

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: STREETWORKS

Report Number: P1057642

Luminaire Tested: **GAP-SA2C-830-U-T4BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1057642  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GAP-SA2C-830-U-T4BC  
Description: GALLEON PEDESTRAIAN COMPANION 1050mA 2xLight Square PACKAGE 80CRI  
3000K FIXTURE w/ TYPE IV ANGLED BACKLIGHT CONTROL  
Light Source: (28) 3000K CCT, 80 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8659.7 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Luminous Opening: Rectangular (W 1.33' x L: 0.67' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 94.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

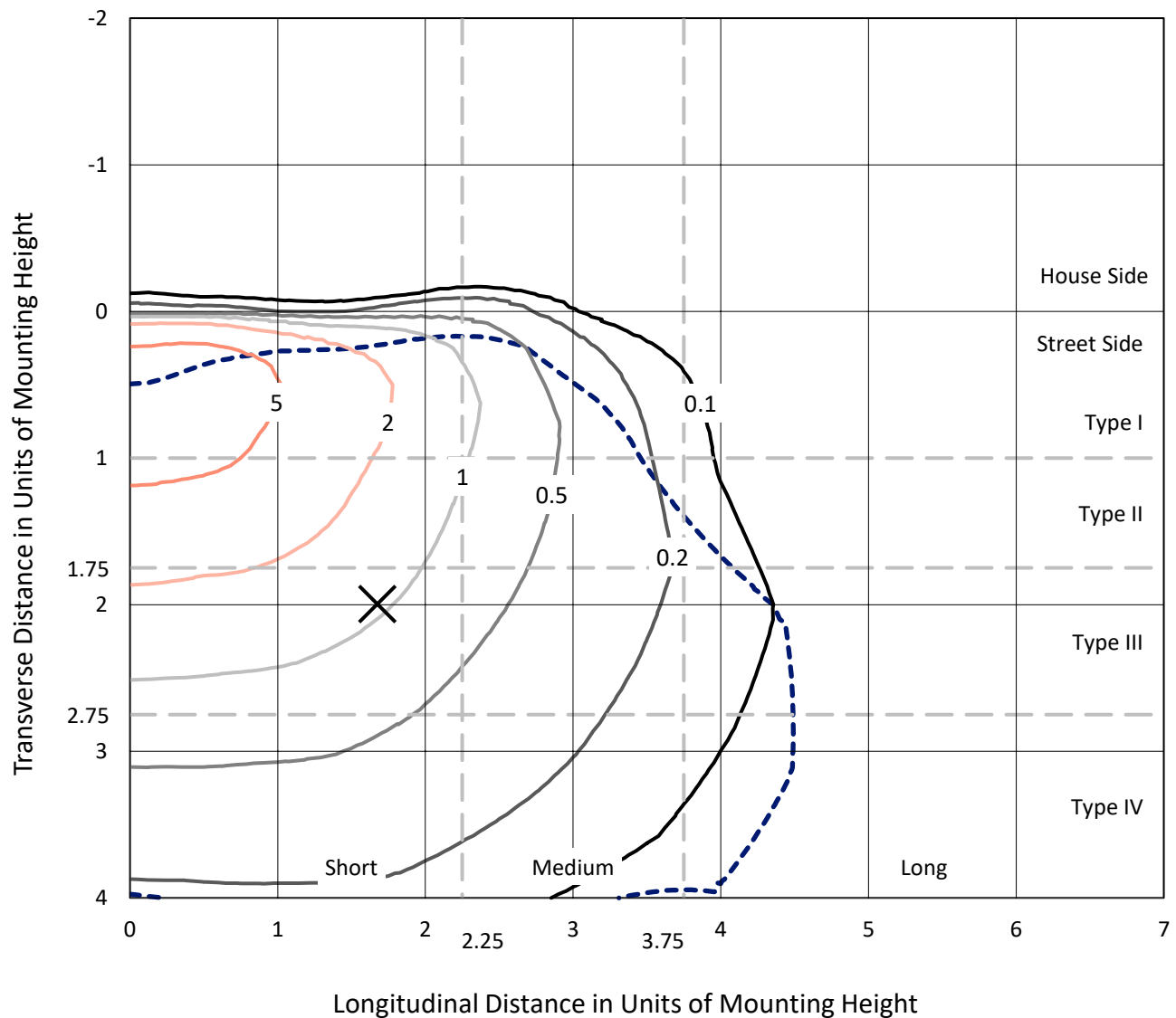


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

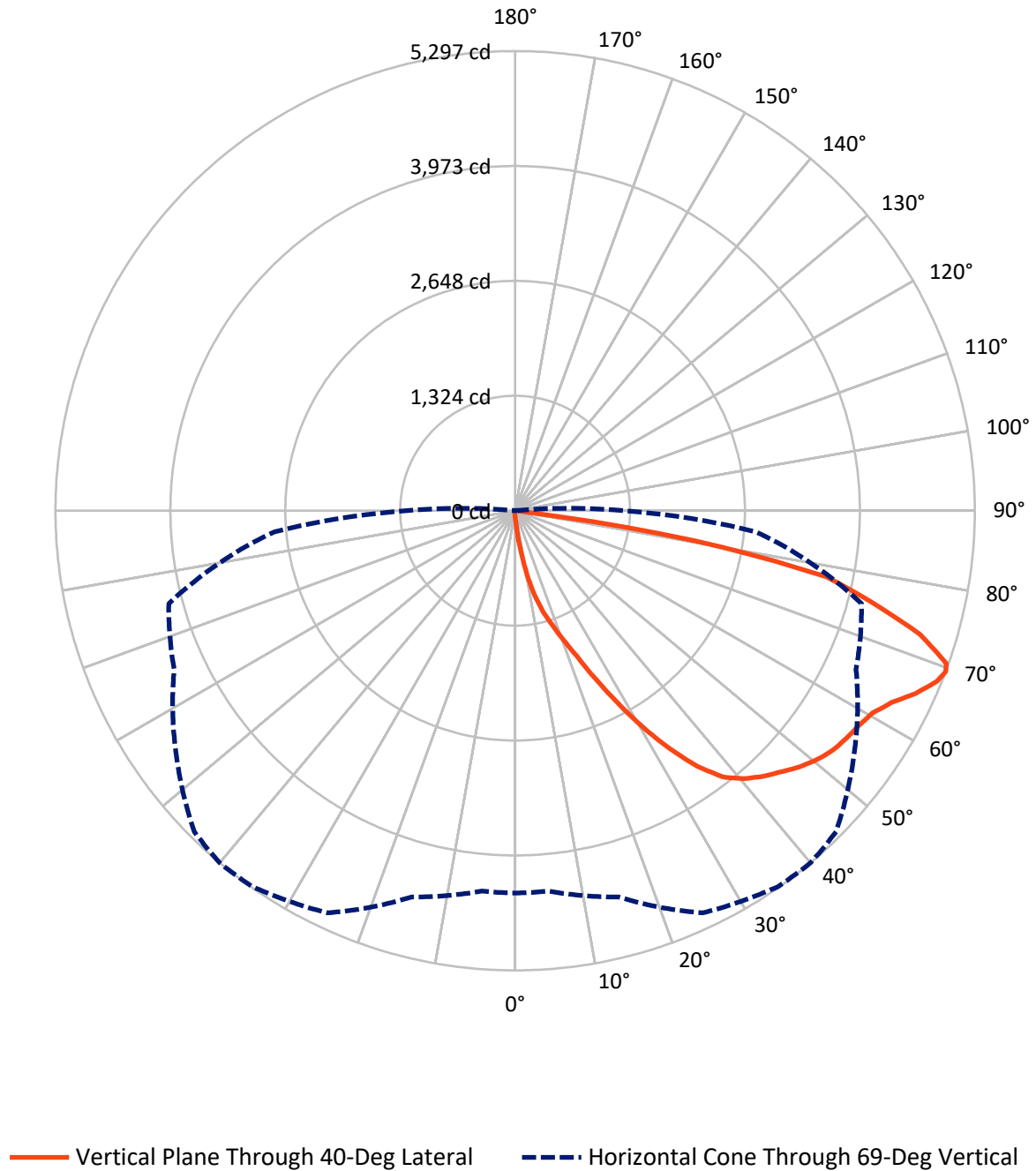


Based on 15 foot mounting height. Maximum calculated value = 9.9 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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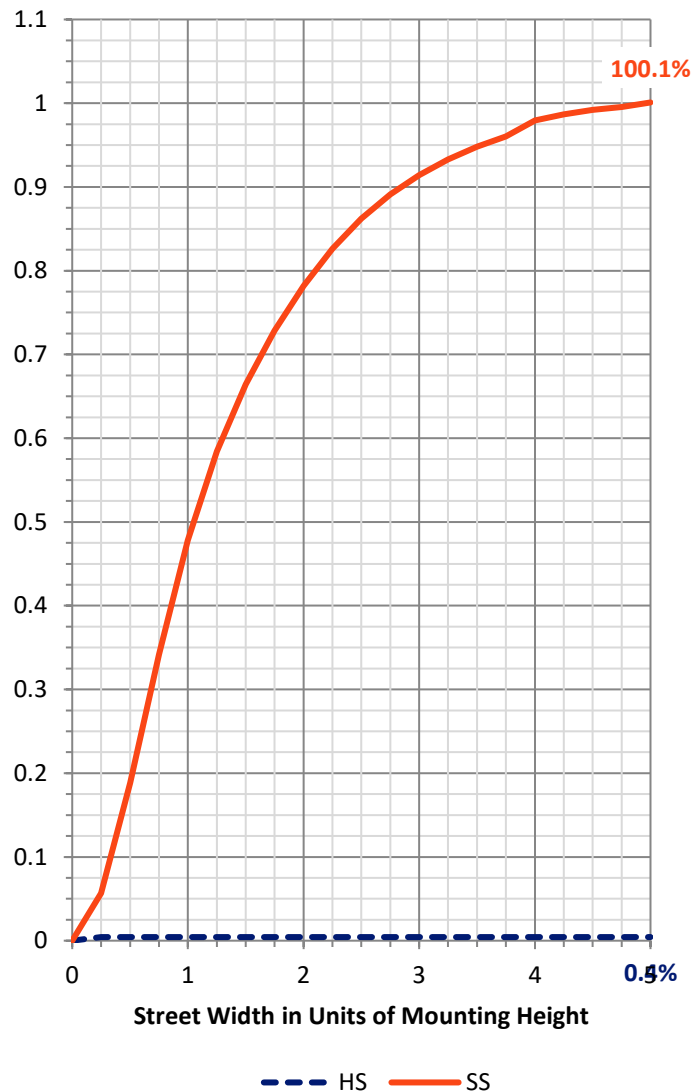
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 37.9     | 0.0    | 37.9   |
|                    | % Fixture | 0.4      | 0.0    | 0.4    |
| <b>Street Side</b> | Lumens    | 8621.7   | 0.0    | 8621.7 |
|                    | % Fixture | 99.6     | 0.0    | 99.6   |
| <b>Total</b>       | Lumens    | 8659.7   | 0.0    | 8659.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 18.2   | 0.2       |
| 10°-20°   | 138.3  | 1.6       |
| 20°-30°   | 416.5  | 4.8       |
| 30°-40°   | 917.2  | 10.6      |
| 40°-50°   | 1409.4 | 16.3      |
| 50°-60°   | 1735.5 | 20.0      |
| 60°-70°   | 2191.0 | 25.3      |
| 70°-80°   | 1685.3 | 19.5      |
| 80°-90°   | 148.1  | 1.7       |
| 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°    | 8659.7 | 100.0     |
| 0°-180°   | 8659.7 | 100.0     |



