 584.8   | 51.7    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

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CATALOG NUMBER: GALN-SA8C-830-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 242.1  | 242.1 | 242.1 | 242.1 | 242.1 | 242.1 | 242.1 | 242.1 | 242.1 | 242.1 | 242.1 |
| 2.5°  | 244.8  | 239.4 | 236.6 | 228.5 | 220.3 | 212.2 | 206.7 | 204.0 | 206.7 | 209.4 | 209.4 |
| 5°    | 242.1  | 233.9 | 220.3 | 206.7 | 195.8 | 185.0 | 174.1 | 171.4 | 171.4 | 174.1 | 174.1 |
| 7.5°  | 242.1  | 228.5 | 209.4 | 193.1 | 176.8 | 160.5 | 152.3 | 146.9 | 149.6 | 149.6 | 149.6 |
| 10°   | 242.1  | 225.8 | 201.3 | 176.8 | 157.8 | 138.7 | 125.1 | 119.7 | 119.7 | 119.7 | 119.7 |
| 12.5° | 239.4  | 223.0 | 193.1 | 163.2 | 136.0 | 114.2 | 97.9  | 89.8  | 92.5  | 92.5  | 92.5  |
| 15°   | 233.9  | 214.9 | 182.2 | 138.7 | 108.8 | 87.0  | 70.7  | 62.6  | 65.3  | 70.7  | 73.4  |
| 17.5° | 225.8  | 206.7 | 163.2 | 117.0 | 87.0  | 65.3  | 49.0  | 43.5  | 46.2  | 54.4  | 54.4  |
| 20°   | 223.0  | 198.6 | 144.2 | 95.2  | 65.3  | 46.2  | 32.6  | 27.2  | 29.9  | 40.8  | 43.5  |
| 22.5° | 223.0  | 193.1 | 130.6 | 78.9  | 49.0  | 29.9  | 19.0  | 10.9  | 10.9  | 19.0  | 19.0  |
| 25°   | 225.8  | 190.4 | 119.7 | 65.3  | 35.4  | 21.8  | 10.9  | 5.4   | 10.9  | 29.9  | 35.4  |
| 27.5° | 231.2  | 187.7 | 114.2 | 54.4  | 27.2  | 19.0  | 8.2   | 19.0  | 32.6  | 32.6  | 32.6  |
| 30°   | 236.6  | 182.2 | 106.1 | 46.2  | 24.5  | 13.6  | 13.6  | 27.2  | 27.2  | 32.6  | 35.4  |
| 32.5° | 244.8  | 179.5 | 100.6 | 40.8  | 19.0  | 10.9  | 19.0  | 16.3  | 16.3  | 19.0  | 21.8  |
| 35°   | 261.1  | 182.2 | 95.2  | 40.8  | 19.0  | 13.6  | 16.3  | 8.2   | 5.4   | 5.4   | 5.4   |
| 37.5° | 282.9  | 185.0 | 87.0  | 35.4  | 16.3  | 16.3  | 8.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 318.2  | 193.1 | 81.6  | 32.6  | 13.6  | 13.6  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 378.1  | 209.4 | 78.9  | 29.9  | 13.6  | 10.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 497.7  | 247.5 | 73.4  | 27.2  | 13.6  | 5.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 715.3  | 337.3 | 70.7  | 21.8  | 8.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 1044.5 | 456.9 | 68.0  | 19.0  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 1332.8 | 481.4 | 46.2  | 16.3  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 1365.4 | 331.8 | 35.4  | 10.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 1088.0 | 214.9 | 29.9  | 8.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 824.1  | 163.2 | 27.2  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 791.5  | 146.9 | 27.2  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 873.1  | 127.8 | 24.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1419.8 | 106.1 | 21.8  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2467.0 | 92.5  | 19.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 3117.0 | 87.0  | 16.3  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 2717.2 | 78.9  | 16.3  | 5.4   | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1634.7 | 68.0  | 16.3  | 10.9  | 5.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 856.8  | 51.7  | 16.3  | 13.6  | 8.2   | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 416.1  | 46.2  | 19.0  | 13.6  | 10.9  | 5.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 163.2  | 38.1  | 21.8  | 19.0  | 13.6  | 8.2   | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 73.4   | 32.6  | 24.5  | 21.8  | 19.0  | 10.9  | 2.7   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 38.1   | 29.9  | 27.2  | 24.5  | 19.0  | 13.6  | 5.4   | 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   |

