

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



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P386268

Luminaire Tested: **GPC-SA1D-830-U-5WQ**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P386268  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-2)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA1D-830-U-5WQ  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(1) 80 CRI, 3000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6936 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B3 - U0 - G2

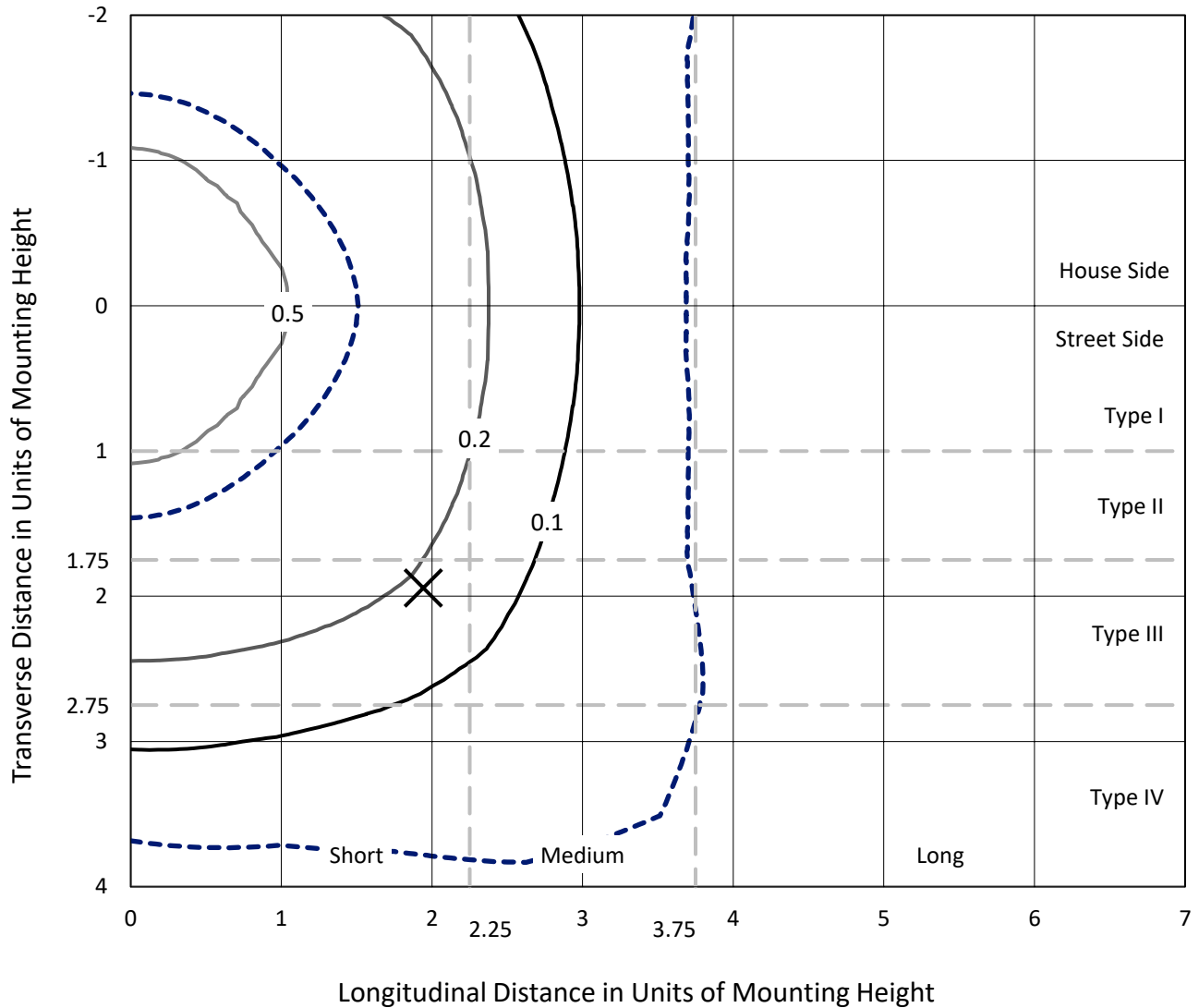
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

