

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: P324323

Luminaire Tested: **GLEON-SA9B-830-U-SLL-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P324323  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-27)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GLEON-SA9B-830-U-SLL-HSS  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(9) 80 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 30098 lumens  
Efficiency: N/A  
Efficacy: 80.5 lumens/watt  
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G4

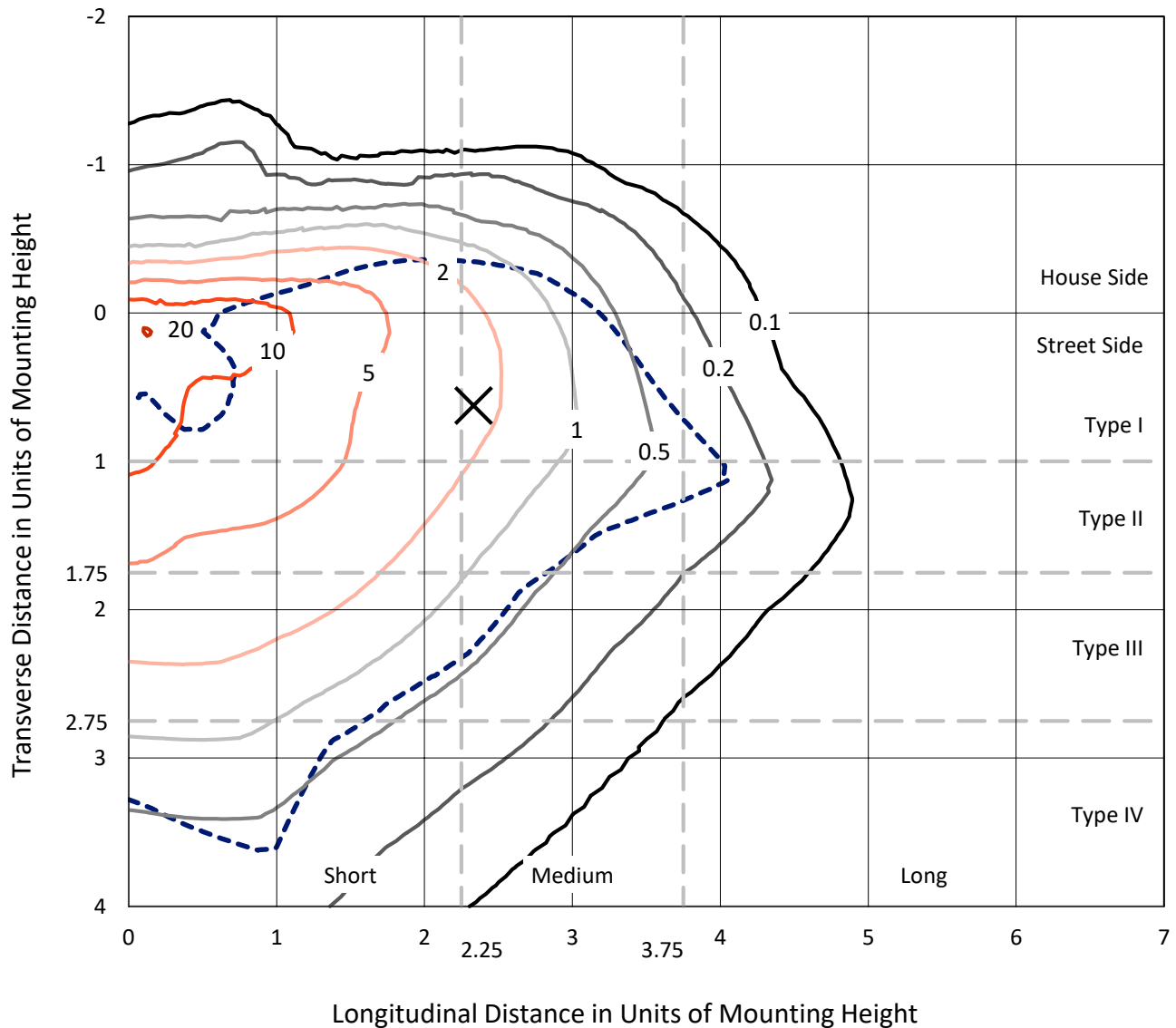
Input Watts (W): 374  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

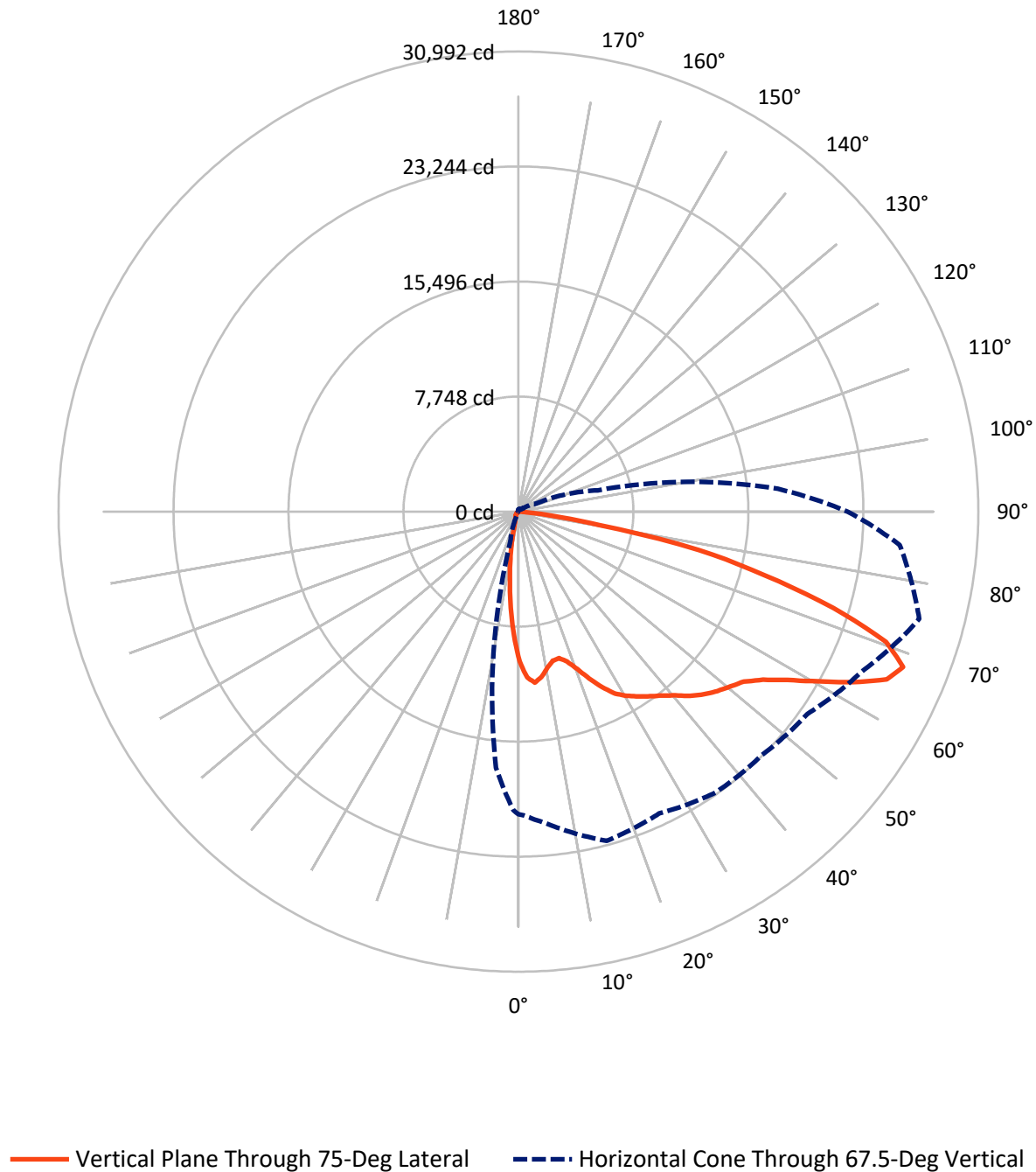
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 20.9 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4516.5   | 0.0    | 4516.5  |
|                    | % Fixture | 15.0     | 0.0    | 15.0    |
| <b>Street Side</b> | Lumens    | 25581.5  | 0.0    | 25581.5 |
|                    | % Fixture | 85.0     | 0.0    | 85.0    |
| <b>Total</b>       | Lumens    | 30098.0  | 0.0    | 30098.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 765.9   | 2.5       |
| 10°-20°   | 1508.1  | 5.0       |
| 20°-30°   | 2133.6  | 7.1       |
| 30°-40°   | 3137.0  | 10.4      |
| 40°-50°   | 4508.8  | 15.0      |
| 50°-60°   | 6347.3  | 21.1      |
| 60°-70°   | 7413.0  | 24.6      |
| 70°-80°   | 3781.9  | 12.6      |
| 80°-90°   | 502.4   | 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°    | 30098.0 | 100.0     |
| 0°-180°   | 30098.0 | 100.0     |