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



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-9

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-830-U-5WQ

Data in this report applies to families of products including GSS-SB1A-830-U-5WQ

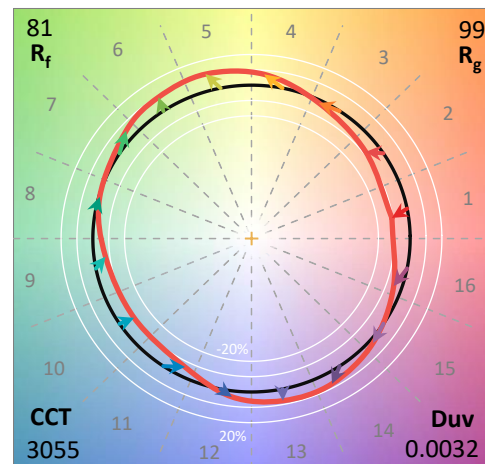
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-9  
 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-830-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

CCT (K): 3055  
 CIE  $u'$ : 0.2475  
 CIE  $v'$ : 0.5247  
 Duv: 0.0032  
 CIE x: 0.4377  
 CIE y: 0.4124  
 CIE z: 0.1499  
 Peak Wavelength (nm): 604  
 Dominant Wavelength (nm): 581  
 Purity: 55.16339  
 R<sub>f</sub>: 81.5  
 R<sub>g</sub>: 99.2

CRI (Ra): 80.9  
 R1: 79.5  
 R2: 85.6  
 R3: 92.1  
 R4: 82.4  
 R5: 78.9  
 R6: 81.7  
 R7: 85.1  
 R8: 61.9  
 R9: 6.8  
 R10: 67.1  
 R11: 82.5  
 R12: 63.4  
 R13: 80.2  
 R14: 95.1  
 R15: 71.7



### Test Conditions

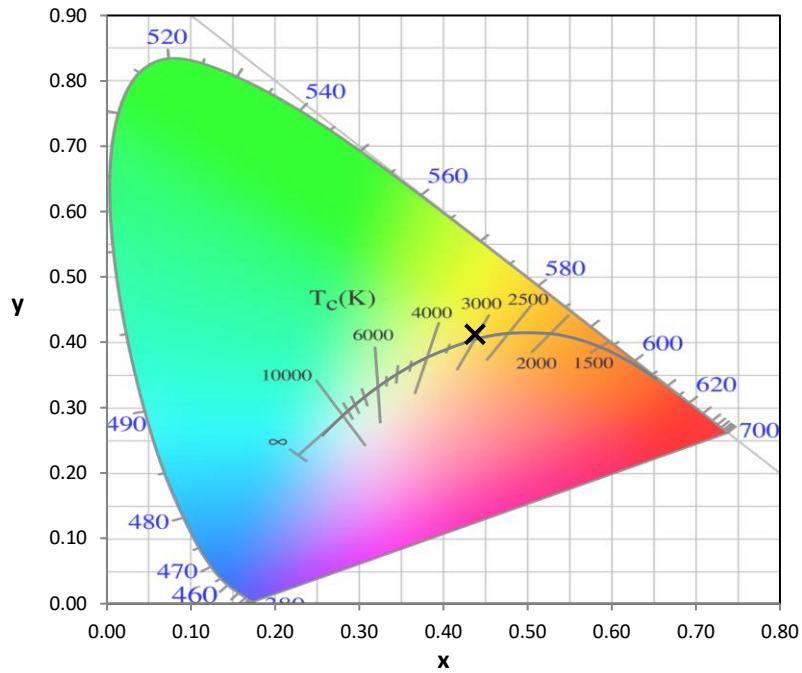
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-9

