

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: P631057

Luminaire Tested: GWS-SA1E-830-U-SLL-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631057  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-37)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1E-830-U-SLL-W  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND  
SPILL LIGHT ELIMINATOR LEFT OPTICS  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5641.7 lumens  
Efficiency: N/A  
Efficacy: 96.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G2

Input Watts (W): 58.4  
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



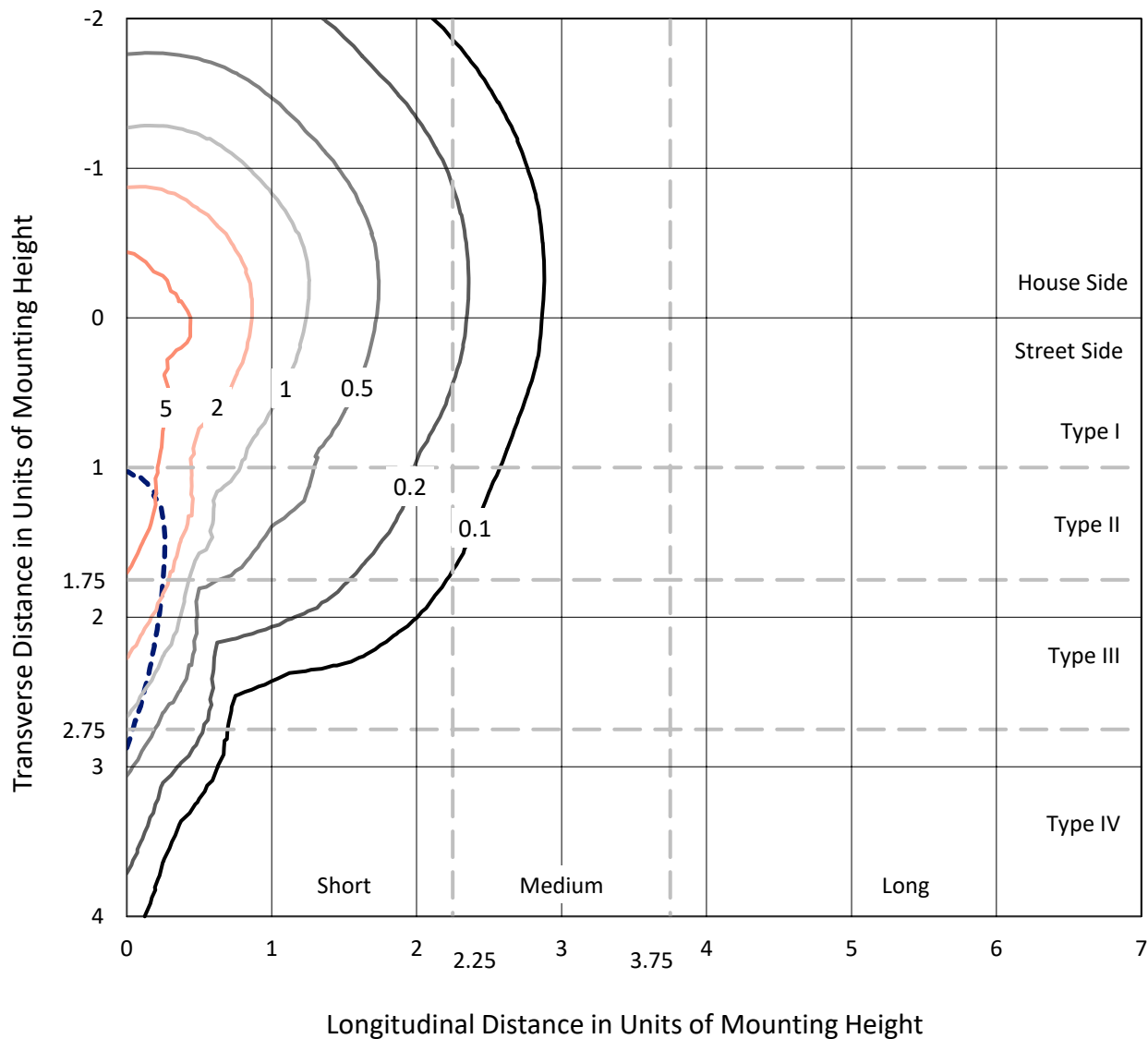
REPORT NUMBER: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

