

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P634030

Luminaire Tested: GWS-SA2F-830-U-SLR-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P634030  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-44)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2F-830-U-SLR-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND  
SPILL LIGHT ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

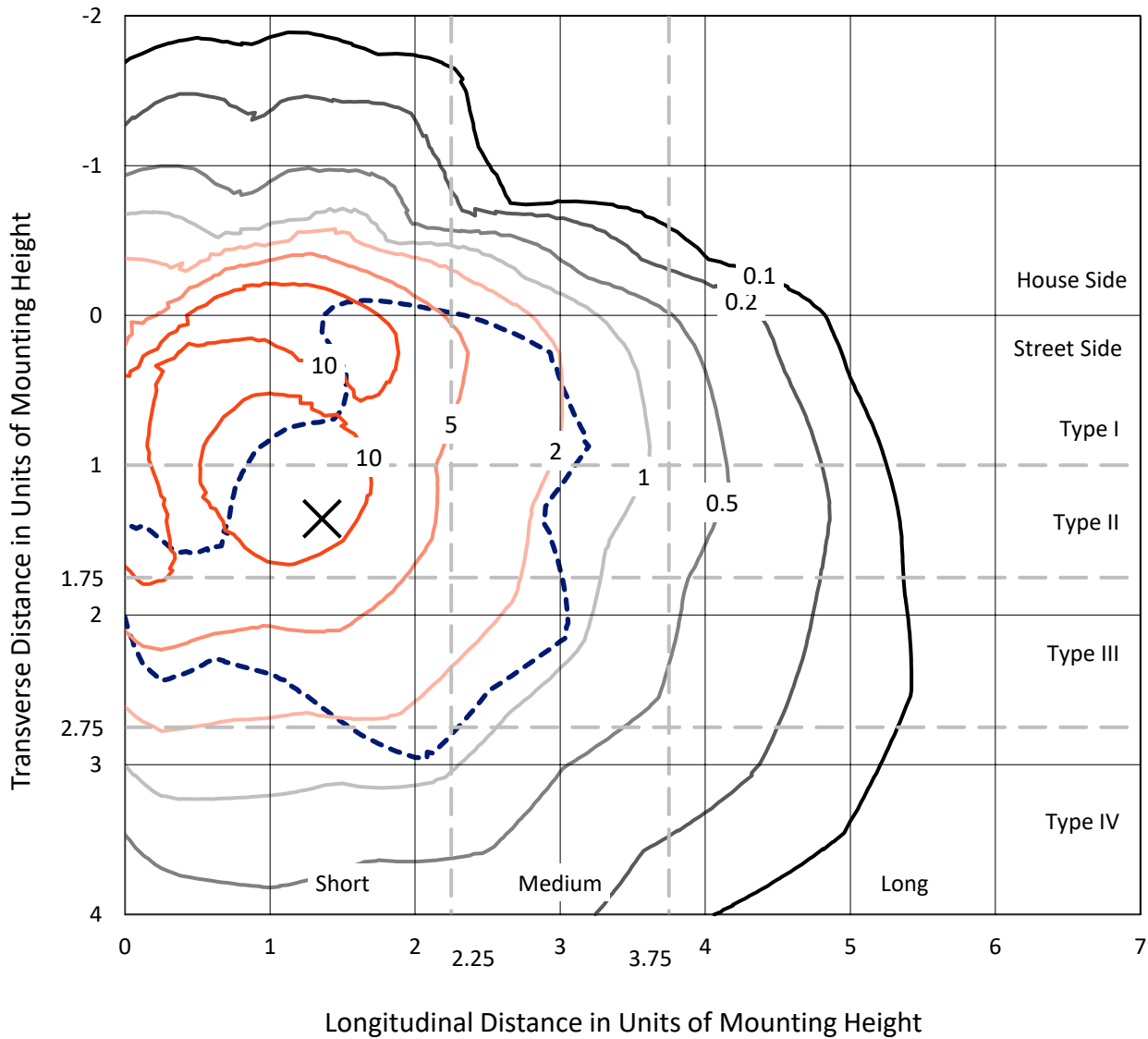
Lumens per Lamp: N/A  
Luminaire Lumens: 7997.6 lumens  
Efficiency: N/A  
Efficacy: 64.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 124.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
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