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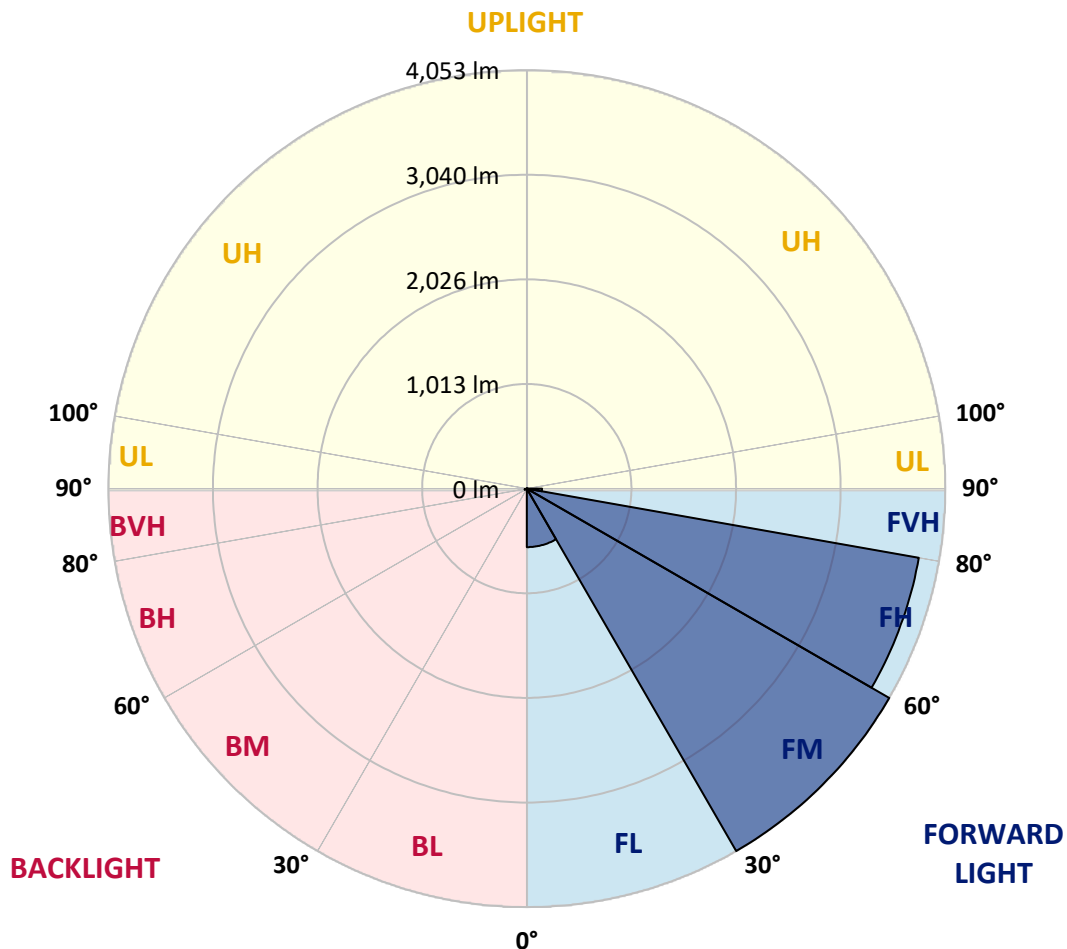
CATALOG NUMBER: GAP-SA2C-830-U-T4BC