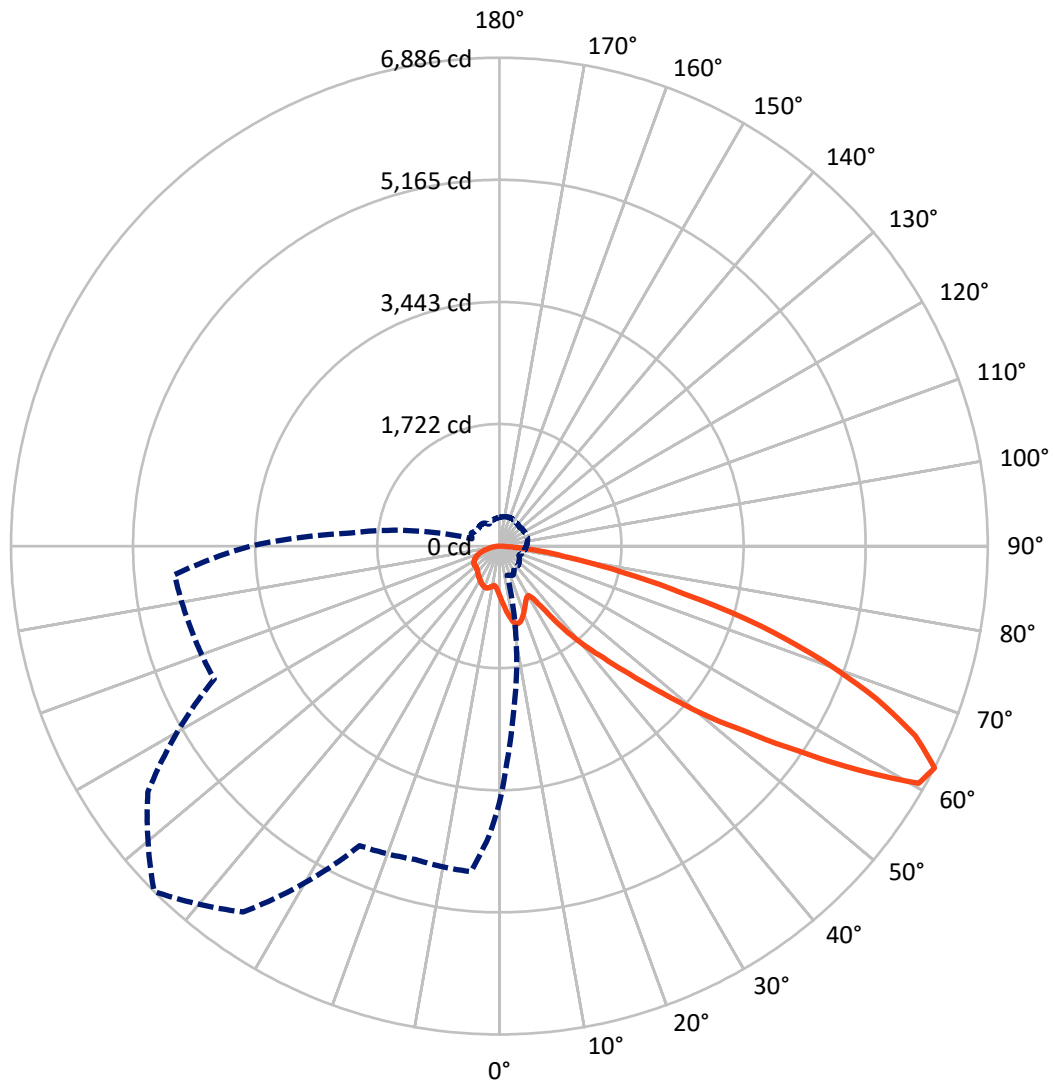


Based on 10 foot mounting height. Maximum calculated value = 9.4 fc  
 Type III - Short - N/A

REPORT NUMBER: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

## Luminous Intensity Polar Plot



— Vertical Plane Through 315-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical

REPORT NUMBER: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

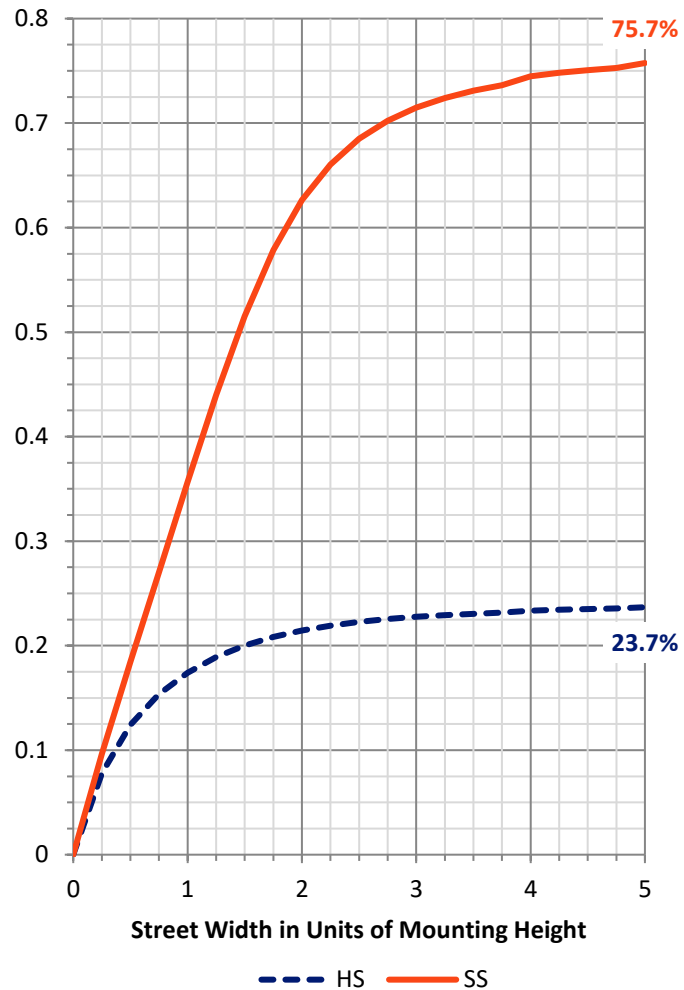
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1348.9   | 0.0    | 1348.9 |
|                    | % Fixture | 23.9     | 0.0    | 23.9   |
| <b>Street Side</b> | Lumens    | 4292.8   | 0.0    | 4292.8 |
|                    | % Fixture | 76.1     | 0.0    | 76.1   |
| <b>Total</b>       | Lumens    | 5641.7   | 0.0    | 5641.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 69.3   | 1.2       |
| 10°-20°   | 225.2  | 4.0       |
| 20°-30°   | 354.5  | 6.3       |
| 30°-40°   | 486.0  | 8.6       |
| 40°-50°   | 758.2  | 13.4      |
| 50°-60°   | 1307.4 | 23.2      |
| 60°-70°   | 1515.1 | 26.9      |
| 70°-80°   | 799.7  | 14.2      |
| 80°-90°   | 126.3  | 2.2       |
| 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°    | 5641.7 | 100.0     |
| 0°-180°   | 5641.7 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P631057