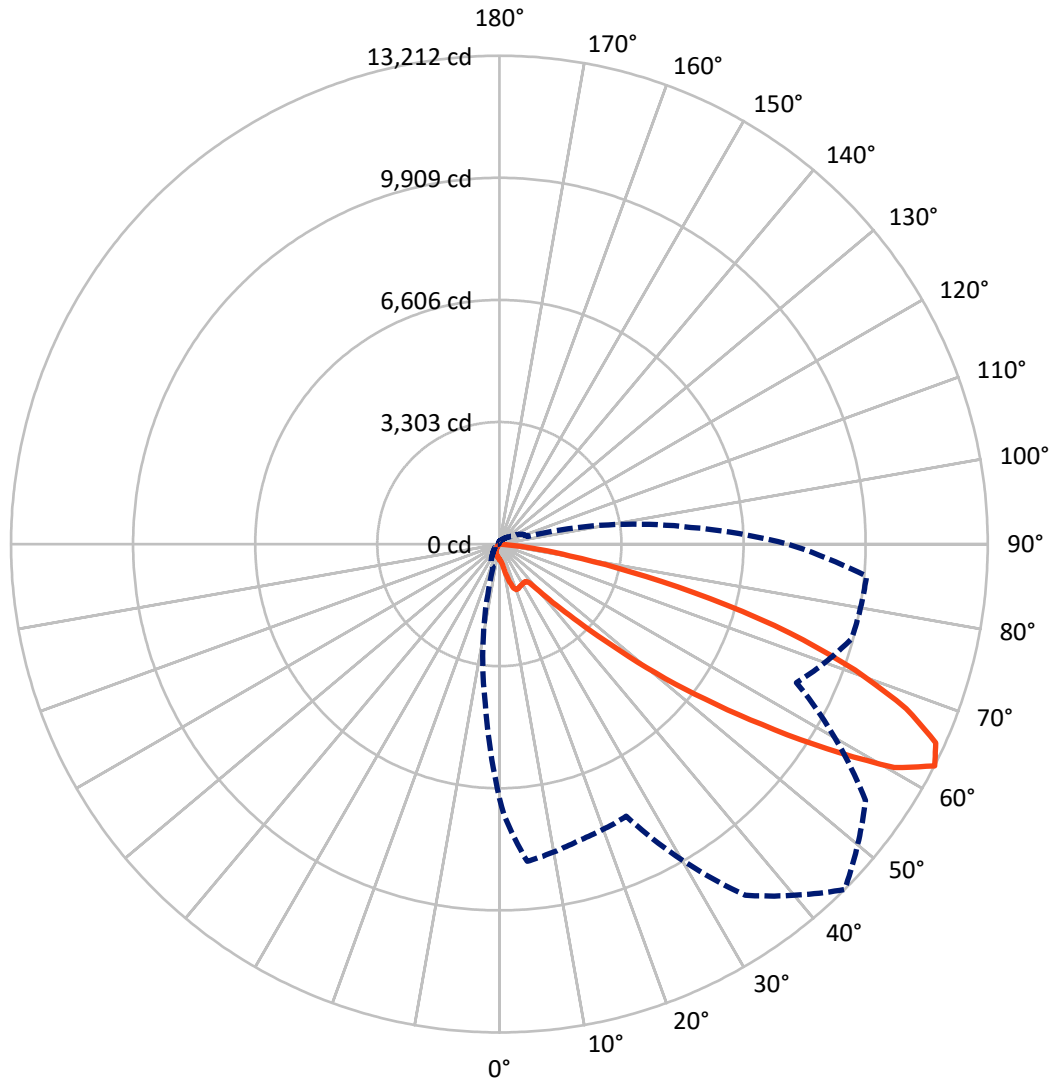
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 16.2 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 986.9    | 0.0    | 986.9  |
|                    | % Fixture | 12.3     | 0.0    | 12.3   |
| <b>Street Side</b> | Lumens    | 7010.7   | 0.0    | 7010.7 |
|                    | % Fixture | 87.7     | 0.0    | 87.7   |
| <b>Total</b>       | Lumens    | 7997.6   | 0.0    | 7997.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 36.9   | 0.5       |
| 10°-20°   | 139.4  | 1.7       |
| 20°-30°   | 303.1  | 3.8       |
| 30°-40°   | 497.5  | 6.2       |
| 40°-50°   | 914.6  | 11.4      |
| 50°-60°   | 1964.1 | 24.6      |
| 60°-70°   | 2638.1 | 33.0      |
| 70°-80°   | 1373.7 | 17.2      |
| 80°-90°   | 130.2  | 1.6       |
| 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°    | 7997.6 | 100.0     |
| 0°-180°   | 7997.6 | 100.0     |