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 566.7  | 6.5       |                         |      |         |
| FM   | (30°-60°)   | 4052.8 | 46.8      |                         |      |         |
| FH   | (60°-80°)   | 3854.6 | 44.5      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 147.7  | 1.7       |                         |      | G2/225  |
| BL   | (0°-30°)    | 6.5    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 9.3    | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 21.8   | 0.3       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 0.4    | 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 IV Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 40°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   | 63.3   |
| 2.5°  | 141.3  | 139.7  | 133.2  | 125.1  | 118.6  | 113.7  | 107.2  | 97.5   | 87.7   | 76.3   | 68.2   |
| 5°    | 370.3  | 368.7  | 342.7  | 310.2  | 266.4  | 237.1  | 207.9  | 160.8  | 121.8  | 94.2   | 71.5   |
| 7.5°  | 685.5  | 680.6  | 656.2  | 605.9  | 513.3  | 462.9  | 409.3  | 287.5  | 186.8  | 116.9  | 76.3   |
| 10°   | 997.3  | 994.1  | 963.2  | 890.1  | 789.4  | 739.1  | 667.6  | 490.5  | 294.0  | 152.7  | 82.8   |
| 12.5° | 1180.9 | 1189.0 | 1166.2 | 1132.1 | 1046.0 | 998.9  | 917.7  | 713.1  | 451.6  | 209.5  | 91.0   |
| 15°   | 1331.9 | 1335.2 | 1314.1 | 1292.9 | 1245.8 | 1206.9 | 1138.6 | 950.2  | 640.0  | 285.9  | 100.7  |
| 17.5° | 1518.7 | 1513.8 | 1491.1 | 1466.7 | 1414.8 | 1385.5 | 1341.7 | 1169.5 | 841.4  | 394.7  | 113.7  |
| 20°   | 1755.9 | 1742.9 | 1716.9 | 1674.6 | 1617.8 | 1582.1 | 1536.6 | 1393.6 | 1042.8 | 514.9  | 129.9  |
| 22.5° | 2059.6 | 2043.4 | 2015.8 | 1976.8 | 1876.1 | 1820.8 | 1762.4 | 1585.3 | 1265.3 | 667.6  | 151.1  |
| 25°   | 2410.5 | 2402.3 | 2373.1 | 2317.9 | 2210.7 | 2137.6 | 2043.4 | 1809.5 | 1486.2 | 830.0  | 177.0  |
| 27.5° | 2823.0 | 2808.4 | 2769.4 | 2704.5 | 2589.1 | 2493.3 | 2376.3 | 2056.4 | 1697.4 | 1002.2 | 209.5  |
| 30°   | 3284.3 | 3251.8 | 3172.2 | 3115.4 | 2980.6 | 2886.4 | 2749.9 | 2384.5 | 1915.0 | 1182.5 | 243.6  |
| 32.5° | 3713.1 | 3670.9 | 3555.6 | 3477.6 | 3352.5 | 3268.1 | 3143.0 | 2715.8 | 2160.3 | 1370.9 | 287.5  |
| 35°   | 4101.3 | 4055.9 | 3869.1 | 3750.5 | 3687.2 | 3615.7 | 3489.0 | 3094.3 | 2425.1 | 1572.3 | 337.9  |
| 37.5° | 4429.5 | 4384.0 | 4143.6 | 3956.8 | 3917.8 | 3893.4 | 3791.1 | 3414.3 | 2725.6 | 1799.7 | 396.3  |
| 40°   | 4613.0 | 4583.8 | 4375.9 | 4164.7 | 4090.0 | 4060.7 | 3986.0 | 3682.3 | 3060.2 | 2027.1 | 464.5  |
| 42.5° | 4669.8 | 4652.0 | 4483.1 | 4379.1 | 4242.7 | 4184.2 | 4094.8 | 3886.9 | 3347.7 | 2282.1 | 542.5  |
| 45°   | 4639.0 | 4619.5 | 4496.0 | 4520.4 | 4406.7 | 4293.0 | 4171.2 | 4026.6 | 3589.7 | 2582.6 | 640.0  |
| 47.5° | 4507.4 | 4500.9 | 4416.5 | 4554.5 | 4541.5 | 4411.6 | 4260.5 | 4119.2 | 3797.6 | 2873.4 | 761.8  |
| 50°   | 4185.8 | 4182.6 | 4221.5 | 4507.4 | 4630.9 | 4509.0 | 4358.0 | 4202.1 | 3963.3 | 3164.1 | 917.7  |
| 52.5° | 3752.1 | 3774.9 | 3971.4 | 4419.7 | 4656.9 | 4585.4 | 4455.4 | 4296.3 | 4099.7 | 3454.9 | 1127.3 |
| 55°   | 3523.1 | 3542.6 | 3800.9 | 4323.9 | 4652.0 | 4630.9 | 4554.5 | 4387.2 | 4224.8 | 3693.6 | 1406.6 |
| 57.5° | 3696.9 | 3675.8 | 3794.4 | 4310.9 | 4630.9 | 4669.8 | 4626.0 | 4458.7 | 4338.5 | 3904.8 | 1793.2 |
| 60°   | 4026.6 | 4020.1 | 4034.8 | 4403.5 | 4674.7 | 4733.2 | 4702.3 | 4507.4 | 4450.6 | 4065.6 | 2218.8 |
| 62.5° | 4359.6 | 4341.7 | 4356.4 | 4658.5 | 4827.4 | 4868.0 | 4830.7 | 4587.0 | 4538.3 | 4182.6 | 2680.1 |
| 65°   | 4525.3 | 4512.3 | 4580.5 | 4915.1 | 5045.1 | 5072.7 | 5023.9 | 4715.3 | 4552.9 | 4242.7 | 2970.8 |
| 67.5° | 4504.2 | 4500.9 | 4660.1 | 5095.4 | 5227.0 | 5243.2 | 5202.6 | 4843.6 | 4491.2 | 4241.0 | 3001.7 |
| 69°   | 4405.1 | 4398.6 | 4608.1 | 5113.3 | 5285.5 | 5296.8 | 5230.2 | 4778.7 | 4335.2 | 4132.2 | 2782.4 |