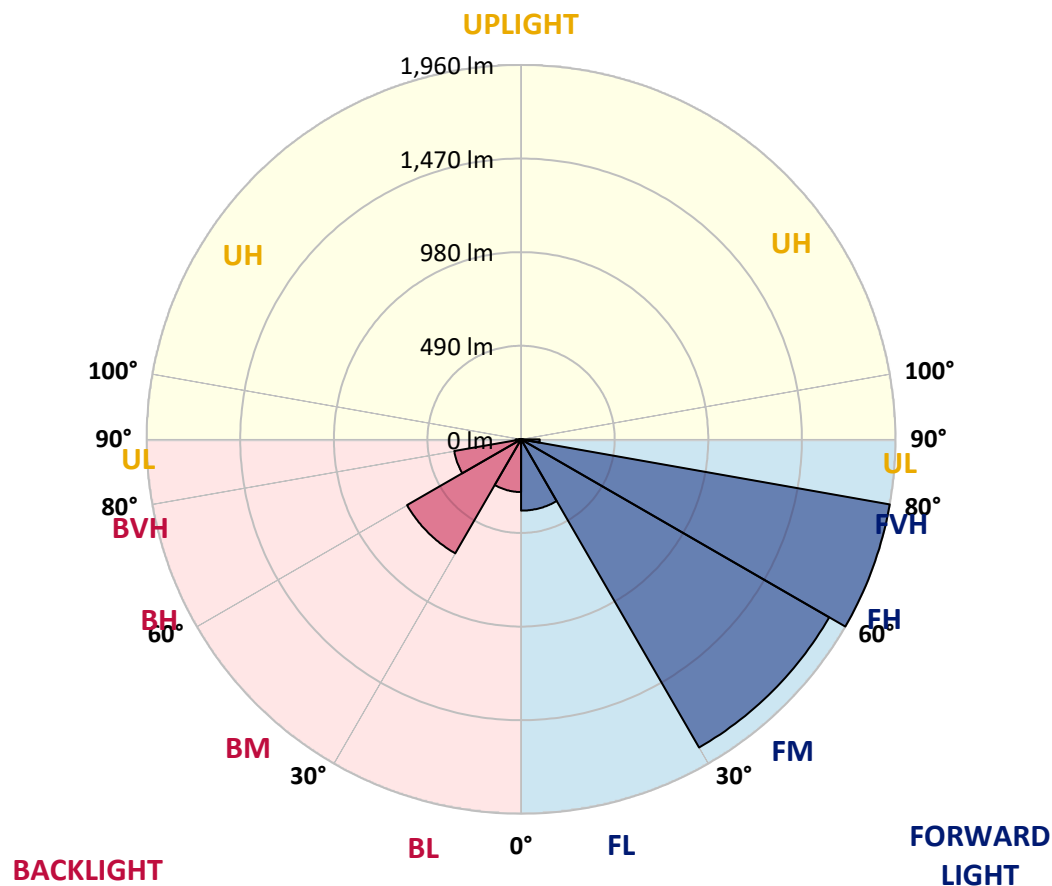
CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 373.1  | 6.6       |                         |      |         |
| FM   | (30°-60°)   | 1862.5 | 33.0      |                         |      |         |
| FH   | (60°-80°)   | 1959.6 | 34.7      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 97.5   | 1.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 275.9  | 4.9       | B1/500                  |      |         |
| BM   | (30°-60°)   | 689.0  | 12.2      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 355.2  | 6.3       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 28.8   | 0.5       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**