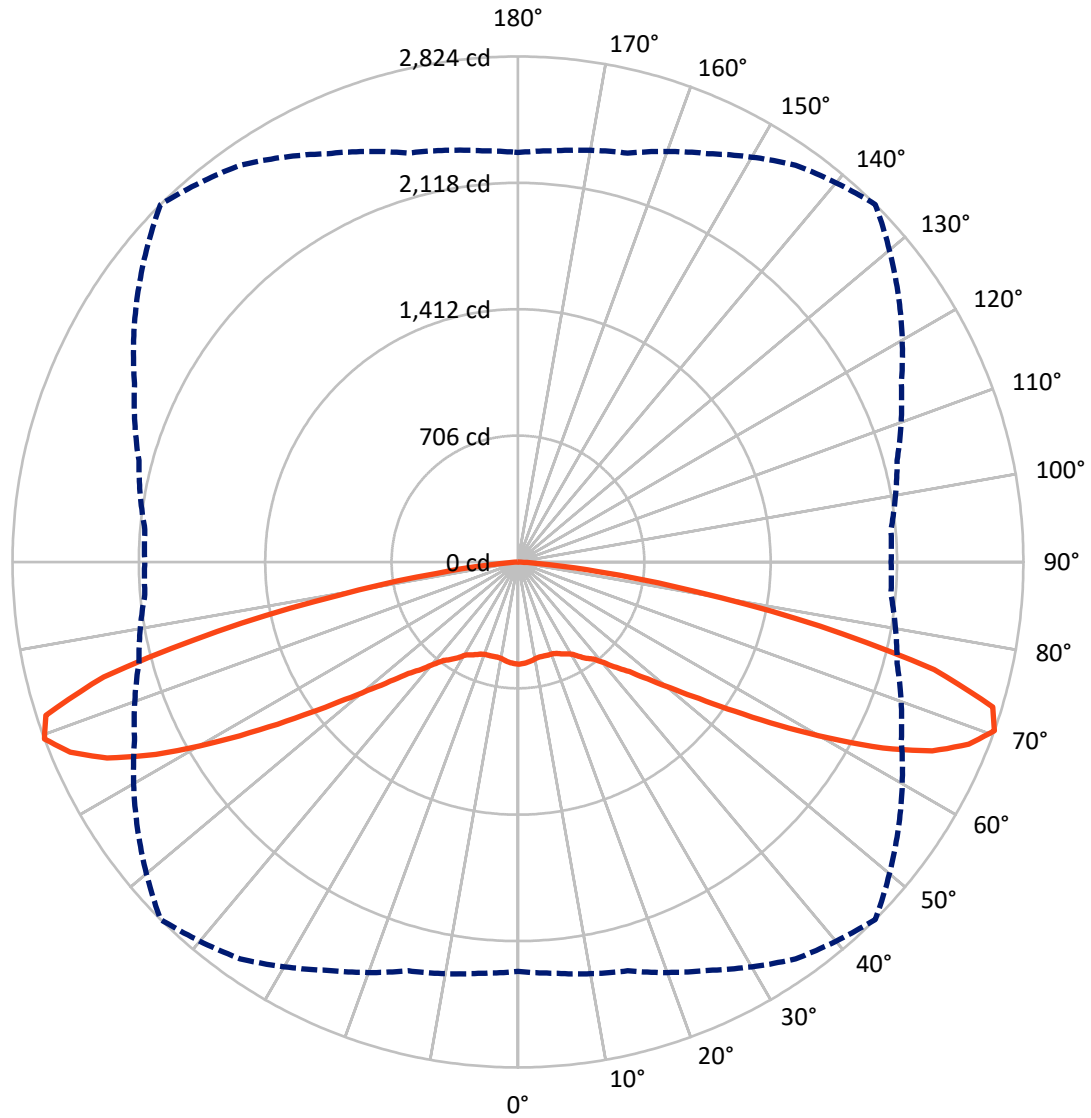
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.9 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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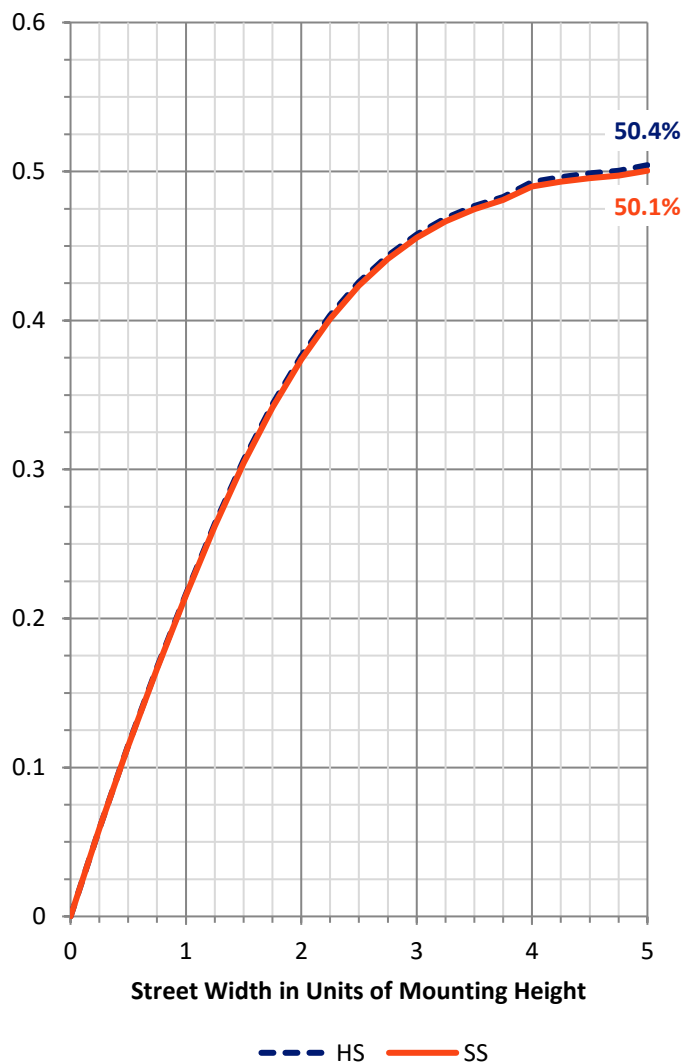
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 3468.0   | 0.0    | 3468.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 3468.0   | 0.0    | 3468.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 6936.0   | 0.0    | 6936.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 53.3   | 0.8       |
| 10°-20°   | 155.6  | 2.2       |
| 20°-30°   | 265.3  | 3.8       |
| 30°-40°   | 414.6  | 6.0       |
| 40°-50°   | 702.6  | 10.1      |
| 50°-60°   | 1281.3 | 18.5      |
| 60°-70°   | 2205.9 | 31.8      |
| 70°-80°   | 1729.1 | 24.9      |
| 80°-90°   | 128.2  | 1.8       |
| 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°    | 6936.0 | 100.0     |
| 0°-180°   | 6936.0 | 100.0     |