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

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-9

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 170                      | NR            | 620    | 938                      | NR            | 750    | 35                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 234                      | NR            | 625    | 894                      | NR            | 755    | 30                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 302                      | NR            | 630    | 847                      | NR            | 760    | 26                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 371                      | NR            | 635    | 788                      | NR            | 765    | 22                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 431                      | NR            | 640    | 728                      | NR            | 770    | 19                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 482                      | NR            | 645    | 665                      | NR            | 775    | 16                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 523                      | NR            | 650    | 603                      | NR            | 780    | 14                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 553                      | NR            | 655    | 542                      | NR            | 785    | 12                       | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 580                      | NR            | 660    | 484                      | NR            | 790    | 11                       | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 603                      | NR            | 665    | 430                      | NR            | 795    | 9                        | NR            | 925    | 0                        | NR            |
| 410    | 18                       | NR            | 540    | 622                      | NR            | 670    | 377                      | NR            | 800    | 8                        | NR            | 930    | 0                        | NR            |
| 415    | 36                       | NR            | 545    | 644                      | NR            | 675    | 330                      | NR            | 805    | 7                        | NR            | 935    | 0                        | NR            |
| 420    | 71                       | NR            | 550    | 668                      | NR            | 680    | 289                      | NR            | 810    | 6                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 693                      | NR            | 685    | 250                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 215                      | NR            | 560    | 720                      | NR            | 690    | 218                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 341                      | NR            | 565    | 754                      | NR            | 695    | 188                      | NR            | 825    | 4                        | NR            | 955    | 0                        | NR            |
| 440    | 514                      | NR            | 570    | 792                      | NR            | 700    | 161                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 576                      | NR            | 575    | 832                      | NR            | 705    | 139                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 358                      | NR            | 580    | 875                      | NR            | 710    | 119                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 222                      | NR            | 585    | 913                      | NR            | 715    | 102                      | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 170                      | NR            | 590    | 950                      | NR            | 720    | 88                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 115                      | NR            | 595    | 977                      | NR            | 725    | 76                       | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 88                       | NR            | 600    | 994                      | NR            | 730    | 65                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 87                       | NR            | 605    | 997                      | NR            | 735    | 56                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 96                       | NR            | 610    | 990                      | NR            | 740    | 47                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 122                      | NR            | 615    | 971                      | NR            | 745    | 41                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Scotopic Flux vs. Wavelength