**Coefficient of Utilization**



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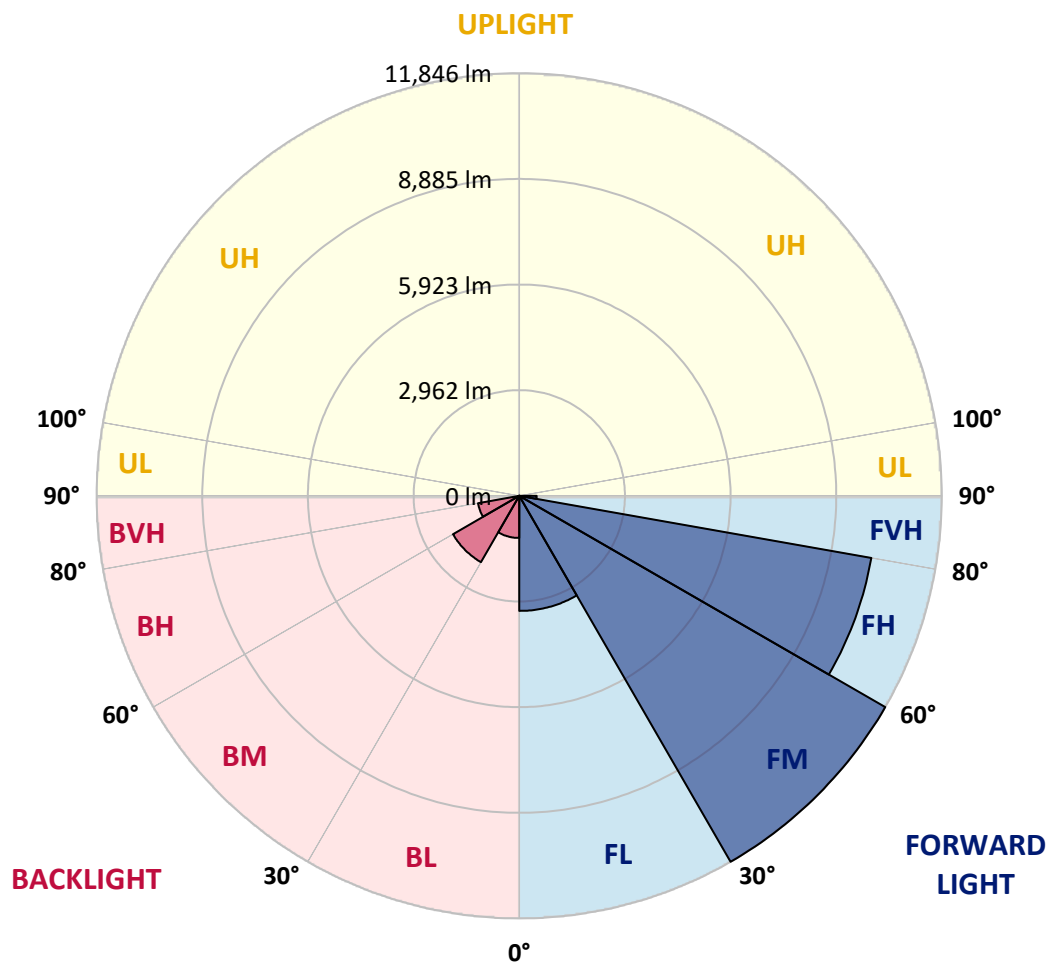
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 3226.5  | 10.7      |                         |      |          |
| FM   | (30°-60°)   | 11846.0 | 39.4      |                         |      |          |
| FH   | (60°-80°)   | 10021.8 | 33.3      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 487.2   | 1.6       |                         |      | G3/500   |
| BL   | (0°-30°)    | 1181.1  | 3.9       | B3/2500                 |      |          |
| BM   | (30°-60°)   | 2147.0  | 7.1       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 1173.1  | 3.9       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 15.2    | 0.1       |                         |      | G1/100   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 |
| 2.5°  | 10945.7 | 10962.8 | 11051.2 | 11256.5 | 11480.4 | 11497.5 | 11648.6 | 11493.2 | 11440.4 | 11189.5 | 10930.0 |
| 5°    | 11028.4 | 11094.0 | 11397.7 | 12000.8 | 12524.0 | 12692.3 | 12812.0 | 12506.9 | 12186.1 | 11573.0 | 10918.6 |
| 7.5°  | 10362.6 | 10472.3 | 10950.0 | 12082.0 | 13017.4 | 13430.8 | 13509.3 | 13031.6 | 12246.0 | 11236.6 | 10252.8 |
| 10°   | 9509.9  | 9635.4  | 10211.4 | 11603.0 | 12887.6 | 13596.2 | 13704.6 | 13078.7 | 11949.5 | 10691.9 | 9532.8  |
| 12.5° | 8819.9  | 8966.7  | 9555.6  | 11064.0 | 12441.3 | 13225.5 | 13439.4 | 12920.4 | 11692.8 | 10305.5 | 9040.9  |
| 15°   | 8501.9  | 8670.2  | 9288.9  | 10716.2 | 11946.6 | 12564.0 | 12740.8 | 12516.9 | 11550.2 | 10244.2 | 8926.8  |
| 17.5° | 8684.4  | 8866.9  | 9505.7  | 10746.1 | 11481.8 | 11745.6 | 11888.1 | 11979.4 | 11550.2 | 10613.5 | 9260.4  |
| 20°   | 9433.0  | 9629.7  | 10305.5 | 11049.8 | 11096.8 | 10998.5 | 11151.0 | 11471.8 | 11684.3 | 11315.0 | 10061.7 |
| 22.5° | 10468.1 | 10699.0 | 11461.8 | 11570.2 | 10908.6 | 10536.5 | 10556.5 | 11059.8 | 11928.1 | 12204.7 | 11173.8 |
| 25°   | 11729.9 | 12012.2 | 12787.8 | 12345.8 | 10987.1 | 10261.3 | 10254.2 | 10720.4 | 12166.2 | 13095.8 | 12412.8 |
| 27.5° | 12983.1 | 13294.0 | 13975.5 | 13292.5 | 11310.7 | 10211.4 | 10197.2 | 10617.8 | 12398.6 | 13888.5 | 13765.9 |
| 30°   | 14033.9 | 14336.2 | 14923.6 | 13978.3 | 11660.0 | 10328.3 | 10259.9 | 10727.6 | 12536.9 | 14403.2 | 14752.5 |
| 32.5° | 14889.4 | 15131.8 | 15606.6 | 14450.3 | 12033.6 | 10555.0 | 10406.8 | 11021.3 | 12772.1 | 14838.1 | 15659.3 |
| 35°   | 15830.4 | 16085.6 | 16275.3 | 14899.4 | 12452.8 | 10881.5 | 10669.1 | 11487.5 | 13134.3 | 15280.1 | 16653.1 |
| 37.5° | 16904.0 | 17157.8 | 17135.0 | 15310.0 | 12984.6 | 11421.9 | 11286.5 | 12226.1 | 13697.5 | 15717.8 | 17762.4 |
| 40°   | 17954.8 | 18214.3 | 18029.0 | 15759.1 | 13609.1 | 12313.0 | 12213.2 | 13335.3 | 14451.7 | 16278.1 | 19062.7 |
| 42.5° | 18938.6 | 19219.5 | 18823.1 | 16184.0 | 14353.3 | 13436.5 | 13607.6 | 14763.9 | 15395.6 | 16968.2 | 20183.3 |
| 45°   | 19731.4 | 20017.9 | 19489.0 | 16597.5 | 15137.5 | 14799.6 | 15314.3 | 16346.6 | 16530.5 | 17551.3 | 20940.4 |
| 47.5° | 20307.4 | 20578.3 | 19950.9 | 17011.0 | 16141.2 | 16466.3 | 17363.1 | 18006.2 | 17555.6 | 18057.5 | 21477.9 |
| 50°   | 20675.2 | 20886.2 | 20086.4 | 17528.5 | 17458.7 | 18411.1 | 19497.5 | 19811.2 | 18520.9 | 18513.7 | 22130.9 |
| 52.5° | 20909.0 | 21004.6 | 20186.2 | 18068.9 | 18833.1 | 20528.4 | 21587.7 | 21686.1 | 19514.6 | 19015.6 | 23010.6 |
| 55°   | 21714.6 | 21791.6 | 20893.4 | 18723.3 | 19969.5 | 22383.3 | 23478.3 | 23387.0 | 20639.6 | 19998.0 | 24048.6 |
| 57.5° | 23089.1 | 23170.3 | 22354.8 | 19664.3 | 20889.1 | 23529.6 | 24848.5 | 25012.4 | 21958.4 | 21378.1 | 25160.7 |
| 60°   | 23779.1 | 23930.3 | 23639.4 | 20856.3 | 21780.2 | 24262.5 | 25782.4 | 26305.6 | 23606.6 | 23197.4 | 26238.6 |
| 62.5° | 23153.2 | 23372.8 | 23794.8 | 22178.0 | 22665.6 | 24666.0 | 26073.2 | 26769.0 | 25294.7 | 25317.6 | 26903.0 |
| 65°   | 21904.2 | 22079.6 | 22795.3 | 22902.3 | 23178.9 | 24616.1 | 25354.6 | 26121.7 | 26328.4 | 27265.2 | 26867.4 |
| 67.5° | 20395.8 | 20461.3 | 21068.7 | 22959.3 | 22434.6 | 23116.1 | 23196.0 | 23763.5 | 25511.5 | 27955.2 | 25788.1 |
| 70°   | 18224.3 | 18259.9 | 18790.3 | 21050.2 | 19279.4 | 19429.1 | 19310.7 | 19426.2 | 21932.8 | 26274.2 | 23063.4 |
| 72.5° | 14667.0 | 14756.8 | 15511.0 | 17481.5 | 14045.3 | 13613.3 | 14542.9 | 14491.6 | 16891.2 | 22197.9 | 17129.3 |
| 75°   | 10798.8 | 10954.3 | 12093.5 | 14081.0 | 9857.8  | 8916.8  | 9595.5  | 9776.6  | 12007.9 | 17170.7 | 10711.9 |
| 77.5° | 7560.9  | 7676.4  | 8779.9  | 10351.2 | 7134.6  | 6376.1  | 6130.8  | 6346.1  | 7925.9  | 12421.4 | 5396.6  |
| 80°   | 4355.8  | 4398.5  | 5102.9  | 5976.9  | 4807.7  | 5500.7  | 4983.1  | 5131.4  | 4749.3  | 5526.3  | 2321.2  |
| 82.5° | 2850.1  | 2857.3  | 3132.4  | 3557.3  | 2994.1  | 3478.9  | 2575.0  | 3292.1  | 2921.4  | 2219.9  | 755.7   |
| 85°   | 1539.8  | 1548.4  | 1816.4  | 2525.1  | 1695.3  | 958.1   | 563.2   | 1156.3  | 1806.5  | 509.0   | 206.7   |
| 87.5° | 169.7   | 155.4   | 547.5   | 918.2   | 470.5   | 87.0    | 29.9    | 129.7   | 289.4   | 32.8    | 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     |