Type III Short





REPORT NUMBER: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 2°     | 5°     | 15°    | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   |
|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 703.4  | 703.4  | 703.4  | 703.4  | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 |
| 2.5°  | 764.2  | 761.2  | 756.9  | 742.2  | 733.2 | 722.8 | 712.0 | 699.5 | 685.3 | 675.4 | 665.4 |
| 5°    | 829.0  | 824.2  | 813.9  | 778.9  | 754.8 | 728.4 | 706.4 | 681.4 | 656.8 | 640.0 | 623.1 |
| 7.5°  | 891.1  | 885.1  | 869.1  | 815.6  | 776.3 | 738.4 | 705.1 | 668.9 | 632.2 | 607.2 | 587.3 |
| 10°   | 953.3  | 940.7  | 920.5  | 850.6  | 798.8 | 754.8 | 716.8 | 672.3 | 623.6 | 589.5 | 568.3 |
| 12.5° | 1000.7 | 989.1  | 967.1  | 882.5  | 821.2 | 766.0 | 723.3 | 682.3 | 640.8 | 604.6 | 583.0 |
| 15°   | 1045.2 | 1030.1 | 1005.0 | 912.3  | 839.8 | 765.5 | 710.3 | 674.5 | 668.4 | 659.4 | 631.3 |
| 17.5° | 1077.1 | 1063.3 | 1037.4 | 936.4  | 850.1 | 752.2 | 674.5 | 653.3 | 680.5 | 708.2 | 681.4 |
| 20°   | 1105.2 | 1089.2 | 1062.9 | 953.3  | 852.3 | 722.4 | 630.9 | 631.3 | 674.1 | 712.0 | 705.6 |
| 22.5° | 1128.9 | 1111.2 | 1087.9 | 972.2  | 851.4 | 681.0 | 592.9 | 618.8 | 661.5 | 691.3 | 692.2 |
| 25°   | 1158.2 | 1143.6 | 1124.2 | 1000.3 | 851.4 | 638.7 | 565.3 | 603.7 | 640.4 | 665.4 | 664.6 |
| 27.5° | 1194.1 | 1184.1 | 1168.2 | 1043.0 | 859.2 | 603.3 | 549.8 | 584.3 | 613.2 | 634.8 | 634.4 |
| 30°   | 1234.2 | 1225.1 | 1213.0 | 1088.3 | 872.6 | 577.0 | 541.1 | 560.1 | 581.3 | 598.5 | 598.5 |
| 32.5° | 1275.2 | 1271.7 | 1258.8 | 1124.6 | 862.2 | 568.8 | 533.8 | 536.0 | 547.2 | 561.4 | 560.1 |
| 35°   | 1332.2 | 1328.7 | 1312.3 | 1152.6 | 817.3 | 557.1 | 522.2 | 511.4 | 512.7 | 521.7 | 524.7 |
| 37.5° | 1415.4 | 1410.3 | 1386.1 | 1185.4 | 749.6 | 527.8 | 503.2 | 485.5 | 481.6 | 485.5 | 491.1 |
| 40°   | 1516.0 | 1508.2 | 1475.4 | 1229.9 | 671.5 | 488.1 | 473.4 | 458.7 | 452.2 | 453.5 | 460.0 |
| 42.5° | 1642.0 | 1625.6 | 1578.6 | 1276.9 | 594.2 | 453.1 | 440.2 | 431.1 | 423.8 | 422.9 | 435.4 |
| 45°   | 1846.5 | 1801.7 | 1727.0 | 1318.8 | 529.1 | 434.6 | 410.4 | 403.9 | 397.9 | 401.3 | 416.0 |
| 47.5° | 2203.9 | 2121.0 | 1975.6 | 1354.6 | 489.4 | 435.0 | 386.7 | 379.8 | 379.3 | 386.2 | 402.6 |
| 50°   | 2694.9 | 2575.4 | 2351.0 | 1378.8 | 468.6 | 440.2 | 372.4 | 361.2 | 369.4 | 376.3 | 391.8 |
| 52.5° | 3165.3 | 2982.8 | 2715.7 | 1378.3 | 459.6 | 441.0 | 376.3 | 343.9 | 369.4 | 371.1 | 385.8 |
| 55°   | 3567.1 | 3236.5 | 2814.0 | 1236.8 | 446.6 | 437.6 | 391.4 | 330.6 | 364.6 | 371.1 | 382.8 |
| 57.5° | 3886.4 | 3397.9 | 2806.7 | 999.0  | 485.9 | 418.6 | 400.5 | 327.5 | 350.8 | 372.0 | 385.4 |
| 60°   | 3851.0 | 3324.1 | 2625.9 | 613.2  | 482.0 | 384.9 | 399.2 | 333.1 | 327.5 | 360.3 | 382.3 |
| 62.5° | 3615.8 | 3059.6 | 2314.8 | 425.5  | 452.7 | 365.5 | 378.0 | 343.1 | 306.0 | 343.5 | 367.7 |
| 65°   | 3286.6 | 2718.2 | 1929.0 | 326.2  | 375.0 | 366.4 | 342.2 | 336.2 | 287.0 | 316.7 | 342.6 |
| 67.5° | 2851.2 | 2294.9 | 1522.9 | 258.5  | 261.5 | 317.2 | 310.7 | 298.6 | 269.3 | 293.0 | 316.3 |
| 70°   | 2143.4 | 1674.8 | 1047.8 | 208.0  | 198.1 | 265.0 | 279.2 | 268.4 | 252.0 | 258.9 | 283.5 |
| 72.5° | 1510.4 | 1093.5 | 573.9  | 164.8  | 152.8 | 203.7 | 242.5 | 240.8 | 222.7 | 227.9 | 252.0 |
| 75°   | 1122.4 | 773.7  | 358.6  | 130.3  | 124.3 | 145.9 | 203.3 | 208.4 | 193.3 | 199.4 | 217.9 |
| 77.5° | 747.0  | 501.0  | 199.4  | 96.7   | 96.7  | 106.6 | 151.5 | 175.6 | 164.4 | 169.2 | 182.1 |
| 80°   | 412.1  | 255.0  | 99.7   | 63.4   | 65.2  | 73.4  | 110.5 | 126.4 | 126.9 | 138.5 | 142.0 |
| 82.5° | 130.3  | 81.1   | 44.4   | 37.1   | 35.0  | 41.9  | 71.2  | 90.6  | 84.6  | 107.9 | 99.3  |