**Coefficient of Utilization**

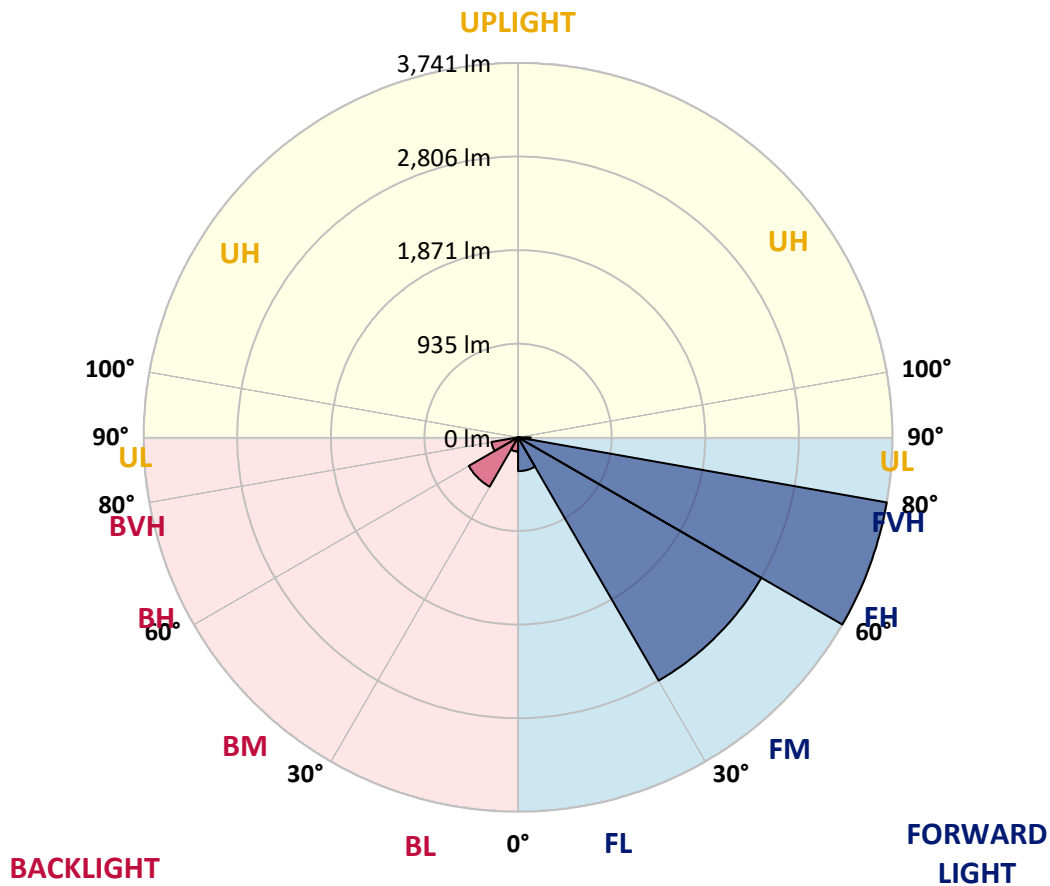


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 337.9  | 4.2       |                         |      |         |
| FM (30°-60°)   | 2807.1 | 35.1      |                         |      |         |
| FH (60°-80°)   | 3741.3 | 46.8      |                         |      | G2/5000 |
| FVH (80°-90°)  | 124.4  | 1.6       |                         |      | G2/225  |
| BL (0°-30°)    | 141.6  | 1.8       | B1/500                  |      |         |
| BM (30°-60°)   | 569.1  | 7.1       | B1/1000                 |      |         |
| BH (60°-80°)   | 270.4  | 3.4       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 5.8    | 0.1       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°    | 25°    | 35°     | 45°     | 55°     | 65°    | 75°    | 85°     |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|---------|
| 0°    | 415.7  | 415.7  | 415.7  | 415.7  | 415.7  | 415.7   | 415.7   | 415.7   | 415.7  | 415.7  | 415.7   |
| 2.5°  | 424.0  | 425.9  | 427.7  | 434.2  | 438.8  | 442.5   | 443.4   | 440.7   | 434.2  | 427.7  | 418.5   |
| 5°    | 411.1  | 412.9  | 419.4  | 437.0  | 454.5  | 468.4   | 473.0   | 470.2   | 454.5  | 434.2  | 412.9   |
| 7.5°  | 410.2  | 413.9  | 429.6  | 466.5  | 504.4  | 533.0   | 540.4   | 534.0   | 504.4  | 463.7  | 420.3   |
| 10°   | 443.4  | 449.9  | 473.0  | 539.5  | 608.8  | 659.6   | 679.9   | 652.2   | 605.1  | 531.2  | 460.0   |
| 12.5° | 530.3  | 541.3  | 585.7  | 682.7  | 789.8  | 857.3   | 885.0   | 850.8   | 776.9  | 669.8  | 557.0   |
| 15°   | 667.0  | 683.6  | 750.1  | 895.2  | 1021.7 | 1081.8  | 1091.0  | 1071.6  | 985.7  | 867.4  | 715.9   |
| 17.5° | 860.1  | 884.1  | 987.5  | 1135.3 | 1226.8 | 1248.0  | 1245.3  | 1225.0  | 1162.1 | 1080.8 | 937.7   |
| 20°   | 1091.0 | 1119.6 | 1221.3 | 1343.2 | 1352.4 | 1327.5  | 1313.6  | 1301.6  | 1280.4 | 1266.5 | 1154.7  |
| 22.5° | 1323.8 | 1358.9 | 1465.1 | 1495.6 | 1412.5 | 1340.4  | 1306.2  | 1315.5  | 1346.9 | 1415.3 | 1370.0  |
| 25°   | 1555.7 | 1588.9 | 1688.7 | 1606.5 | 1440.2 | 1320.1  | 1276.7  | 1298.9  | 1373.7 | 1521.5 | 1579.7  |
| 27.5° | 1826.3 | 1851.3 | 1910.4 | 1682.2 | 1444.8 | 1303.5  | 1261.0  | 1295.2  | 1386.6 | 1588.0 | 1809.7  |
| 30°   | 2108.1 | 2122.9 | 2094.2 | 1702.6 | 1429.1 | 1278.5  | 1245.3  | 1295.2  | 1408.8 | 1632.3 | 1982.5  |
| 32.5° | 2315.0 | 2317.8 | 2224.5 | 1704.4 | 1420.8 | 1258.2  | 1230.5  | 1289.6  | 1430.0 | 1669.3 | 2149.7  |
| 35°   | 2528.4 | 2514.6 | 2349.2 | 1732.1 | 1443.0 | 1265.6  | 1241.6  | 1305.3  | 1463.3 | 1712.7 | 2296.6  |
| 37.5° | 2744.6 | 2719.7 | 2488.7 | 1777.4 | 1500.2 | 1346.0  | 1331.2  | 1385.7  | 1516.9 | 1772.8 | 2458.2  |
| 40°   | 2966.3 | 2932.1 | 2633.7 | 1845.7 | 1627.7 | 1619.4  | 1670.2  | 1663.8  | 1663.8 | 1849.4 | 2624.5  |
| 42.5° | 3237.0 | 3197.3 | 2848.1 | 2038.8 | 1925.2 | 2110.9  | 2249.4  | 2163.5  | 2004.6 | 2025.9 | 2840.7  |