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**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°    | 115°    | 125°    | 135°    | 145°    | 155°    | 165°    | 175°    | 180°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 |
| 2.5°  | 10797.4 | 10679.1 | 10383.9 | 10071.7 | 9820.8  | 9585.5  | 9348.8  | 9059.4  | 8835.6  | 8789.9  | 8715.8  |
| 5°    | 10566.4 | 10191.5 | 9572.7  | 8951.0  | 8450.6  | 7819.0  | 7418.3  | 7106.1  | 6801.0  | 6782.4  | 6721.1  |
| 7.5°  | 9759.5  | 9266.1  | 8395.0  | 7535.2  | 6830.9  | 6229.2  | 5621.8  | 5215.5  | 4896.1  | 4783.5  | 4716.5  |
| 10°   | 8983.8  | 8429.2  | 7341.3  | 6360.4  | 5731.6  | 5199.8  | 4772.1  | 4347.2  | 3962.2  | 3697.0  | 3577.3  |
| 12.5° | 8442.0  | 7829.0  | 6629.9  | 5784.4  | 5333.8  | 4829.1  | 4307.3  | 3776.9  | 3333.5  | 3014.1  | 2818.8  |
| 15°   | 8232.4  | 7578.0  | 6391.8  | 5556.3  | 5000.2  | 4361.5  | 3694.2  | 3088.2  | 2596.3  | 2306.9  | 2131.5  |
| 17.5° | 8482.0  | 7720.6  | 6373.2  | 5278.2  | 4501.2  | 3707.0  | 2969.9  | 2254.2  | 1790.8  | 1571.2  | 1458.6  |
| 20°   | 9115.0  | 8174.0  | 6366.1  | 4937.5  | 3908.1  | 2931.4  | 2011.8  | 1482.8  | 1201.9  | 1079.3  | 1026.6  |
| 22.5° | 10010.4 | 8752.9  | 6423.1  | 4601.0  | 3290.7  | 2094.5  | 1388.7  | 1089.3  | 945.3   | 879.7   | 849.8   |
| 25°   | 11162.4 | 9565.5  | 6584.2  | 4295.9  | 2710.4  | 1562.7  | 1082.2  | 912.5   | 811.3   | 759.9   | 738.6   |
| 27.5° | 12390.0 | 10500.9 | 6835.2  | 4030.7  | 2238.5  | 1246.1  | 926.8   | 781.3   | 708.6   | 673.0   | 653.0   |
| 30°   | 13402.3 | 11584.5 | 7089.0  | 3735.5  | 1896.3  | 1086.4  | 848.3   | 712.9   | 628.8   | 606.0   | 587.4   |
| 32.5° | 14287.7 | 12404.3 | 7268.6  | 3468.9  | 1672.4  | 965.3   | 767.1   | 637.3   | 580.3   | 536.1   | 516.1   |
| 35°   | 15204.5 | 13087.2 | 7262.9  | 3282.1  | 1518.5  | 874.0   | 698.6   | 570.3   | 501.9   | 450.5   | 434.9   |
| 37.5° | 16196.8 | 13858.6 | 7138.9  | 3122.5  | 1451.4  | 801.3   | 660.1   | 534.7   | 466.2   | 414.9   | 394.9   |
| 40°   | 17358.9 | 14668.4 | 7012.0  | 2972.7  | 1432.9  | 742.8   | 633.0   | 506.2   | 433.4   | 383.5   | 363.6   |
| 42.5° | 18490.9 | 15398.4 | 6900.8  | 2861.5  | 1353.1  | 741.4   | 608.8   | 484.8   | 407.8   | 359.3   | 336.5   |
| 45°   | 19396.3 | 16078.5 | 6879.4  | 2794.5  | 1268.9  | 767.1   | 596.0   | 470.5   | 387.8   | 339.3   | 317.9   |
| 47.5° | 20149.1 | 16817.1 | 7016.3  | 2747.5  | 1189.1  | 700.1   | 627.3   | 460.5   | 369.3   | 322.2   | 298.0   |
| 50°   | 21044.5 | 17723.9 | 7338.5  | 2670.5  | 1105.0  | 630.2   | 718.6   | 463.4   | 353.6   | 305.1   | 279.5   |
| 52.5° | 22293.5 | 18978.5 | 7811.8  | 2540.7  | 989.5   | 566.0   | 707.2   | 466.2   | 336.5   | 286.6   | 260.9   |
| 55°   | 23693.6 | 20545.5 | 8320.8  | 2325.4  | 828.4   | 481.9   | 606.0   | 446.3   | 303.7   | 266.6   | 242.4   |
| 57.5° | 25165.0 | 21967.0 | 8623.1  | 2068.8  | 658.7   | 416.3   | 484.8   | 406.3   | 268.0   | 239.5   | 223.8   |
| 60°   | 25396.0 | 22507.3 | 8484.8  | 1753.7  | 523.3   | 362.1   | 359.3   | 413.5   | 239.5   | 211.0   | 199.6   |
| 62.5° | 24821.4 | 21828.7 | 7816.1  | 1472.8  | 437.7   | 317.9   | 295.1   | 360.7   | 216.7   | 188.2   | 176.8   |
| 65°   | 23716.4 | 19993.7 | 6732.5  | 1327.4  | 406.3   | 272.3   | 245.2   | 253.8   | 189.6   | 164.0   | 154.0   |
| 67.5° | 22179.4 | 17544.2 | 5527.7  | 1244.7  | 402.1   | 233.8   | 209.6   | 192.5   | 164.0   | 142.6   | 134.0   |
| 70°   | 19037.0 | 14615.7 | 4409.9  | 1199.1  | 390.7   | 196.8   | 176.8   | 156.8   | 136.9   | 121.2   | 114.1   |
| 72.5° | 14011.1 | 10356.9 | 3430.4  | 1149.2  | 393.5   | 156.8   | 154.0   | 129.7   | 109.8   | 94.1    | 91.2    |
| 75°   | 8095.6  | 5917.0  | 2249.9  | 931.0   | 375.0   | 121.2   | 128.3   | 91.2    | 77.0    | 65.6    | 65.6    |
| 77.5° | 4314.4  | 3608.6  | 856.9   | 387.8   | 136.9   | 77.0    | 72.7    | 54.2    | 48.5    | 39.9    | 38.5    |
| 80°   | 1880.6  | 1588.3  | 258.1   | 108.4   | 75.6    | 41.3    | 27.1    | 24.2    | 21.4    | 17.1    | 15.7    |
| 82.5° | 665.8   | 574.6   | 84.1    | 52.8    | 32.8    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 85°   | 151.1   | 108.4   | 0.0     | 12.8    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 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     |