| 85°   | 29.8   | 19.0   | 8.2    | 8.2    | 9.1   | 13.8  | 27.2  | 48.3  | 61.7  | 74.2  | 53.9  |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.4   | 19.0  | 28.0  | 25.0  |
| 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: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 |
| 2.5°  | 659.4 | 650.8 | 648.2 | 640.8 | 640.0 | 633.1 | 630.5 | 630.5 | 633.5 | 633.5 | 636.5 |
| 5°    | 616.2 | 605.4 | 599.4 | 590.8 | 588.6 | 583.4 | 580.0 | 580.4 | 584.3 | 586.9 | 592.1 |
| 7.5°  | 578.3 | 570.9 | 566.6 | 562.7 | 561.9 | 561.0 | 557.1 | 556.7 | 558.0 | 561.9 | 565.7 |
| 10°   | 562.3 | 557.1 | 558.4 | 561.4 | 566.2 | 568.8 | 565.3 | 563.6 | 562.3 | 564.9 | 568.3 |
| 12.5° | 577.8 | 572.6 | 575.2 | 580.4 | 586.9 | 589.5 | 588.2 | 587.8 | 589.0 | 599.0 | 606.3 |
| 15°   | 611.9 | 602.0 | 598.5 | 600.7 | 605.9 | 608.5 | 607.2 | 608.9 | 617.1 | 643.0 | 661.5 |
| 17.5° | 654.2 | 630.0 | 616.2 | 612.3 | 614.5 | 616.7 | 616.7 | 621.0 | 635.2 | 673.2 | 696.5 |
| 20°   | 677.1 | 645.6 | 622.3 | 612.8 | 613.6 | 615.8 | 615.8 | 621.8 | 637.8 | 678.4 | 693.5 |
| 22.5° | 671.0 | 642.1 | 613.6 | 603.3 | 603.7 | 605.4 | 605.4 | 610.6 | 624.9 | 660.7 | 667.6 |
| 25°   | 647.3 | 621.8 | 593.8 | 584.7 | 585.6 | 588.6 | 587.8 | 590.8 | 601.6 | 630.9 | 634.8 |
| 27.5° | 618.8 | 596.4 | 568.8 | 561.9 | 565.7 | 571.8 | 566.6 | 567.0 | 577.0 | 601.6 | 602.0 |
| 30°   | 588.2 | 569.6 | 545.0 | 539.9 | 547.2 | 550.2 | 545.5 | 545.5 | 555.4 | 572.2 | 571.8 |
| 32.5° | 555.0 | 543.3 | 525.6 | 520.0 | 528.2 | 532.9 | 526.9 | 527.8 | 535.5 | 546.8 | 542.4 |
| 35°   | 523.9 | 517.8 | 509.6 | 505.8 | 510.9 | 515.3 | 511.4 | 513.1 | 520.4 | 523.5 | 517.4 |
| 37.5° | 494.1 | 493.2 | 494.1 | 494.1 | 495.4 | 496.7 | 494.1 | 498.4 | 504.9 | 501.0 | 494.1 |
| 40°   | 468.2 | 471.7 | 479.9 | 477.7 | 476.4 | 477.7 | 476.0 | 483.3 | 489.8 | 482.9 | 474.7 |
| 42.5° | 446.6 | 453.1 | 465.6 | 465.6 | 463.0 | 463.9 | 463.0 | 472.1 | 476.8 | 467.4 | 458.3 |
| 45°   | 428.1 | 437.6 | 453.5 | 455.7 | 451.4 | 451.4 | 453.1 | 464.3 | 466.1 | 453.1 | 443.6 |
| 47.5° | 415.1 | 426.8 | 444.9 | 448.8 | 442.3 | 441.9 | 446.6 | 458.7 | 458.7 | 443.6 | 432.8 |
| 50°   | 406.1 | 419.0 | 440.6 | 445.8 | 439.3 | 437.6 | 445.3 | 457.0 | 454.4 | 436.3 | 425.5 |
| 52.5° | 400.0 | 413.4 | 440.2 | 447.5 | 443.2 | 441.5 | 449.2 | 457.4 | 451.0 | 431.5 | 420.3 |
| 55°   | 396.1 | 410.8 | 441.5 | 447.5 | 442.8 | 439.7 | 447.5 | 454.8 | 451.4 | 428.9 | 418.2 |
| 57.5° | 398.3 | 413.0 | 439.7 | 442.8 | 437.1 | 432.0 | 441.0 | 451.4 | 450.1 | 429.8 | 419.0 |
| 60°   | 394.9 | 408.2 | 430.2 | 431.1 | 421.6 | 413.4 | 426.8 | 442.3 | 442.3 | 426.8 | 417.3 |
| 62.5° | 378.9 | 392.3 | 411.7 | 412.5 | 401.8 | 392.7 | 408.2 | 426.8 | 426.4 | 413.8 | 403.9 |
| 65°   | 352.6 | 365.1 | 387.1 | 389.2 | 378.5 | 369.0 | 384.9 | 402.2 | 403.5 | 392.3 | 383.6 |
| 67.5° | 323.7 | 334.9 | 351.3 | 359.9 | 350.8 | 340.9 | 355.6 | 372.0 | 371.6 | 358.2 | 349.1 |
| 70°   | 289.1 | 299.5 | 314.6 | 321.9 | 316.3 | 306.8 | 320.2 | 328.8 | 324.9 | 318.5 | 312.4 |
| 72.5° | 255.0 | 265.0 | 279.2 | 279.2 | 273.2 | 264.1 | 268.0 | 283.5 | 288.3 | 283.5 | 279.6 |
| 75°   | 219.2 | 227.9 | 237.8 | 239.9 | 226.6 | 210.2 | 228.3 | 241.7 | 247.3 | 245.1 | 240.4 |
| 77.5° | 182.5 | 189.0 | 203.7 | 199.8 | 174.8 | 166.1 | 180.8 | 200.7 | 204.5 | 203.3 | 196.8 |
| 80°   | 140.7 | 144.6 | 160.1 | 152.3 | 132.9 | 127.3 | 133.8 | 149.3 | 150.2 | 145.9 | 137.7 |
| 82.5° | 94.5  | 99.7  | 110.0 | 94.9  | 94.5  | 89.3  | 84.1  | 85.9  | 93.6  | 92.8  | 87.2  |
| 85°   | 48.3  | 50.9  | 60.8  | 57.0  | 48.8  | 42.3  | 40.1  | 42.7  | 38.4  | 35.0  | 30.2  |
| 87.5° | 20.3  | 22.0  | 30.2  | 16.8  | 5.2   | 0.0   | 0.0   | 2.6   | 3.9   | 5.6   | 6.0   |
| 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: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