| 45°   | 3594.5 | 3560.3 | 3219.4 | 2408.3 | 2391.7 | 2818.5  | 3005.1  | 2835.1  | 2439.7 | 2433.3 | 3201.9  |
| 47.5° | 4166.3 | 4159.8 | 3811.6 | 2837.0 | 2962.6 | 3719.2  | 4079.5  | 3752.5  | 2935.8 | 2864.7 | 3885.5  |
| 50°   | 4970.0 | 4950.6 | 4549.7 | 3339.5 | 3641.6 | 4835.1  | 5478.1  | 4933.1  | 3535.4 | 3368.2 | 4801.0  |
| 52.5° | 5875.3 | 5895.7 | 5583.4 | 3888.3 | 4363.1 | 6076.7  | 6971.9  | 6285.5  | 4186.6 | 4008.3 | 5952.9  |
| 55°   | 6728.0 | 6844.4 | 6762.2 | 4530.3 | 5067.9 | 7447.6  | 8612.5  | 7769.1  | 4993.1 | 4846.2 | 7244.4  |
| 57.5° | 7395.0 | 7722.9 | 8299.4 | 5463.3 | 5896.6 | 9051.3  | 10444.4 | 9377.4  | 5934.5 | 6207.0 | 9002.4  |
| 60°   | 7431.9 | 7866.1 | 9204.7 | 7415.3 | 6962.6 | 10426.9 | 12273.5 | 10948.8 | 7414.4 | 8517.4 | 10379.8 |
| 62.5° | 6874.9 | 7340.5 | 8615.3 | 8302.1 | 8123.9 | 11597.3 | 13212.1 | 12094.3 | 8870.3 | 9870.8 | 9971.4  |
| 65°   | 6237.5 | 6707.7 | 7957.6 | 7296.1 | 7989.0 | 11547.4 | 12973.8 | 12121.1 | 9002.4 | 8950.7 | 9240.7  |
| 67.5° | 5273.9 | 5696.1 | 6827.8 | 6458.3 | 7363.6 | 10990.4 | 11872.6 | 11357.1 | 8293.8 | 8371.4 | 8500.8  |
| 70°   | 3849.5 | 4255.9 | 5306.3 | 5324.8 | 6430.5 | 9986.2  | 10201.5 | 10130.3 | 7637.9 | 7720.2 | 7350.6  |
| 72.5° | 2780.6 | 3123.4 | 4029.6 | 4366.8 | 5133.5 | 8374.2  | 8225.5  | 8499.8  | 6553.4 | 6875.8 | 5904.0  |
| 75°   | 1999.1 | 2255.9 | 2956.1 | 3798.6 | 4069.3 | 6219.0  | 5888.3  | 6583.0  | 5258.2 | 5920.6 | 4438.8  |
| 77.5° | 811.1  | 901.6  | 1163.1 | 2558.9 | 2674.4 | 4183.9  | 3604.6  | 4781.6  | 3748.8 | 3890.1 | 2151.5  |
| 80°   | 33.3   | 37.0   | 48.0   | 1321.0 | 1833.7 | 2353.8  | 1928.9  | 2556.1  | 2475.8 | 1566.8 | 508.1   |
| 82.5° | 3.7    | 3.7    | 8.3    | 380.6  | 802.8  | 1298.9  | 909.0   | 1472.5  | 1253.6 | 664.2  | 230.9   |
| 85°   | 0.9    | 0.9    | 1.8    | 43.4   | 188.5  | 207.9   | 122.9   | 451.7   | 582.9  | 271.6  | 0.0     |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 4.6     | 8.3    | 9.2    | 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°    | 415.7  | 415.7  | 415.7  | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 |
| 2.5°  | 418.5  | 413.9  | 408.3  | 402.8 | 400.0 | 392.6 | 389.8 | 388.0 | 386.1 | 387.1 | 387.1 |
| 5°    | 404.6  | 394.5  | 382.5  | 370.4 | 364.0 | 356.6 | 352.9 | 351.0 | 352.0 | 355.7 | 355.7 |
| 7.5°  | 402.8  | 383.4  | 357.5  | 341.8 | 334.4 | 328.9 | 325.2 | 323.3 | 324.3 | 328.9 | 330.7 |
| 10°   | 433.3  | 399.1  | 352.9  | 326.1 | 317.8 | 312.2 | 308.5 | 305.8 | 303.9 | 307.6 | 308.5 |
| 12.5° | 498.8  | 451.7  | 375.1  | 324.3 | 309.5 | 302.1 | 299.3 | 293.8 | 291.0 | 292.8 | 293.8 |
| 15°   | 634.6  | 553.4  | 419.4  | 331.6 | 302.1 | 293.8 | 289.1 | 284.5 | 279.9 | 279.0 | 279.9 |
| 17.5° | 812.0  | 695.6  | 486.8  | 349.2 | 296.5 | 286.4 | 279.9 | 273.4 | 267.0 | 266.1 | 265.1 |