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**CANDELA DISTRIBUTION (continued):**

|       | 185°    | 195°    | 205°    | 215°    | 225°    | 235°    | 245°    | 255°    | 265°    | 270°    | 275°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 |
| 2.5°  | 8564.7  | 8533.3  | 8347.9  | 8355.1  | 8387.9  | 8434.9  | 8323.7  | 8375.0  | 8513.3  | 8645.9  | 8695.8  |
| 5°    | 6622.7  | 6629.9  | 6517.2  | 6587.1  | 6649.8  | 6692.6  | 6513.0  | 6515.8  | 6625.6  | 6775.3  | 6853.7  |
| 7.5°  | 4666.6  | 4655.2  | 4660.9  | 4827.7  | 4946.0  | 4860.5  | 4927.5  | 4695.1  | 4709.3  | 4816.3  | 4736.4  |
| 10°   | 3468.9  | 3312.1  | 3223.7  | 3349.2  | 3478.9  | 3431.8  | 3316.4  | 3240.8  | 3293.5  | 3411.9  | 3403.3  |
| 12.5° | 2726.1  | 2500.8  | 2368.2  | 2278.4  | 2385.3  | 2296.9  | 2294.1  | 2228.5  | 2157.2  | 2170.0  | 2359.7  |
| 15°   | 2050.3  | 1886.3  | 1729.5  | 1585.5  | 1582.6  | 1552.7  | 1400.1  | 1229.0  | 1214.8  | 1223.3  | 1321.7  |
| 17.5° | 1410.1  | 1354.5  | 1290.3  | 1166.3  | 1133.5  | 1008.0  | 859.7   | 791.3   | 757.1   | 772.8   | 805.6   |
| 20°   | 990.9   | 969.5   | 976.7   | 909.6   | 862.6   | 742.8   | 655.9   | 628.8   | 623.1   | 638.7   | 654.4   |
| 22.5° | 821.2   | 782.8   | 778.5   | 748.5   | 701.5   | 614.5   | 567.5   | 551.8   | 544.6   | 558.9   | 570.3   |
| 25°   | 718.6   | 680.1   | 664.4   | 645.9   | 596.0   | 536.1   | 507.6   | 493.3   | 486.2   | 494.7   | 501.9   |
| 27.5° | 633.0   | 597.4   | 583.1   | 570.3   | 521.8   | 479.1   | 456.2   | 443.4   | 437.7   | 440.6   | 447.7   |
| 30°   | 568.9   | 537.5   | 519.0   | 503.3   | 462.0   | 432.0   | 412.1   | 399.2   | 393.5   | 393.5   | 400.6   |
| 32.5° | 501.9   | 484.8   | 467.7   | 447.7   | 409.2   | 389.2   | 369.3   | 355.0   | 349.3   | 350.7   | 356.4   |
| 35°   | 417.8   | 412.1   | 416.3   | 397.8   | 365.0   | 347.9   | 327.9   | 312.2   | 308.0   | 309.4   | 315.1   |
| 37.5° | 370.7   | 345.0   | 360.7   | 350.7   | 332.2   | 309.4   | 283.7   | 269.5   | 262.3   | 266.6   | 269.5   |
| 40°   | 340.8   | 309.4   | 298.0   | 308.0   | 305.1   | 268.0   | 245.2   | 231.0   | 225.3   | 226.7   | 229.6   |
| 42.5° | 315.1   | 278.0   | 252.4   | 250.9   | 268.0   | 233.8   | 209.6   | 196.8   | 189.6   | 189.6   | 192.5   |
| 45°   | 290.9   | 250.9   | 219.6   | 195.3   | 225.3   | 198.2   | 175.4   | 164.0   | 155.4   | 155.4   | 156.8   |
| 47.5° | 272.3   | 228.1   | 191.1   | 159.7   | 169.7   | 162.5   | 144.0   | 132.6   | 124.0   | 124.0   | 125.5   |
| 50°   | 255.2   | 205.3   | 165.4   | 134.0   | 126.9   | 134.0   | 116.9   | 104.1   | 98.4    | 97.0    | 99.8    |
| 52.5° | 236.7   | 182.5   | 141.2   | 114.1   | 99.8    | 101.2   | 91.2    | 82.7    | 75.6    | 75.6    | 78.4    |
| 55°   | 218.1   | 164.0   | 122.6   | 97.0    | 82.7    | 75.6    | 72.7    | 67.0    | 61.3    | 61.3    | 64.2    |
| 57.5° | 199.6   | 144.0   | 104.1   | 79.8    | 65.6    | 59.9    | 59.9    | 55.6    | 51.3    | 51.3    | 54.2    |
| 60°   | 182.5   | 124.0   | 85.5    | 65.6    | 51.3    | 49.9    | 51.3    | 47.1    | 44.2    | 44.2    | 47.1    |
| 62.5° | 162.5   | 105.5   | 69.9    | 54.2    | 41.3    | 39.9    | 44.2    | 41.3    | 38.5    | 38.5    | 41.3    |
| 65°   | 138.3   | 89.8    | 55.6    | 41.3    | 31.4    | 31.4    | 37.1    | 34.2    | 31.4    | 31.4    | 34.2    |
| 67.5° | 116.9   | 75.6    | 42.8    | 29.9    | 22.8    | 24.2    | 31.4    | 28.5    | 27.1    | 27.1    | 29.9    |
| 70°   | 97.0    | 58.5    | 29.9    | 18.5    | 12.8    | 18.5    | 24.2    | 24.2    | 24.2    | 24.2    | 27.1    |
| 72.5° | 72.7    | 39.9    | 17.1    | 7.1     | 5.7     | 12.8    | 20.0    | 22.8    | 21.4    | 21.4    | 25.7    |
| 75°   | 47.1    | 22.8    | 5.7     | 0.0     | 0.0     | 7.1     | 15.7    | 18.5    | 18.5    | 17.1    | 21.4    |
| 77.5° | 27.1    | 7.1     | 0.0     | 0.0     | 0.0     | 0.0     | 10.0    | 8.6     | 7.1     | 5.7     | 10.0    |
| 80°   | 7.1     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 82.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 85°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 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     |