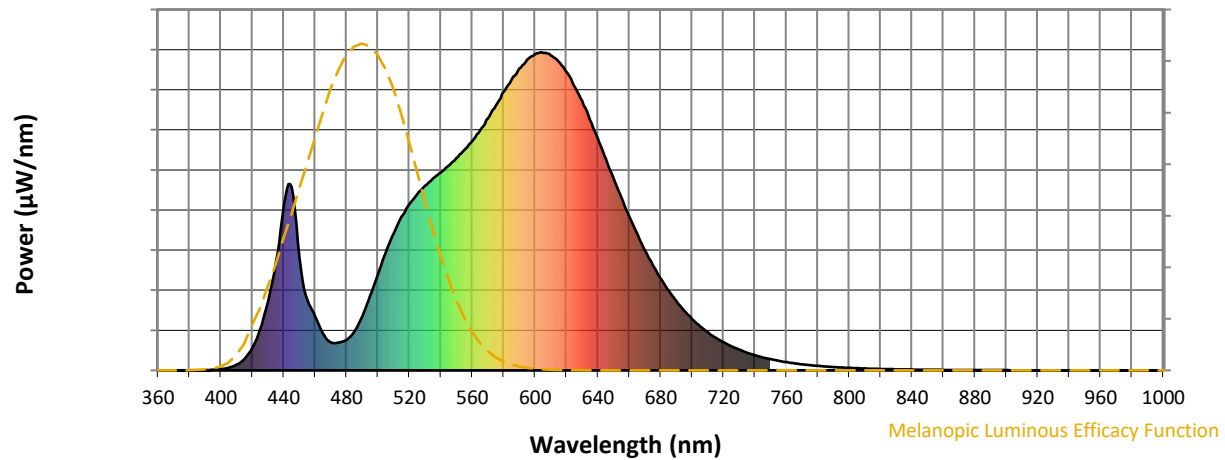
Scotopic Lumens: NR

S/P: 1.28

| 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    | 170                      | NR            | 620    | 938                      | NR            | 750    | 35                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 234                      | NR            | 625    | 894                      | NR            | 755    | 30                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 302                      | NR            | 630    | 847                      | NR            | 760    | 26                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 371                      | NR            | 635    | 788                      | NR            | 765    | 22                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 431                      | NR            | 640    | 728                      | NR            | 770    | 19                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 482                      | NR            | 645    | 665                      | NR            | 775    | 16                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 523                      | NR            | 650    | 603                      | NR            | 780    | 14                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 553                      | NR            | 655    | 542                      | NR            | 785    | 12                       | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 580                      | NR            | 660    | 484                      | NR            | 790    | 11                       | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 603                      | NR            | 665    | 430                      | NR            | 795    | 9                        | NR            | 925    | 0                        | NR            |
| 410    | 18                       | NR            | 540    | 622                      | NR            | 670    | 377                      | NR            | 800    | 8                        | NR            | 930    | 0                        | NR            |
| 415    | 36                       | NR            | 545    | 644                      | NR            | 675    | 330                      | NR            | 805    | 7                        | NR            | 935    | 0                        | NR            |
| 420    | 71                       | NR            | 550    | 668                      | NR            | 680    | 289                      | NR            | 810    | 6                        | NR            | 940    | 0                        | NR            |
| 425    | 131                      | NR            | 555    | 693                      | NR            | 685    | 250                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 215                      | NR            | 560    | 720                      | NR            | 690    | 218                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 341                      | NR            | 565    | 754                      | NR            | 695    | 188                      | NR            | 825    | 4                        | NR            | 955    | 0                        | NR            |
| 440    | 514                      | NR            | 570    | 792                      | NR            | 700    | 161                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 576                      | NR            | 575    | 832                      | NR            | 705    | 139                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 358                      | NR            | 580    | 875                      | NR            | 710    | 119                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 222                      | NR            | 585    | 913                      | NR            | 715    | 102                      | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 170                      | NR            | 590    | 950                      | NR            | 720    | 88                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 115                      | NR            | 595    | 977                      | NR            | 725    | 76                       | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 88                       | NR            | 600    | 994                      | NR            | 730    | 65                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 87                       | NR            | 605    | 997                      | NR            | 735    | 56                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 96                       | NR            | 610    | 990                      | NR            | 740    | 47                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 122                      | NR            | 615    | 971                      | NR            | 745    | 41                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.33

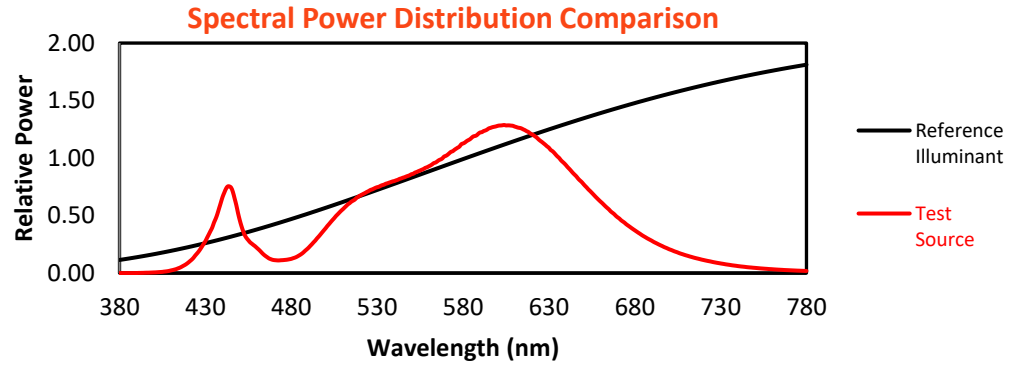
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 170                                    | NR                             | 620               | 938                                    | NR                             | 750               | 35                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 234                                    | NR                             | 625               | 894                                    | NR                             | 755               | 30                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 302                                    | NR                             | 630               | 847                                    | NR                             | 760               | 26                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 371                                    | NR                             | 635               | 788                                    | NR                             | 765               | 22                                     | NR                             | 895               | 1                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 431                                    | NR                             | 640               | 728                                    | NR                             | 770               | 19                                     | NR                             | 900               | 1                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 482                                    | NR                             | 645               | 665                                    | NR                             | 775               | 16                                     | NR                             | 905               | 1                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 523                                    | NR                             | 650               | 603                                    | NR                             | 780               | 14                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 2                                      | NR                             | 525               | 553                                    | NR                             | 655               | 542                                    | NR                             | 785               | 12                                     | NR                             | 915               | 0                                      | NR                             |