**CANDELA DISTRIBUTION (continued):**

|       | 185°  | 195°  | 205°  | 215°  | 225°  | 235°  | 245°  | 255°   | 265°   | 270°   | 275°   |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0°    | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4 | 703.4  | 703.4  | 703.4  | 703.4  |
| 2.5°  | 643.4 | 648.2 | 659.8 | 674.5 | 688.7 | 703.4 | 719.4 | 729.3  | 741.4  | 756.9  | 757.3  |
| 5°    | 598.5 | 609.3 | 626.2 | 648.6 | 671.9 | 698.7 | 729.7 | 755.6  | 786.7  | 811.3  | 821.2  |
| 7.5°  | 570.9 | 586.5 | 607.6 | 636.1 | 666.7 | 700.0 | 740.5 | 784.1  | 835.0  | 867.8  | 887.2  |
| 10°   | 573.5 | 597.2 | 618.4 | 642.6 | 670.2 | 706.0 | 758.2 | 816.0  | 878.6  | 921.8  | 945.9  |
| 12.5° | 619.7 | 644.7 | 640.8 | 639.5 | 658.1 | 701.7 | 772.4 | 848.4  | 924.8  | 967.9  | 996.8  |
| 15°   | 677.9 | 687.4 | 650.8 | 623.1 | 634.4 | 686.1 | 780.2 | 877.3  | 963.2  | 1015.8 | 1044.3 |
| 17.5° | 707.7 | 688.7 | 644.3 | 602.9 | 599.8 | 662.4 | 784.1 | 906.7  | 1006.3 | 1059.0 | 1089.2 |
| 20°   | 693.9 | 666.3 | 628.7 | 589.5 | 567.9 | 630.0 | 781.9 | 930.0  | 1045.6 | 1104.3 | 1128.9 |
| 22.5° | 664.1 | 640.0 | 610.6 | 573.1 | 542.0 | 594.7 | 776.3 | 953.3  | 1080.6 | 1139.7 | 1161.3 |
| 25°   | 631.8 | 613.6 | 589.5 | 556.7 | 527.3 | 563.6 | 772.4 | 984.3  | 1120.7 | 1177.2 | 1191.0 |
| 27.5° | 599.4 | 586.0 | 566.2 | 540.7 | 523.9 | 542.0 | 773.7 | 1024.9 | 1172.5 | 1226.0 | 1220.4 |
| 30°   | 567.5 | 555.8 | 542.0 | 530.8 | 523.5 | 536.8 | 770.3 | 1068.1 | 1229.4 | 1279.1 | 1245.8 |
| 32.5° | 537.3 | 526.5 | 517.8 | 519.6 | 523.9 | 539.0 | 752.6 | 1107.3 | 1281.7 | 1324.0 | 1273.5 |
| 35°   | 511.4 | 500.1 | 500.1 | 506.2 | 522.2 | 531.7 | 706.9 | 1138.0 | 1339.5 | 1381.8 | 1312.7 |
| 37.5° | 487.2 | 477.3 | 483.8 | 493.7 | 508.8 | 511.8 | 648.2 | 1167.7 | 1423.6 | 1463.3 | 1373.6 |
| 40°   | 466.1 | 456.1 | 467.8 | 480.3 | 488.1 | 486.8 | 588.6 | 1209.2 | 1522.9 | 1563.9 | 1454.3 |
| 42.5° | 449.2 | 440.2 | 450.5 | 466.5 | 467.8 | 469.1 | 545.0 | 1248.9 | 1638.1 | 1690.3 | 1593.2 |
| 45°   | 435.4 | 428.9 | 434.1 | 450.1 | 450.1 | 469.9 | 517.8 | 1282.1 | 1811.6 | 1903.9 | 1848.3 |
| 47.5° | 424.6 | 420.7 | 423.3 | 428.5 | 437.1 | 485.5 | 500.6 | 1307.6 | 2127.5 | 2308.7 | 2252.6 |
| 50°   | 418.6 | 414.7 | 418.2 | 407.4 | 433.3 | 493.2 | 495.0 | 1327.0 | 2543.9 | 2827.9 | 2758.4 |
| 52.5° | 413.4 | 412.1 | 414.3 | 389.2 | 441.9 | 488.1 | 490.7 | 1301.1 | 2823.1 | 3338.8 | 3407.4 |
| 55°   | 411.7 | 412.5 | 402.2 | 375.9 | 452.2 | 470.8 | 477.7 | 1116.0 | 2899.1 | 3779.4 | 4205.3 |
| 57.5° | 412.5 | 410.0 | 383.6 | 377.2 | 452.7 | 436.3 | 496.3 | 796.2  | 2788.6 | 3971.0 | 4986.0 |
| 60°   | 409.5 | 396.6 | 361.2 | 388.8 | 432.8 | 395.7 | 482.9 | 519.1  | 2497.3 | 3823.8 | 5031.3 |
| 62.5° | 396.1 | 377.2 | 341.8 | 395.3 | 397.4 | 371.6 | 438.4 | 400.0  | 2108.9 | 3508.8 | 4594.6 |
| 65°   | 376.7 | 351.3 | 325.4 | 381.9 | 361.6 | 360.3 | 329.7 | 320.6  | 1695.9 | 3133.8 | 4180.3 |
| 67.5° | 344.8 | 319.3 | 313.3 | 351.3 | 325.4 | 319.3 | 265.0 | 265.8  | 1353.3 | 2734.2 | 3763.9 |
| 70°   | 308.5 | 283.1 | 287.8 | 317.6 | 289.6 | 265.4 | 214.5 | 221.4  | 1026.6 | 2278.1 | 3202.4 |
| 72.5° | 284.8 | 250.7 | 251.2 | 279.6 | 254.6 | 214.9 | 176.5 | 182.5  | 651.6  | 1717.1 | 2546.1 |
| 75°   | 240.4 | 220.9 | 211.5 | 226.6 | 216.2 | 167.4 | 148.4 | 147.2  | 386.2  | 1230.7 | 1906.5 |
| 77.5° | 200.7 | 185.6 | 180.8 | 186.9 | 161.4 | 123.9 | 119.5 | 117.4  | 218.8  | 788.4  | 1249.3 |
| 80°   | 145.4 | 141.5 | 141.1 | 144.1 | 124.3 | 91.1  | 91.1  | 91.5   | 117.8  | 428.1  | 704.3  |
| 82.5° | 92.3  | 101.0 | 89.3  | 99.3  | 84.6  | 64.7  | 60.4  | 68.6   | 67.8   | 182.5  | 296.9  |
| 85°   | 38.4  | 52.6  | 49.2  | 52.2  | 40.1  | 35.4  | 38.0  | 41.0   | 39.3   | 70.3   | 115.7  |
| 87.5° | 7.3   | 8.6   | 9.5   | 9.1   | 9.1   | 11.2  | 12.5  | 15.1   | 15.1   | 20.3   | 35.0   |
| 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: P631057