| 20°   | 1031.9 | 870.2  | 581.1  | 376.9 | 291.9 | 279.9 | 270.7 | 261.4 | 253.1 | 250.3 | 250.3 |
| 22.5° | 1232.3 | 1080.8 | 702.1  | 411.1 | 285.5 | 270.7 | 259.6 | 248.5 | 239.3 | 234.6 | 233.7 |
| 25°   | 1477.1 | 1304.4 | 847.1  | 450.8 | 276.2 | 258.7 | 246.7 | 235.6 | 226.3 | 220.8 | 218.9 |
| 27.5° | 1723.8 | 1540.0 | 1011.6 | 502.5 | 265.1 | 246.7 | 235.6 | 225.4 | 215.2 | 208.8 | 206.9 |
| 30°   | 1963.1 | 1794.0 | 1196.3 | 567.2 | 256.8 | 234.6 | 225.4 | 215.2 | 206.0 | 195.8 | 193.1 |
| 32.5° | 2219.9 | 2053.6 | 1403.2 | 639.3 | 250.3 | 226.3 | 216.2 | 206.9 | 194.9 | 185.7 | 181.1 |
| 35°   | 2467.5 | 2321.5 | 1631.4 | 709.5 | 243.9 | 218.9 | 207.9 | 198.6 | 185.7 | 175.5 | 169.1 |
| 37.5° | 2716.9 | 2594.0 | 1869.8 | 752.0 | 234.6 | 208.8 | 198.6 | 191.2 | 176.4 | 164.4 | 157.0 |
| 40°   | 2981.1 | 2875.8 | 2127.5 | 734.4 | 226.3 | 197.7 | 192.1 | 183.8 | 167.2 | 153.3 | 144.1 |
| 42.5° | 3271.2 | 3144.6 | 2389.9 | 667.0 | 218.9 | 188.5 | 182.9 | 174.6 | 158.9 | 142.3 | 130.3 |
| 45°   | 3636.1 | 3439.3 | 2605.1 | 565.4 | 222.6 | 179.2 | 168.1 | 166.3 | 151.5 | 130.3 | 115.5 |
| 47.5° | 4263.3 | 3891.9 | 2772.3 | 499.8 | 247.6 | 169.1 | 156.1 | 160.7 | 145.0 | 118.2 | 101.6 |
| 50°   | 5223.1 | 4642.1 | 2928.4 | 495.2 | 285.5 | 164.4 | 145.0 | 157.0 | 138.6 | 106.2 | 89.6  |
| 52.5° | 6137.7 | 5404.2 | 3028.2 | 535.8 | 318.7 | 176.4 | 134.0 | 152.4 | 134.0 | 97.9  | 81.3  |
| 55°   | 7012.5 | 5843.9 | 2849.9 | 565.4 | 350.1 | 212.5 | 125.6 | 145.0 | 128.4 | 93.3  | 78.5  |
| 57.5° | 7955.7 | 6039.8 | 2243.9 | 625.4 | 372.3 | 243.0 | 127.5 | 134.0 | 121.0 | 90.5  | 77.6  |
| 60°   | 8237.5 | 5789.4 | 1354.3 | 703.9 | 360.3 | 252.2 | 141.3 | 119.2 | 110.9 | 85.0  | 74.8  |
| 62.5° | 7799.6 | 5195.4 | 799.1  | 641.1 | 350.1 | 238.3 | 161.7 | 109.9 | 100.7 | 77.6  | 69.3  |
| 65°   | 7144.6 | 4389.0 | 521.0  | 541.3 | 371.4 | 212.5 | 171.8 | 105.3 | 91.5  | 70.2  | 61.0  |
| 67.5° | 6396.4 | 3535.4 | 364.9  | 319.6 | 342.7 | 191.2 | 145.0 | 104.4 | 82.2  | 59.1  | 49.9  |
| 70°   | 5387.6 | 2647.6 | 256.8  | 211.5 | 285.5 | 170.0 | 112.7 | 101.6 | 72.1  | 48.0  | 38.8  |
| 72.5° | 4162.6 | 1657.3 | 191.2  | 136.7 | 203.2 | 138.6 | 89.6  | 85.9  | 58.2  | 39.7  | 29.6  |
| 75°   | 3069.8 | 945.0  | 134.9  | 98.8  | 134.0 | 105.3 | 66.5  | 61.0  | 49.9  | 37.9  | 26.8  |
| 77.5° | 1602.8 | 473.0  | 84.1   | 75.8  | 76.7  | 65.6  | 48.0  | 44.3  | 46.2  | 37.9  | 24.9  |
| 80°   | 307.6  | 94.2   | 50.8   | 55.4  | 41.6  | 41.6  | 35.1  | 37.0  | 40.6  | 30.5  | 21.2  |
| 82.5° | 128.4  | 20.3   | 27.7   | 31.4  | 25.9  | 28.6  | 28.6  | 29.6  | 28.6  | 22.2  | 15.7  |
| 85°   | 0.0    | 0.0    | 12.0   | 12.9  | 17.6  | 17.6  | 14.8  | 14.8  | 14.8  | 12.9  | 9.2   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.9   | 2.8   | 5.5   | 6.5   | 7.4   | 5.5   | 3.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |





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 CATALOG NUMBER: GWS-SA2F-830-U-SLR-W-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 185°  | 195°  | 205°  | 215°  | 225°  | 235°  | 245°  | 255°  | 265°  | 270°  | 275°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 |
| 2.5°  | 386.1 | 384.3 | 387.1 | 388.9 | 390.8 | 390.8 | 388.9 | 387.1 | 384.3 | 387.1 | 384.3 |
| 5°    | 356.6 | 359.4 | 364.0 | 365.8 | 367.7 | 364.0 | 362.1 | 356.6 | 352.0 | 352.9 | 351.0 |
| 7.5°  | 333.5 | 336.3 | 341.8 | 345.5 | 345.5 | 343.7 | 338.1 | 332.6 | 325.2 | 325.2 | 324.3 |
| 10°   | 312.2 | 315.9 | 322.4 | 327.0 | 328.9 | 327.0 | 321.5 | 314.1 | 307.6 | 307.6 | 304.9 |
| 12.5° | 294.7 | 299.3 | 306.7 | 313.2 | 315.0 | 313.2 | 307.6 | 300.2 | 292.8 | 292.8 | 291.0 |
| 15°   | 279.9 | 285.5 | 293.8 | 301.2 | 303.9 | 301.2 | 294.7 | 285.5 | 278.1 | 279.0 | 276.2 |
| 17.5° | 266.1 | 270.7 | 281.8 | 290.1 | 292.8 | 290.1 | 281.8 | 269.7 | 262.4 | 264.2 | 262.4 |
| 20°   | 250.3 | 255.9 | 267.0 | 276.2 | 279.0 | 276.2 | 267.0 | 254.0 | 246.7 | 246.7 | 247.6 |
| 22.5° | 233.7 | 239.3 | 250.3 | 256.8 | 260.5 | 257.7 | 248.5 | 236.5 | 229.1 | 229.1 | 230.0 |
| 25°   | 218.9 | 221.7 | 230.0 | 236.5 | 237.4 | 234.6 | 227.3 | 218.0 | 212.5 | 215.2 | 216.2 |
| 27.5° | 205.1 | 205.1 | 208.8 | 212.5 | 211.5 | 208.8 | 206.0 | 198.6 | 197.7 | 200.5 | 203.2 |
| 30°   | 190.3 | 185.7 | 183.8 | 181.1 | 180.1 | 179.2 | 182.0 | 182.0 | 183.8 | 187.5 | 190.3 |
| 32.5° | 177.4 | 168.1 | 159.8 | 151.5 | 146.9 | 150.6 | 158.0 | 164.4 | 170.9 | 176.4 | 179.2 |
| 35°   | 162.6 | 147.8 | 134.0 | 122.9 | 115.5 | 121.0 | 133.0 | 145.0 | 156.1 | 163.5 | 168.1 |
| 37.5° | 147.8 | 126.6 | 109.9 | 96.1  | 90.5  | 95.2  | 108.1 | 124.7 | 141.3 | 150.6 | 157.0 |
| 40°   | 132.1 | 105.3 | 85.9  | 74.8  | 69.3  | 73.9  | 86.8  | 103.5 | 125.6 | 137.6 | 146.0 |
| 42.5° | 116.4 | 86.8  | 69.3  | 58.2  | 55.4  | 58.2  | 68.4  | 85.0  | 109.0 | 123.8 | 134.9 |
| 45°   | 100.7 | 72.1  | 55.4  | 47.1  | 44.3  | 47.1  | 55.4  | 69.3  | 93.3  | 109.9 | 122.9 |
| 47.5° | 86.8  | 61.0  | 46.2  | 38.8  | 37.0  | 39.7  | 46.2  | 58.2  | 78.5  | 95.2  | 109.9 |
| 50°   | 75.8  | 53.6  | 39.7  | 33.3  | 31.4  | 34.2  | 39.7  | 49.0  | 66.5  | 81.3  | 97.0  |
| 52.5° | 68.4  | 49.9  | 35.1  | 28.6  | 27.7  | 29.6  | 34.2  | 41.6  | 56.4  | 69.3  | 84.1  |
| 55°   | 66.5  | 49.9  | 32.3  | 25.9  | 24.9  | 26.8  | 30.5  | 36.0  | 49.0  | 60.0  | 73.0  |
| 57.5° | 68.4  | 53.6  | 30.5  | 22.2  | 21.2  | 23.1  | 26.8  | 31.4  | 42.5  | 51.7  | 63.7  |
| 60°   | 68.4  | 54.5  | 26.8  | 17.6  | 16.6  | 18.5  | 22.2  | 27.7  | 37.9  | 45.3  | 55.4  |
| 62.5° | 61.9  | 49.9  | 22.2  | 13.9  | 12.0  | 13.9  | 18.5  | 23.1  | 33.3  | 40.6  | 49.0  |
| 65°   | 53.6  | 42.5  | 18.5  | 10.2  | 8.3   | 10.2  | 14.8  | 19.4  | 28.6  | 35.1  | 44.3  |
| 67.5° | 43.4  | 32.3  | 13.9  | 7.4   | 5.5   | 7.4   | 11.1  | 15.7  | 24.0  | 30.5  | 39.7  |
| 70°   | 32.3  | 23.1  | 11.1  | 6.5   | 5.5   | 6.5   | 10.2  | 14.8  | 21.2  | 27.7  | 37.0  |
| 72.5° | 24.0  | 15.7  | 9.2   | 6.5   | 4.6   | 6.5   | 9.2   | 13.9  | 20.3  | 26.8  | 35.1  |
| 75°   | 20.3  | 12.9  | 8.3   | 5.5   | 4.6   | 5.5   | 8.3   | 12.9  | 18.5  | 24.9  | 33.3  |
| 77.5° | 19.4  | 12.0  | 7.4   | 4.6   | 3.7   | 4.6   | 7.4   | 11.1  | 16.6  | 23.1  | 32.3  |
| 80°   | 16.6  | 10.2  | 6.5   | 3.7   | 2.8   | 3.7   | 6.5   | 9.2   | 12.9  | 17.6  | 24.9  |
| 82.5° | 12.9  | 8.3   | 4.6   | 1.8   | 0.9   | 1.8   | 4.6   | 5.5   | 8.3   | 10.2  | 14.8  |
| 85°   | 8.3   | 4.6   | 1.8   | 0.0   | 0.0   | 0.0   | 1.8   | 3.7   | 3.7   | 4.6   | 7.4   |
| 87.5° | 3.7   | 0.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.9   | 1.8   | 2.8   |