| 400               | 4                                      | NR                             | 530               | 580                                    | NR                             | 660               | 484                                    | NR                             | 790               | 11                                     | NR                             | 920               | 0                                      | NR                             |
| 405               | 8                                      | NR                             | 535               | 603                                    | NR                             | 665               | 430                                    | NR                             | 795               | 9                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 18                                     | NR                             | 540               | 622                                    | NR                             | 670               | 377                                    | NR                             | 800               | 8                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 36                                     | NR                             | 545               | 644                                    | NR                             | 675               | 330                                    | NR                             | 805               | 7                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 71                                     | NR                             | 550               | 668                                    | NR                             | 680               | 289                                    | NR                             | 810               | 6                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 131                                    | NR                             | 555               | 693                                    | NR                             | 685               | 250                                    | NR                             | 815               | 5                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 215                                    | NR                             | 560               | 720                                    | NR                             | 690               | 218                                    | NR                             | 820               | 4                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 341                                    | NR                             | 565               | 754                                    | NR                             | 695               | 188                                    | NR                             | 825               | 4                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 514                                    | NR                             | 570               | 792                                    | NR                             | 700               | 161                                    | NR                             | 830               | 3                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 576                                    | NR                             | 575               | 832                                    | NR                             | 705               | 139                                    | NR                             | 835               | 3                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 358                                    | NR                             | 580               | 875                                    | NR                             | 710               | 119                                    | NR                             | 840               | 3                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 222                                    | NR                             | 585               | 913                                    | NR                             | 715               | 102                                    | NR                             | 845               | 2                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 170                                    | NR                             | 590               | 950                                    | NR                             | 720               | 88                                     | NR                             | 850               | 2                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 115                                    | NR                             | 595               | 977                                    | NR                             | 725               | 76                                     | NR                             | 855               | 2                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 88                                     | NR                             | 600               | 994                                    | NR                             | 730               | 65                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 87                                     | NR                             | 605               | 997                                    | NR                             | 735               | 56                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 96                                     | NR                             | 610               | 990                                    | NR                             | 740               | 47                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 122                                    | NR                             | 615               | 971                                    | NR                             | 745               | 41                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