REPORT NUMBER: P324323

CATALOG NUMBER: GLEON-SA9B-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°    | 295°    | 305°    | 315°    | 325°    | 335°    | 345°    | 355°    | 359°    | 360°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 | 10097.4 |
| 2.5°  | 8896.9  | 9065.1  | 9301.8  | 9552.7  | 9939.1  | 10245.6 | 10546.5 | 10804.6 | 10904.4 | 10945.7 |
| 5°    | 7041.9  | 7288.6  | 7635.0  | 8079.9  | 8777.1  | 9404.4  | 10040.3 | 10680.5 | 10958.5 | 11028.4 |
| 7.5°  | 5053.0  | 5368.1  | 5808.6  | 6366.1  | 7183.1  | 7995.8  | 8884.0  | 9823.6  | 10254.2 | 10362.6 |
| 10°   | 3739.8  | 4124.8  | 4629.5  | 5216.9  | 5996.8  | 6832.3  | 7800.4  | 8874.0  | 9365.9  | 9509.9  |
| 12.5° | 2653.4  | 3173.8  | 3849.6  | 4563.9  | 5239.7  | 5985.4  | 6964.9  | 8148.3  | 8664.5  | 8819.9  |
| 15°   | 1558.4  | 2061.7  | 2861.5  | 3818.2  | 4683.7  | 5439.3  | 6434.5  | 7776.2  | 8345.1  | 8501.9  |
| 17.5° | 894.0   | 1144.9  | 1749.4  | 2815.9  | 3990.8  | 5037.3  | 6267.7  | 7868.9  | 8539.0  | 8684.4  |
| 20°   | 682.9   | 762.8   | 1008.0  | 1813.6  | 3180.9  | 4642.3  | 6267.7  | 8393.6  | 9219.1  | 9433.0  |
| 22.5° | 597.4   | 655.9   | 755.7   | 1082.2  | 2341.1  | 4218.9  | 6340.4  | 9152.1  | 10231.4 | 10468.1 |
| 25°   | 530.4   | 583.1   | 668.7   | 814.1   | 1596.9  | 3715.6  | 6513.0  | 10083.1 | 11423.3 | 11729.9 |
| 27.5° | 474.8   | 524.7   | 601.7   | 712.9   | 1092.1  | 3108.2  | 6745.4  | 11175.3 | 12737.9 | 12983.1 |
| 30°   | 424.9   | 471.9   | 541.8   | 620.2   | 842.6   | 2419.5  | 6943.5  | 12204.7 | 13770.2 | 14033.9 |
| 32.5° | 377.8   | 420.6   | 483.3   | 541.8   | 690.1   | 1789.4  | 6964.9  | 13020.2 | 14627.1 | 14889.4 |
| 35°   | 333.6   | 372.1   | 429.2   | 474.8   | 571.7   | 1412.9  | 6632.7  | 13727.4 | 15484.0 | 15830.4 |
| 37.5° | 290.9   | 327.9   | 377.8   | 412.1   | 503.3   | 1152.0  | 6125.1  | 14515.9 | 16583.2 | 16904.0 |
| 40°   | 250.9   | 283.7   | 335.1   | 357.9   | 476.2   | 885.4   | 5573.4  | 15342.8 | 17661.1 | 17954.8 |
| 42.5° | 213.9   | 245.2   | 295.1   | 339.3   | 417.8   | 661.6   | 4977.4  | 16118.4 | 18630.6 | 18938.6 |
| 45°   | 178.2   | 211.0   | 260.9   | 359.3   | 346.5   | 494.7   | 4340.1  | 16633.1 | 19396.3 | 19731.4 |
| 47.5° | 144.0   | 181.1   | 249.5   | 342.2   | 276.6   | 363.6   | 3835.3  | 17120.7 | 19976.6 | 20307.4 |
| 50°   | 115.5   | 152.6   | 280.9   | 305.1   | 226.7   | 278.0   | 3624.3  | 17557.0 | 20357.3 | 20675.2 |
| 52.5° | 94.1    | 128.3   | 265.2   | 233.8   | 189.6   | 229.6   | 3738.4  | 18264.2 | 20709.4 | 20909.0 |
| 55°   | 78.4    | 101.2   | 159.7   | 162.5   | 161.1   | 195.3   | 3879.5  | 19279.4 | 21620.5 | 21714.6 |
| 57.5° | 68.4    | 81.3    | 111.2   | 125.5   | 135.4   | 173.9   | 3882.4  | 20736.5 | 23030.6 | 23089.1 |
| 60°   | 58.5    | 71.3    | 92.7    | 101.2   | 116.9   | 155.4   | 3741.2  | 21245.5 | 23585.2 | 23779.1 |
| 62.5° | 51.3    | 62.7    | 77.0    | 84.1    | 98.4    | 139.7   | 3410.5  | 20508.4 | 22823.9 | 23153.2 |
| 65°   | 45.6    | 57.0    | 64.2    | 71.3    | 87.0    | 125.5   | 2865.8  | 19034.1 | 21560.6 | 21904.2 |
| 67.5° | 39.9    | 49.9    | 57.0    | 64.2    | 78.4    | 111.2   | 2110.2  | 17321.8 | 20110.6 | 20395.8 |
| 70°   | 35.6    | 44.2    | 51.3    | 57.0    | 68.4    | 94.1    | 1280.3  | 14698.4 | 18106.0 | 18224.3 |
| 72.5° | 34.2    | 39.9    | 47.1    | 51.3    | 59.9    | 82.7    | 648.7   | 10801.7 | 14474.5 | 14667.0 |
| 75°   | 29.9    | 35.6    | 42.8    | 45.6    | 52.8    | 71.3    | 263.8   | 7094.7  | 10489.5 | 10798.8 |
| 77.5° | 24.2    | 32.8    | 38.5    | 41.3    | 45.6    | 58.5    | 134.0   | 4534.0  | 7361.3  | 7560.9  |
| 80°   | 8.6     | 24.2    | 32.8    | 34.2    | 38.5    | 42.8    | 88.4    | 2482.3  | 4270.2  | 4355.8  |
| 82.5° | 0.0     | 15.7    | 25.7    | 24.2    | 27.1    | 32.8    | 57.0    | 1180.5  | 2818.8  | 2850.1  |
| 85°   | 0.0     | 7.1     | 20.0    | 15.7    | 11.4    | 22.8    | 20.0    | 258.1   | 1478.5  | 1539.8  |
| 87.5° | 0.0     | 0.0     | 1.4     | 7.1     | 5.7     | 8.6     | 2.9     | 1.4     | 134.0   | 169.7   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