CATALOG NUMBER: GWS-SA1E-830-U-SLL-W

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 358°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 703.4  | 703.4  | 703.4  | 703.4  | 703.4  | 703.4  | 703.4  | 703.4  | 703.4  | 703.4  |
| 2.5°  | 773.7  | 786.3  | 783.7  | 789.3  | 781.9  | 784.5  | 769.9  | 766.0  | 763.4  | 764.2  |
| 5°    | 853.1  | 878.6  | 883.4  | 892.8  | 886.4  | 886.4  | 860.5  | 841.1  | 834.2  | 829.0  |
| 7.5°  | 933.8  | 970.5  | 994.7  | 997.3  | 993.8  | 986.9  | 949.4  | 914.4  | 901.9  | 891.1  |
| 10°   | 1005.5 | 1049.5 | 1076.7 | 1089.6 | 1083.2 | 1072.4 | 1025.8 | 977.9  | 962.8  | 953.3  |
| 12.5° | 1060.3 | 1099.1 | 1117.2 | 1125.9 | 1125.0 | 1121.1 | 1083.2 | 1031.4 | 1015.4 | 1000.7 |
| 15°   | 1095.7 | 1115.1 | 1108.2 | 1107.8 | 1113.8 | 1129.3 | 1117.7 | 1077.1 | 1058.6 | 1045.2 |
| 17.5° | 1118.5 | 1100.0 | 1069.3 | 1055.1 | 1068.1 | 1104.7 | 1131.5 | 1108.6 | 1091.8 | 1077.1 |
| 20°   | 1126.7 | 1060.7 | 1016.3 | 989.9  | 1005.0 | 1058.1 | 1124.2 | 1131.5 | 1117.2 | 1105.2 |
| 22.5° | 1117.2 | 1012.8 | 952.4  | 921.3  | 936.0  | 999.4  | 1102.6 | 1150.0 | 1140.5 | 1128.9 |
| 25°   | 1093.9 | 962.8  | 890.3  | 862.2  | 878.2  | 942.9  | 1064.2 | 1167.3 | 1167.7 | 1158.2 |
| 27.5° | 1065.0 | 916.6  | 846.7  | 820.3  | 835.9  | 896.3  | 1026.6 | 1182.4 | 1197.5 | 1194.1 |
| 30°   | 1035.7 | 889.0  | 826.0  | 807.4  | 819.1  | 872.6  | 988.2  | 1197.9 | 1228.2 | 1234.2 |
| 32.5° | 1022.3 | 902.3  | 874.7  | 882.9  | 867.8  | 886.4  | 974.4  | 1220.0 | 1265.3 | 1275.2 |
| 35°   | 1040.0 | 1021.0 | 1090.9 | 1123.3 | 1069.8 | 999.4  | 992.1  | 1253.2 | 1317.5 | 1332.2 |
| 37.5° | 1125.9 | 1275.2 | 1379.6 | 1493.5 | 1400.8 | 1245.8 | 1079.7 | 1309.7 | 1392.1 | 1415.4 |
| 40°   | 1312.7 | 1497.0 | 1685.6 | 1832.7 | 1692.5 | 1484.1 | 1246.3 | 1393.9 | 1494.8 | 1516.0 |
| 42.5° | 1488.8 | 1705.0 | 1964.8 | 2155.1 | 1973.0 | 1678.7 | 1425.8 | 1535.4 | 1630.3 | 1642.0 |
| 45°   | 1661.4 | 1909.1 | 2302.7 | 2567.2 | 2319.9 | 1863.8 | 1609.2 | 1774.5 | 1846.1 | 1846.5 |
| 47.5° | 1863.8 | 2139.1 | 2726.4 | 3103.2 | 2780.4 | 2068.8 | 1781.4 | 2152.9 | 2252.6 | 2203.9 |
| 50°   | 2105.9 | 2367.8 | 3162.7 | 3726.7 | 3341.8 | 2320.8 | 2000.2 | 2614.2 | 2750.2 | 2694.9 |
| 52.5° | 2430.0 | 2619.9 | 3643.5 | 4334.8 | 3953.7 | 2607.8 | 2317.3 | 3223.6 | 3268.5 | 3165.3 |
| 55°   | 2886.1 | 2983.6 | 4260.6 | 5085.6 | 4636.9 | 2961.2 | 2781.2 | 3988.3 | 3862.7 | 3567.1 |
| 57.5° | 3924.8 | 3559.3 | 5052.9 | 5942.2 | 5409.7 | 3603.3 | 3797.9 | 4831.5 | 4384.8 | 3886.4 |
| 60°   | 4793.9 | 4258.4 | 5786.0 | 6792.4 | 6072.1 | 4311.0 | 4752.5 | 4978.2 | 4365.4 | 3851.0 |
| 62.5° | 4500.9 | 4436.6 | 6050.6 | 6886.0 | 6298.3 | 4659.3 | 4575.1 | 4608.4 | 4080.6 | 3615.8 |
| 65°   | 3949.0 | 4092.7 | 5814.5 | 6442.0 | 6047.5 | 4347.3 | 4138.4 | 4266.6 | 3754.8 | 3286.6 |
| 67.5° | 3623.2 | 3728.9 | 5394.6 | 5731.2 | 5591.8 | 4009.8 | 3798.8 | 3706.0 | 3249.0 | 2851.2 |
| 70°   | 3290.0 | 3377.6 | 4805.1 | 4839.2 | 4881.1 | 3448.8 | 3106.2 | 2830.0 | 2421.8 | 2143.4 |
| 72.5° | 2843.0 | 2847.7 | 4059.9 | 3862.2 | 3941.6 | 2698.8 | 2500.3 | 2115.8 | 1762.8 | 1510.4 |
| 75°   | 2385.1 | 2254.8 | 3213.6 | 2699.7 | 2858.9 | 2099.4 | 2076.1 | 1594.5 | 1329.6 | 1122.4 |
| 77.5° | 1818.5 | 1666.2 | 2347.6 | 1775.3 | 2007.9 | 1398.2 | 1560.9 | 1081.4 | 935.6  | 747.0  |
| 80°   | 1220.8 | 1125.9 | 1297.2 | 1002.0 | 1313.6 | 963.6  | 1018.0 | 612.8  | 531.2  | 412.1  |
| 82.5° | 643.9  | 549.8  | 801.8  | 594.2  | 792.3  | 529.5  | 381.9  | 189.4  | 161.4  | 130.3  |
| 85°   | 249.4  | 288.7  | 393.1  | 211.5  | 307.3  | 189.0  | 110.5  | 47.0   | 39.3   | 29.8   |
| 87.5° | 48.3   | 74.7   | 41.0   | 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    |