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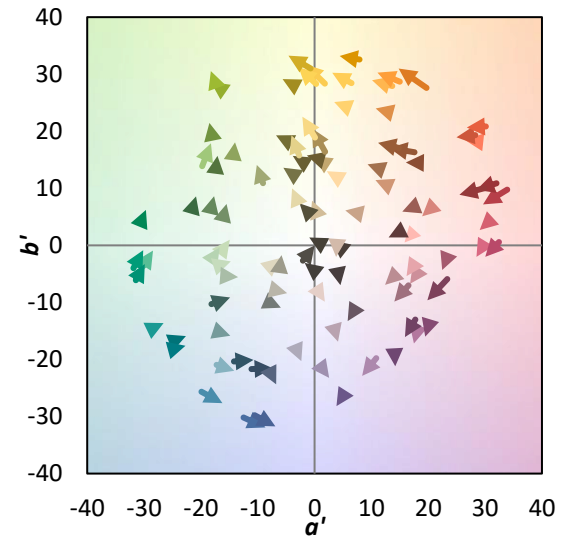
TM-30-18

### Summary

$R_f = 81.5$   
 $R_g = 99.2$   
 $CIE R_a = 80.9$   
 $R_9 = 6.8$

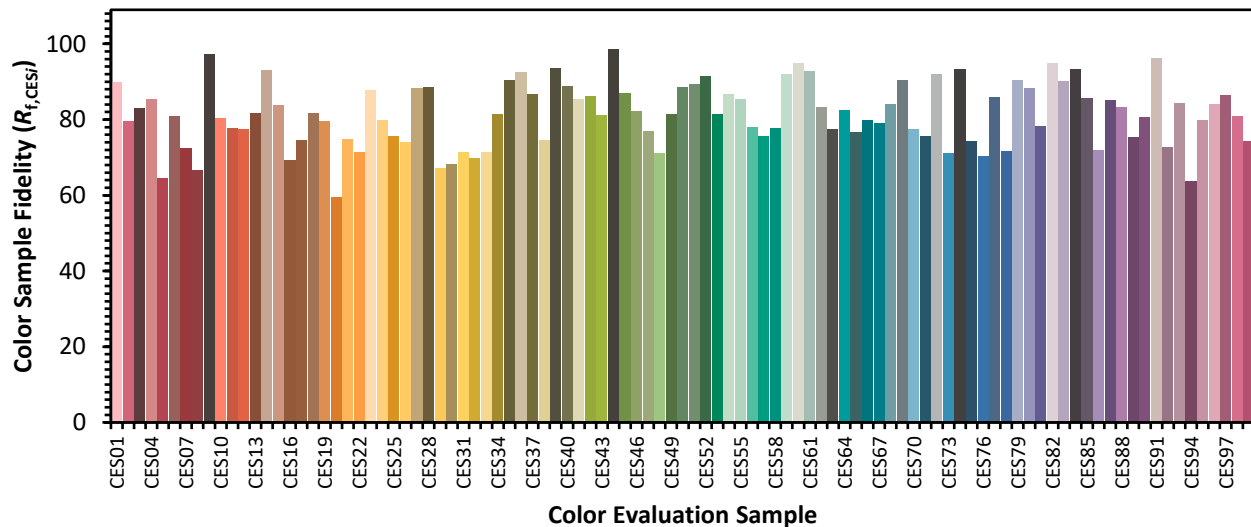


### Color Vector Graphics

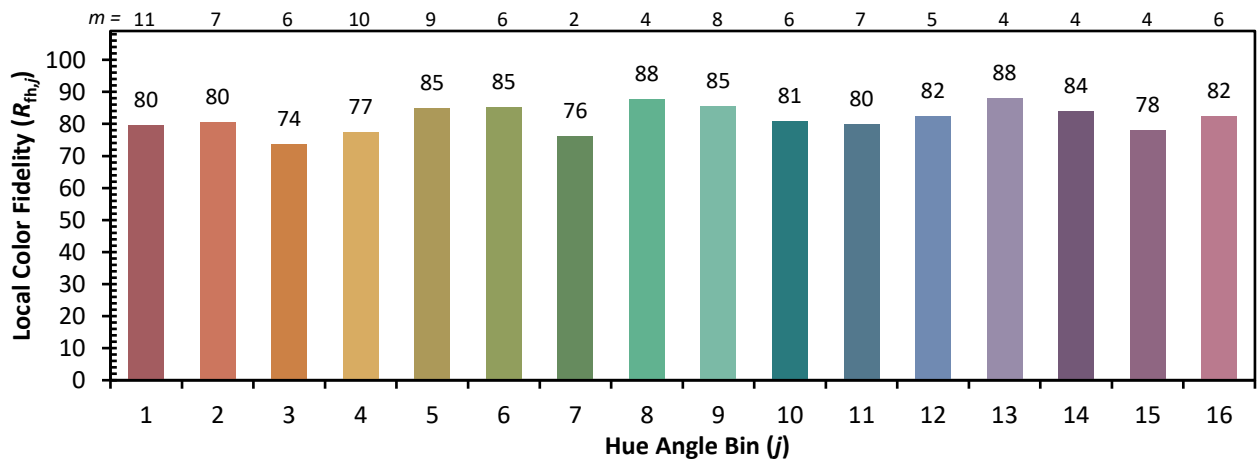
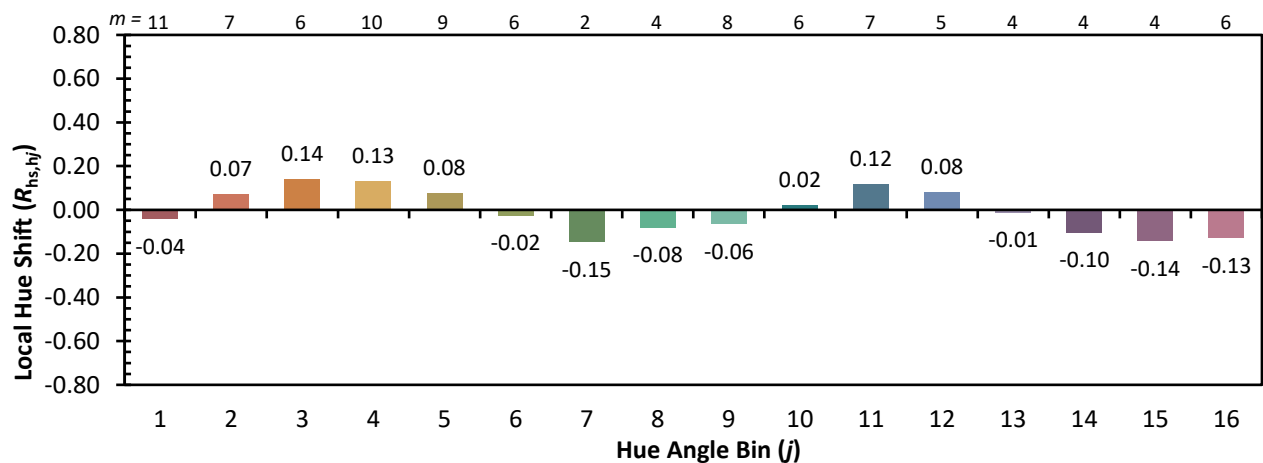


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 91 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 93 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 90 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 77 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**


(END OF REPORT)