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

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

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

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

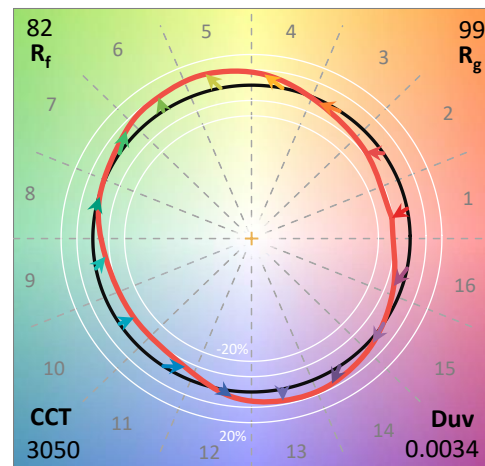
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2408-195-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 08/07/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **GALN-SB1A-830-U-5WQ**  
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

### Spectral Parameters

CCT (K): 3050  
 CIE  $u'$ : 0.2476  
 CIE  $v'$ : 0.5251  
 Duv: 0.0034  
 CIE x: 0.4383  
 CIE y: 0.4131  
 CIE z: 0.1487  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 581  
 Purity: 55.55201  
 R<sub>f</sub>: 81.5  
 R<sub>g</sub>: 99.2

CRI (Ra): 81.0  
 R1: 79.6  
 R2: 85.6  
 R3: 92.0  
 R4: 82.6  
 R5: 78.9  
 R6: 81.7  
 R7: 85.2  
 R8: 62.0  
 R9: 7.1  
 R10: 67.0  
 R11: 82.7  
 R12: 63.2  
 R13: 80.3  
 R14: 95.0  
 R15: 71.7



### Test Conditions

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

| 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           |

REPORT NUMBER: SP1-2408-195-9

**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: SP1-2408-195-9

### 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    | 168                      | NR            | 620    | 940                      | NR            | 750    | 35                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 233                      | NR            | 625    | 897                      | NR            | 755    | 30                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 300                      | NR            | 630    | 847                      | NR            | 760    | 26                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 372                      | NR            | 635    | 790                      | NR            | 765    | 22                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 430                      | NR            | 640    | 730                      | NR            | 770    | 19                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 483                      | NR            | 645    | 668                      | NR            | 775    | 16                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 524                      | NR            | 650    | 605                      | NR            | 780    | 14                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 555                      | NR            | 655    | 545                      | NR            | 785    | 12                       | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 581                      | NR            | 660    | 485                      | NR            | 790    | 10                       | NR            | 920    | 0                        | NR            |
| 405    | 7                        | NR            | 535    | 604                      | NR            | 665    | 430                      | NR            | 795    | 9                        | NR            | 925    | 0                        | NR            |
| 410    | 17                       | NR            | 540    | 623                      | NR            | 670    | 378                      | NR            | 800    | 8                        | NR            | 930    | 0                        | NR            |
| 415    | 34                       | NR            | 545    | 645                      | NR            | 675    | 331                      | NR            | 805    | 7                        | NR            | 935    | 0                        | NR            |
| 420    | 68                       | NR            | 550    | 667                      | NR            | 680    | 290                      | NR            | 810    | 6                        | NR            | 940    | 0                        | NR            |
| 425    | 128                      | NR            | 555    | 693                      | NR            | 685    | 251                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 214                      | NR            | 560    | 719                      | NR            | 690    | 218                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 339                      | NR            | 565    | 754                      | NR            | 695    | 188                      | NR            | 825    | 4                        | NR            | 955    | 0                        | NR            |
| 440    | 507                      | NR            | 570    | 791                      | NR            | 700    | 162                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 573                      | NR            | 575    | 830                      | NR            | 705    | 139                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 356                      | NR            | 580    | 873                      | NR            | 710    | 119                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 217                      | NR            | 585    | 913                      | NR            | 715    | 102                      | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 168                      | NR            | 590    | 948                      | NR            | 720    | 88                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 113                      | NR            | 595    | 974                      | NR            | 725    | 76                       | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 85                       | NR            | 600    | 994                      | NR            | 730    | 65                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 85                       | NR            | 605    | 998                      | NR            | 735    | 55                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 94                       | NR            | 610    | 994                      | NR            | 740    | 47                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 120                      | NR            | 615    | 973                      | NR            | 745    | 41                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2408-195-9