| 70°   | 4288.1 | 4294.6 | 4531.8 | 5080.8 | 5287.1 | 5270.8 | 5116.5 | 4686.1 | 4216.7 | 4007.1 | 2503.0 |
| 72.5° | 3852.8 | 3893.4 | 4218.3 | 4868.0 | 5064.6 | 4882.6 | 4681.2 | 4382.3 | 3990.9 | 3415.9 | 1747.7 |
| 75°   | 3222.6 | 3279.5 | 3698.5 | 4426.2 | 4354.7 | 4263.8 | 4239.4 | 4012.0 | 3615.7 | 2269.1 | 1242.6 |
| 77.5° | 1575.6 | 1764.0 | 2624.9 | 3399.7 | 3573.5 | 3666.0 | 3631.9 | 3316.8 | 2905.9 | 1114.3 | 810.5  |
| 80°   | 82.8   | 86.1   | 138.1  | 324.9  | 1655.2 | 2105.1 | 2589.1 | 2532.3 | 2199.3 | 508.4  | 427.2  |
| 82.5° | 43.9   | 43.9   | 48.7   | 56.9   | 66.6   | 79.6   | 211.2  | 1450.5 | 1307.6 | 261.5  | 159.2  |
| 85°   | 24.4   | 24.4   | 29.2   | 39.0   | 50.4   | 58.5   | 66.6   | 87.7   | 281.0  | 94.2   | 26.0   |
| 87.5° | 11.4   | 14.6   | 19.5   | 27.6   | 35.7   | 45.5   | 52.0   | 65.0   | 82.8   | 79.6   | 4.9    |
| 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: GAP-SA2C-830-U-T4BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 63.3   | 63.3 | 63.3 | 63.3 | 63.3 | 63.3 | 63.3 | 63.3 | 63.3 | 63.3 | 63.3 |
| 2.5°  | 63.3   | 60.1 | 55.2 | 52.0 | 50.4 | 47.1 | 43.9 | 42.2 | 40.6 | 39.0 | 40.6 |
| 5°    | 63.3   | 58.5 | 50.4 | 45.5 | 42.2 | 37.4 | 34.1 | 32.5 | 30.9 | 29.2 | 29.2 |
| 7.5°  | 63.3   | 55.2 | 45.5 | 39.0 | 34.1 | 30.9 | 26.0 | 24.4 | 22.7 | 21.1 | 21.1 |
| 10°   | 65.0   | 52.0 | 40.6 | 34.1 | 29.2 | 24.4 | 21.1 | 17.9 | 16.2 | 16.2 | 16.2 |
| 12.5° | 65.0   | 48.7 | 35.7 | 29.2 | 24.4 | 19.5 | 14.6 | 11.4 | 9.7  | 9.7  | 9.7  |
| 15°   | 65.0   | 45.5 | 32.5 | 24.4 | 19.5 | 14.6 | 8.1  | 4.9  | 3.2  | 3.2  | 1.6  |
| 17.5° | 66.6   | 43.9 | 29.2 | 21.1 | 14.6 | 8.1  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  |
| 20°   | 69.8   | 42.2 | 26.0 | 17.9 | 9.7  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 22.5° | 73.1   | 40.6 | 22.7 | 13.0 | 4.9  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 25°   | 79.6   | 40.6 | 21.1 | 11.4 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 27.5° | 86.1   | 40.6 | 16.2 | 6.5  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 91.0   | 40.6 | 14.6 | 4.9  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 97.5   | 40.6 | 13.0 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 102.3  | 39.0 | 9.7  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 107.2  | 37.4 | 8.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 113.7  | 35.7 | 6.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 120.2  | 32.5 | 4.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 128.3  | 30.9 | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 139.7  | 29.2 | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 155.9  | 29.2 | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 183.5  | 29.2 | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 229.0  | 29.2 | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 308.6  | 29.2 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 464.5  | 29.2 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 717.9  | 32.5 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 1098.0 | 39.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1392.0 | 47.1 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 69°   | 1257.2 | 43.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1065.5 | 34.1 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 592.9  | 17.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 308.6  | 8.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 131.6  | 4.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 39.0   | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 13.0   | 3.2  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 4.9    | 3.2  | 1.6  | 1.6  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 3.2    | 1.6  | 1.6  | 1.6  | 1.6  | 0.0  | 0.0  | 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