| 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: P634030  
 CATALOG NUMBER: GWS-SA2F-830-U-SLR-W-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°  | 295°  | 305°  | 315°  | 325°  | 335°  | 345°   | 355°   | 359°   | 360°   |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0°    | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7 | 415.7  | 415.7  | 415.7  | 415.7  |
| 2.5°  | 389.8 | 390.8 | 392.6 | 395.4 | 401.9 | 407.4 | 412.9  | 420.3  | 424.0  | 424.0  |
| 5°    | 352.9 | 353.8 | 354.7 | 358.4 | 367.7 | 375.1 | 387.1  | 401.9  | 409.2  | 411.1  |
| 7.5°  | 324.3 | 326.1 | 327.9 | 330.7 | 340.0 | 350.1 | 365.8  | 393.5  | 407.4  | 410.2  |
| 10°   | 307.6 | 310.4 | 314.1 | 319.6 | 327.9 | 339.0 | 365.8  | 415.7  | 438.8  | 443.4  |
| 12.5° | 294.7 | 299.3 | 303.0 | 309.5 | 319.6 | 337.2 | 390.8  | 478.5  | 519.2  | 530.3  |
| 15°   | 281.8 | 287.3 | 292.8 | 299.3 | 310.4 | 343.7 | 438.8  | 591.2  | 658.7  | 667.0  |
| 17.5° | 268.8 | 275.3 | 282.7 | 290.1 | 303.9 | 359.4 | 514.6  | 747.4  | 841.6  | 860.1  |
| 20°   | 254.0 | 262.4 | 272.5 | 281.8 | 297.5 | 384.3 | 619.9  | 933.0  | 1051.3 | 1091.0 |
| 22.5° | 238.3 | 248.5 | 260.5 | 272.5 | 290.1 | 414.8 | 747.4  | 1132.6 | 1297.9 | 1323.8 |
| 25°   | 225.4 | 235.6 | 246.7 | 258.7 | 278.1 | 451.7 | 901.6  | 1380.1 | 1530.7 | 1555.7 |
| 27.5° | 213.4 | 223.6 | 233.7 | 244.8 | 266.1 | 499.8 | 1087.3 | 1643.4 | 1800.5 | 1826.3 |
| 30°   | 200.5 | 212.5 | 222.6 | 233.7 | 255.0 | 558.9 | 1301.6 | 1935.4 | 2084.1 | 2108.1 |
| 32.5° | 189.4 | 201.4 | 211.5 | 222.6 | 246.7 | 623.6 | 1527.0 | 2194.0 | 2315.0 | 2315.0 |
| 35°   | 180.1 | 193.1 | 200.5 | 215.2 | 240.2 | 665.1 | 1740.4 | 2440.7 | 2532.1 | 2528.4 |
| 37.5° | 170.0 | 185.7 | 191.2 | 201.4 | 231.9 | 669.8 | 1940.9 | 2701.2 | 2768.6 | 2744.6 |
| 40°   | 159.8 | 176.4 | 184.8 | 190.3 | 222.6 | 631.9 | 2160.8 | 2940.4 | 2997.7 | 2966.3 |
| 42.5° | 150.6 | 163.5 | 175.5 | 182.0 | 217.1 | 565.4 | 2337.2 | 3196.3 | 3264.7 | 3237.0 |
| 45°   | 141.3 | 152.4 | 159.8 | 171.8 | 220.8 | 519.2 | 2488.7 | 3494.7 | 3614.8 | 3594.5 |
| 47.5° | 132.1 | 141.3 | 146.0 | 164.4 | 245.7 | 497.9 | 2581.1 | 3956.6 | 4182.9 | 4166.3 |
| 50°   | 121.9 | 133.0 | 133.0 | 162.6 | 282.7 | 505.3 | 2661.5 | 4625.4 | 4975.6 | 4970.0 |
| 52.5° | 111.8 | 123.8 | 121.9 | 176.4 | 311.3 | 539.5 | 2752.9 | 5215.7 | 5824.5 | 5875.3 |
| 55°   | 101.6 | 112.7 | 114.6 | 204.2 | 327.9 | 569.1 | 2399.1 | 5464.2 | 6549.7 | 6728.0 |
| 57.5° | 90.5  | 97.0  | 119.2 | 225.4 | 322.4 | 655.0 | 1643.4 | 5509.5 | 7012.5 | 7395.0 |
| 60°   | 78.5  | 84.1  | 134.9 | 220.8 | 304.9 | 605.1 | 1034.7 | 5103.0 | 6946.9 | 7431.9 |
| 62.5° | 68.4  | 77.6  | 142.3 | 194.9 | 310.4 | 524.7 | 659.6  | 4349.2 | 6321.5 | 6874.9 |
| 65°   | 60.0  | 74.8  | 129.3 | 176.4 | 314.1 | 355.7 | 445.3  | 3538.1 | 5710.9 | 6237.5 |
| 67.5° | 53.6  | 83.1  | 106.2 | 157.0 | 269.7 | 250.3 | 305.8  | 2749.2 | 4801.9 | 5273.9 |
| 70°   | 49.0  | 85.0  | 86.8  | 134.9 | 208.8 | 160.7 | 201.4  | 1850.4 | 3310.0 | 3849.5 |
| 72.5° | 44.3  | 62.8  | 65.6  | 108.1 | 134.9 | 97.9  | 130.3  | 1058.7 | 2413.0 | 2780.6 |
| 75°   | 42.5  | 42.5  | 45.3  | 70.2  | 74.8  | 71.1  | 84.1   | 631.9  | 1730.3 | 1999.1 |
| 77.5° | 39.7  | 32.3  | 28.6  | 45.3  | 40.6  | 50.8  | 49.9   | 280.8  | 750.1  | 811.1  |
| 80°   | 31.4  | 23.1  | 19.4  | 28.6  | 27.7  | 34.2  | 29.6   | 23.1   | 34.2   | 33.3   |
| 82.5° | 19.4  | 14.8  | 13.9  | 17.6  | 15.7  | 17.6  | 13.9   | 3.7    | 3.7    | 3.7    |
| 85°   | 9.2   | 8.3   | 7.4   | 7.4   | 8.3   | 7.4   | 5.5    | 1.8    | 0.9    | 0.9    |
| 87.5° | 4.6   | 4.6   | 3.7   | 2.8   | 3.7   | 3.7   | 2.8    | 0.9    | 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    |