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 168                      | NR            | 620    | 940                      | NR            | 750    | 35                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 233                      | NR            | 625    | 897                      | NR            | 755    | 30                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 300                      | NR            | 630    | 847                      | NR            | 760    | 26                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 372                      | NR            | 635    | 790                      | NR            | 765    | 22                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 430                      | NR            | 640    | 730                      | NR            | 770    | 19                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 483                      | NR            | 645    | 668                      | NR            | 775    | 16                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 524                      | NR            | 650    | 605                      | NR            | 780    | 14                       | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 555                      | NR            | 655    | 545                      | NR            | 785    | 12                       | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 581                      | NR            | 660    | 485                      | NR            | 790    | 10                       | NR            | 920    | 0                        | NR            |
| 405    | 7                        | NR            | 535    | 604                      | NR            | 665    | 430                      | NR            | 795    | 9                        | NR            | 925    | 0                        | NR            |
| 410    | 17                       | NR            | 540    | 623                      | NR            | 670    | 378                      | NR            | 800    | 8                        | NR            | 930    | 0                        | NR            |
| 415    | 34                       | NR            | 545    | 645                      | NR            | 675    | 331                      | NR            | 805    | 7                        | NR            | 935    | 0                        | NR            |
| 420    | 68                       | NR            | 550    | 667                      | NR            | 680    | 290                      | NR            | 810    | 6                        | NR            | 940    | 0                        | NR            |
| 425    | 128                      | NR            | 555    | 693                      | NR            | 685    | 251                      | NR            | 815    | 5                        | NR            | 945    | 0                        | NR            |
| 430    | 214                      | NR            | 560    | 719                      | NR            | 690    | 218                      | NR            | 820    | 4                        | NR            | 950    | 0                        | NR            |
| 435    | 339                      | NR            | 565    | 754                      | NR            | 695    | 188                      | NR            | 825    | 4                        | NR            | 955    | 0                        | NR            |
| 440    | 507                      | NR            | 570    | 791                      | NR            | 700    | 162                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 573                      | NR            | 575    | 830                      | NR            | 705    | 139                      | NR            | 835    | 3                        | NR            | 965    | 0                        | NR            |
| 450    | 356                      | NR            | 580    | 873                      | NR            | 710    | 119                      | NR            | 840    | 3                        | NR            | 970    | 0                        | NR            |
| 455    | 217                      | NR            | 585    | 913                      | NR            | 715    | 102                      | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 168                      | NR            | 590    | 948                      | NR            | 720    | 88                       | NR            | 850    | 2                        | NR            | 980    | 0                        | NR            |
| 465    | 113                      | NR            | 595    | 974                      | NR            | 725    | 76                       | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 85                       | NR            | 600    | 994                      | NR            | 730    | 65                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 85                       | NR            | 605    | 998                      | NR            | 735    | 55                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 94                       | NR            | 610    | 994                      | NR            | 740    | 47                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 120                      | NR            | 615    | 973                      | NR            | 745    | 41                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

| $\lambda$<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               | 168                                    | NR                             | 620               | 940                                    | NR                             | 750               | 35                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 233                                    | NR                             | 625               | 897                                    | NR                             | 755               | 30                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 300                                    | NR                             | 630               | 847                                    | NR                             | 760               | 26                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 372                                    | NR                             | 635               | 790                                    | NR                             | 765               | 22                                     | NR                             | 895               | 1                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 430                                    | NR                             | 640               | 730                                    | NR                             | 770               | 19                                     | NR                             | 900               | 1                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 483                                    | NR                             | 645               | 668                                    | NR                             | 775               | 16                                     | NR                             | 905               | 1                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 524                                    | NR                             | 650               | 605                                    | NR                             | 780               | 14                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 2                                      | NR                             | 525               | 555                                    | NR                             | 655               | 545                                    | NR                             | 785               | 12                                     | NR                             | 915               | 0                                      | NR                             |
| 400               | 4                                      | NR                             | 530               | 581                                    | NR                             | 660               | 485                                    | NR                             | 790               | 10                                     | NR                             | 920               | 0                                      | NR                             |
| 405               | 7                                      | NR                             | 535               | 604                                    | NR                             | 665               | 430                                    | NR                             | 795               | 9                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 17                                     | NR                             | 540               | 623                                    | NR                             | 670               | 378                                    | NR                             | 800               | 8                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 34                                     | NR                             | 545               | 645                                    | NR                             | 675               | 331                                    | NR                             | 805               | 7                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 68                                     | NR                             | 550               | 667                                    | NR                             | 680               | 290                                    | NR                             | 810               | 6                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 128                                    | NR                             | 555               | 693                                    | NR                             | 685               | 251                                    | NR                             | 815               | 5                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 214                                    | NR                             | 560               | 719                                    | NR                             | 690               | 218                                    | NR                             | 820               | 4                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 339                                    | NR                             | 565               | 754                                    | NR                             | 695               | 188                                    | NR                             | 825               | 4                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 507                                    | NR                             | 570               | 791                                    | NR                             | 700               | 162                                    | NR                             | 830               | 3                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 573                                    | NR                             | 575               | 830                                    | NR                             | 705               | 139                                    | NR                             | 835               | 3                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 356                                    | NR                             | 580               | 873                                    | NR                             | 710               | 119                                    | NR                             | 840               | 3                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 217                                    | NR                             | 585               | 913                                    | NR                             | 715               | 102                                    | NR                             | 845               | 2                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 168                                    | NR                             | 590               | 948                                    | NR                             | 720               | 88                                     | NR                             | 850               | 2                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 113                                    | NR                             | 595               | 974                                    | NR                             | 725               | 76                                     | NR                             | 855               | 2                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 85                                     | NR                             | 600               | 994                                    | NR                             | 730               | 65                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 85                                     | NR                             | 605               | 998                                    | NR                             | 735               | 55                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 94                                     | NR                             | 610               | 994                                    | NR                             | 740               | 47                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 120                                    | NR                             | 615               | 973                                    | NR                             | 745               | 41                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