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

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3000K 4-step quadrangle

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### 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<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       | 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

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



### Color Vector Graphics

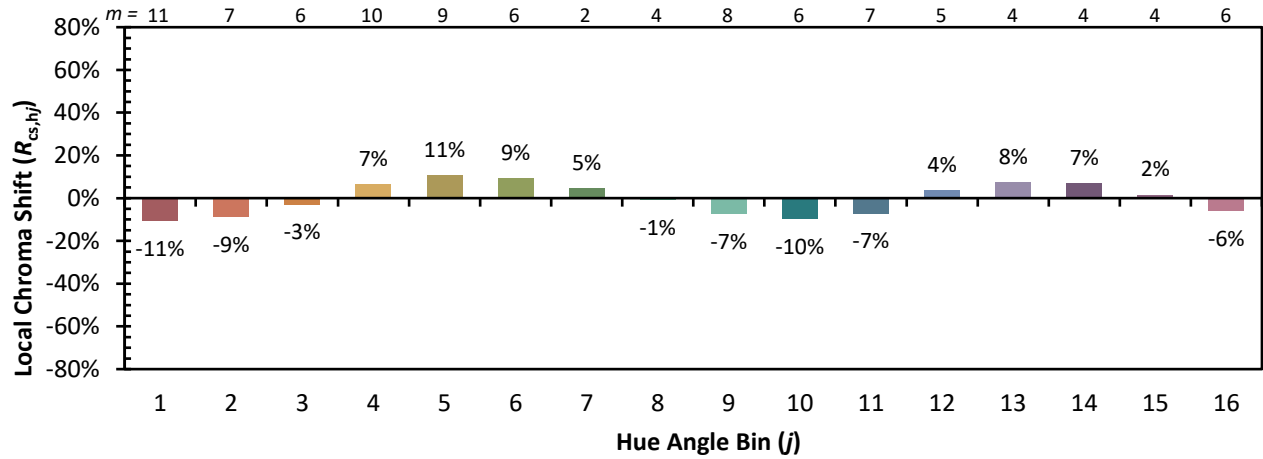


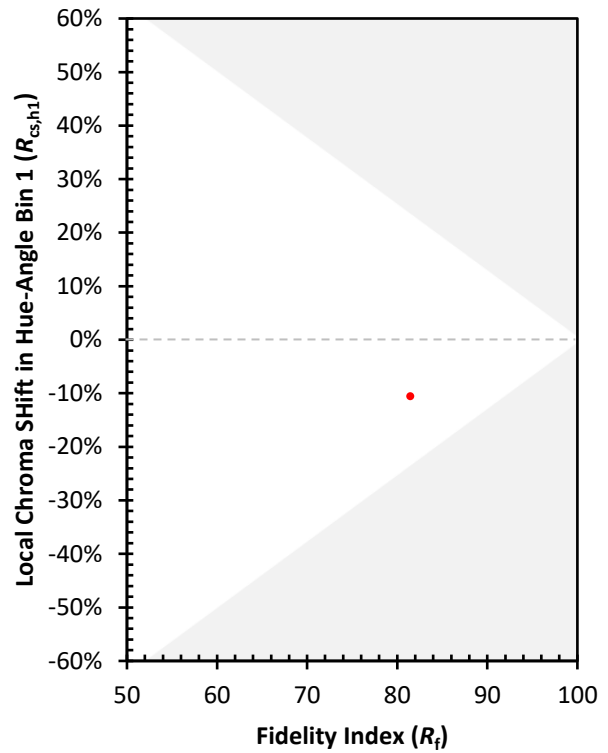
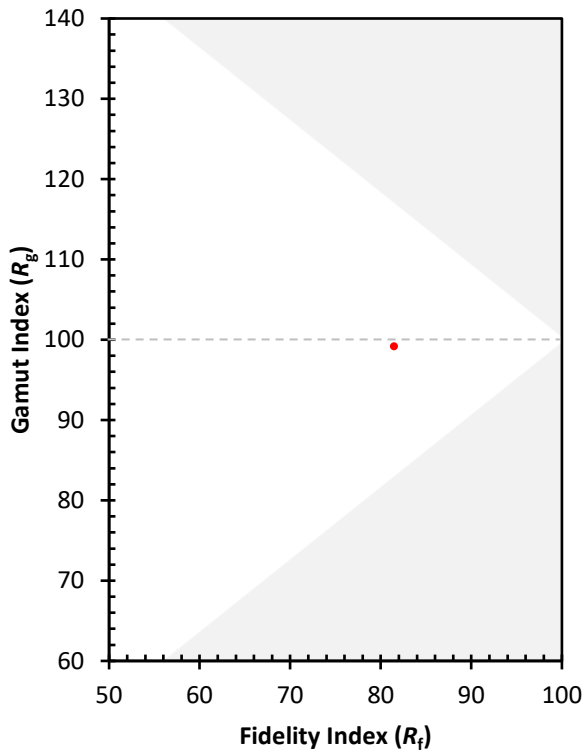
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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)