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: SP1-2408-195-9

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: 4π  
 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  
 Rf: 81.5  
 Rg: 99.2

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



**Test Conditions**

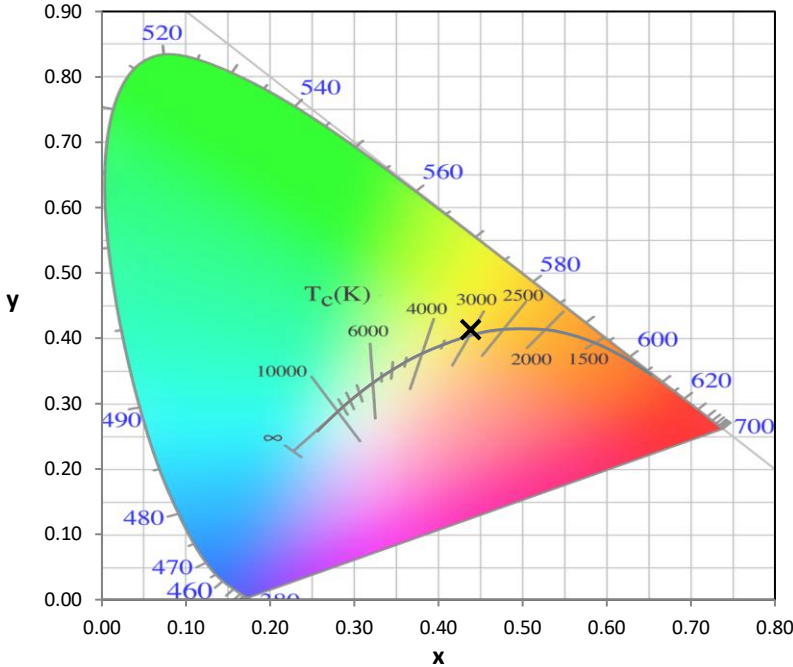
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

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           |

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /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**

| $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /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

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

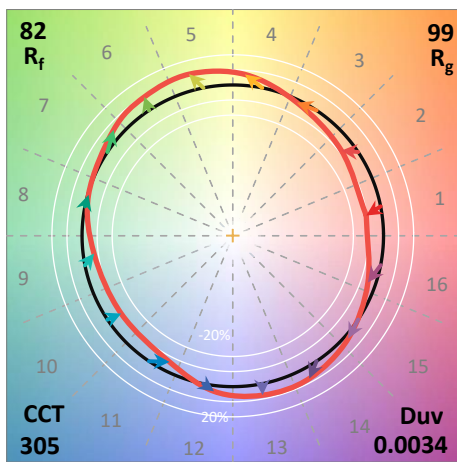
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 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            |        |                          |               |

**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)