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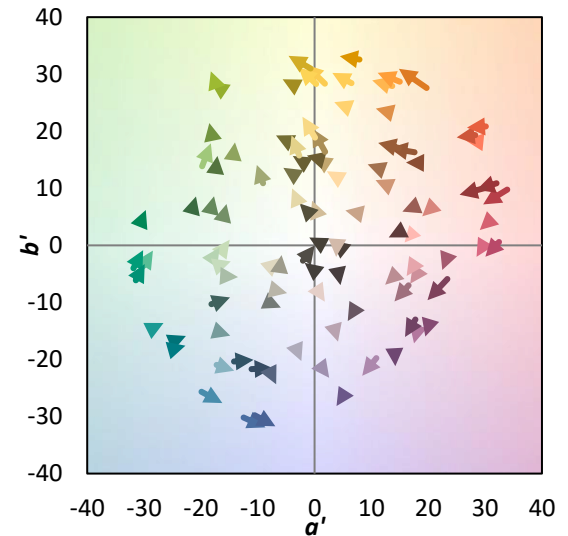
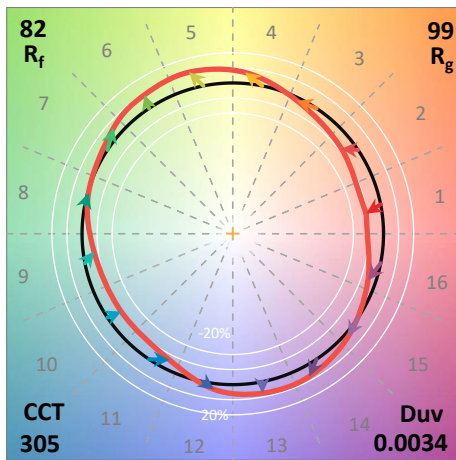
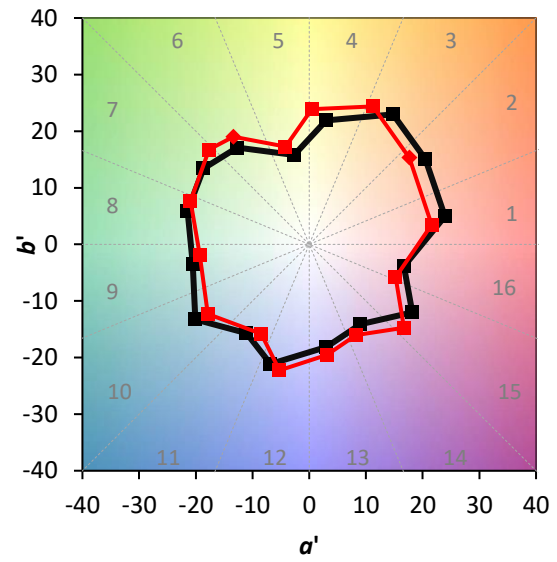
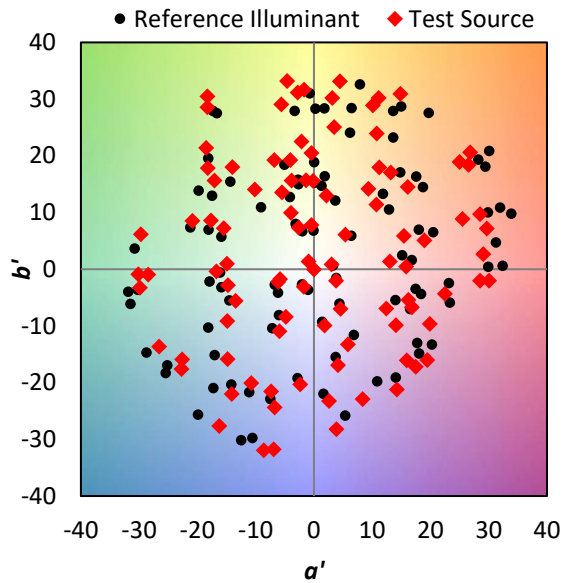
TM-30-18

### Summary

$R_f = 81.5$   
 $R_g = 99.2$   
 $CIE R_a = 81.0$   
 $R_9 = 7.1$

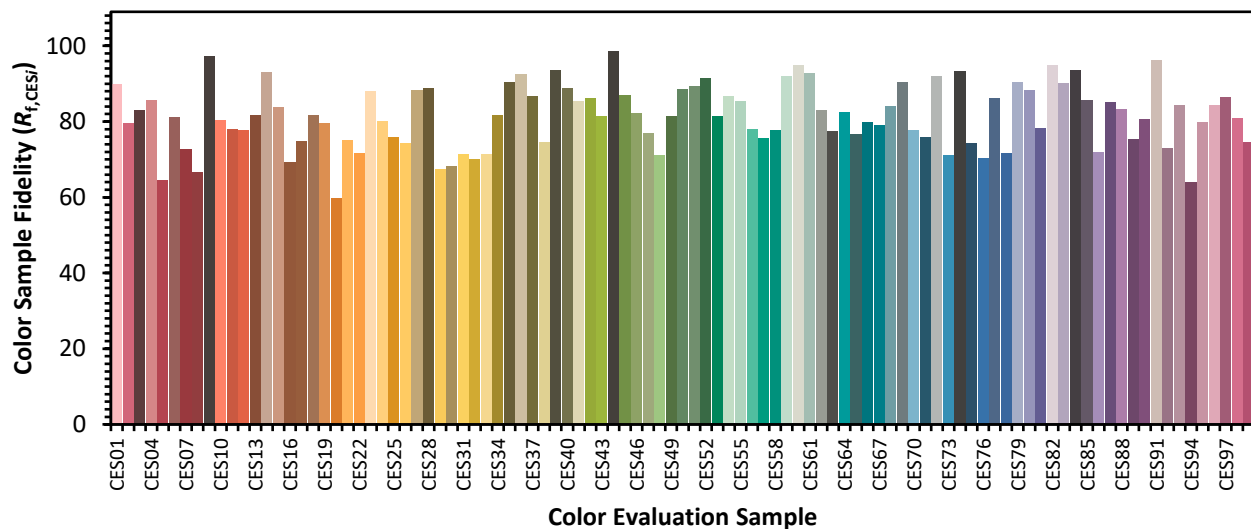


### Color Vector Graphics



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

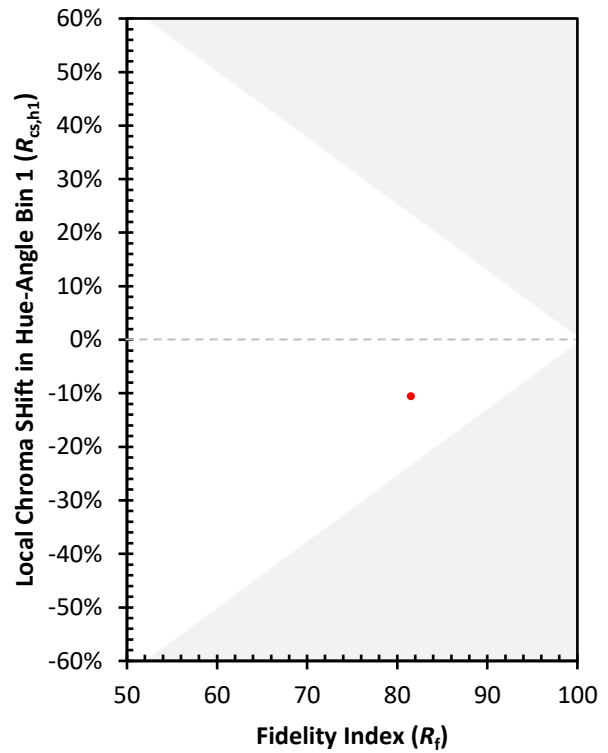
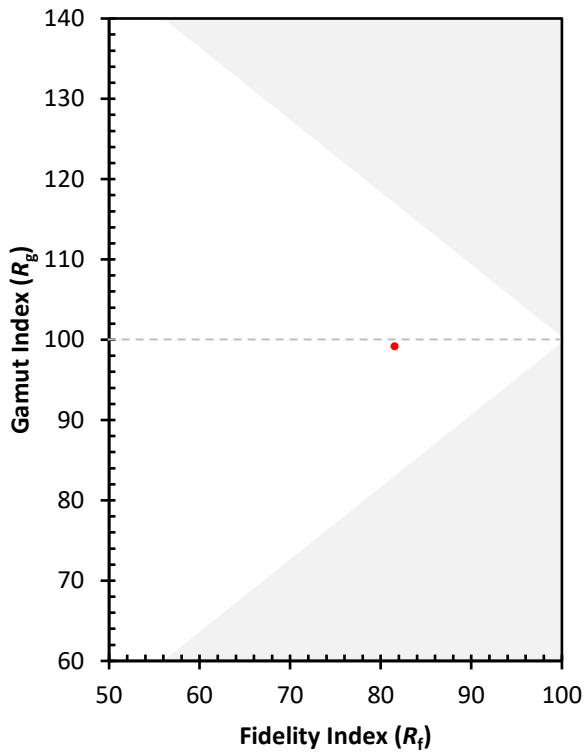
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 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 = 94 |
| 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 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | 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)