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

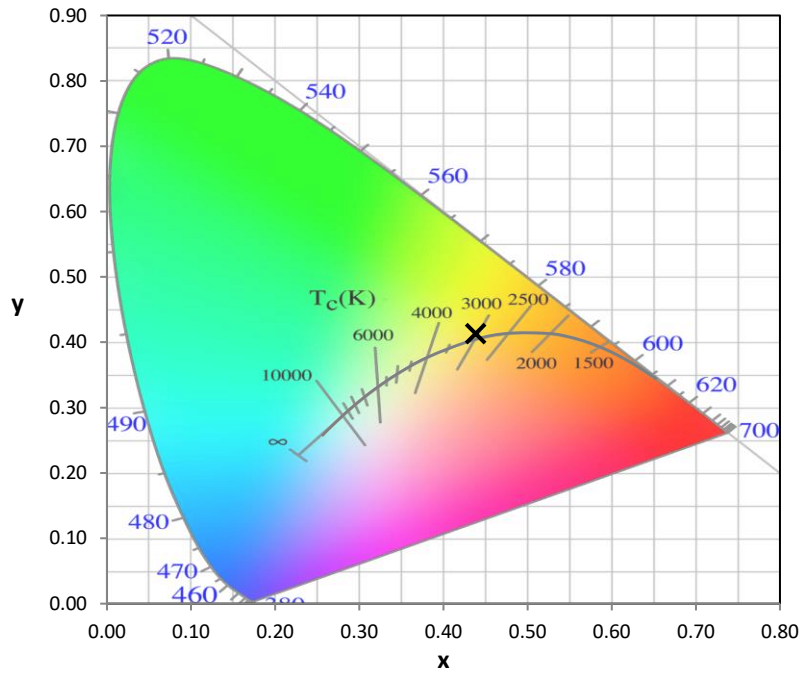
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

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

| $\lambda$<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                             |                   |                                      |                                |

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            |        |                          |               |

REPORT NUMBER: SP1-2408-195-9

### 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                             |                   |                                      |                                |

REPORT NUMBER: SP1-2408-195-9

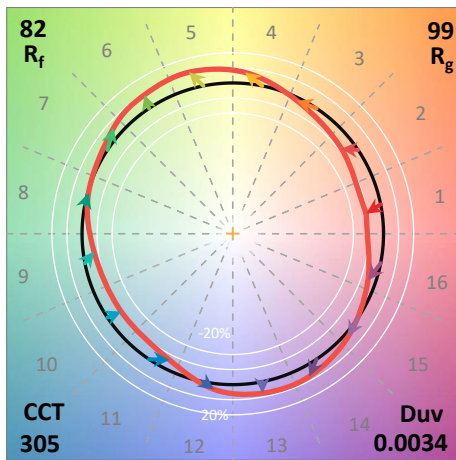
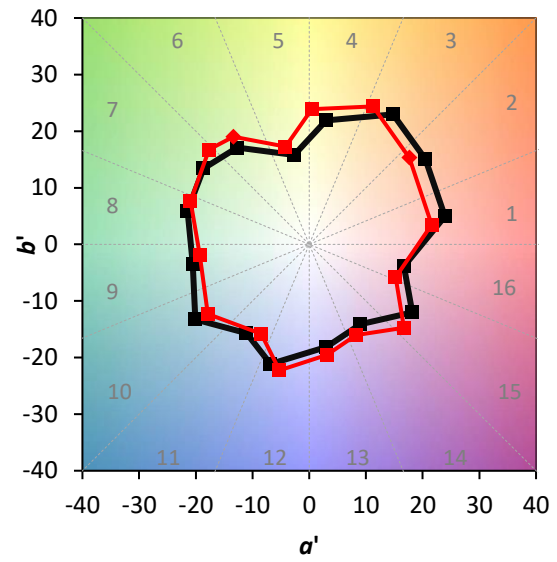
TM-30-18

### 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)