**Coefficient of Utilization**



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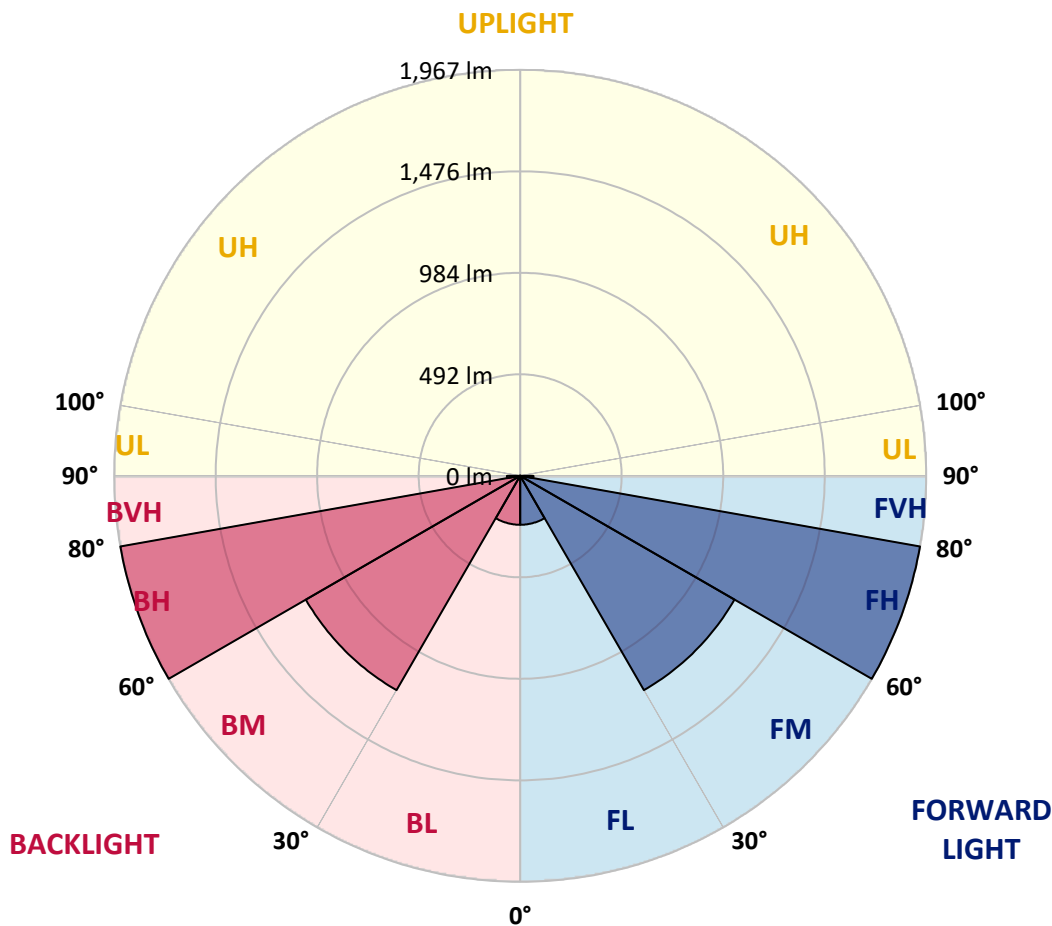
CATALOG NUMBER: GPC-SA1D-830-U-5WQ

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 237.1  | 3.4       |                         |      |         |
| FM (30°-60°)   | 1199.3 | 17.3      |                         |      |         |
| FH (60°-80°)   | 1967.5 | 28.4      |                         |      | G2/5000 |
| FVH (80°-90°)  | 64.1   | 0.9       |                         |      | G1/100  |
| BL (0°-30°)    | 237.1  | 3.4       | B1/500                  |      |         |
| BM (30°-60°)   | 1199.3 | 17.3      | B2/2500                 |      |         |
| BH (60°-80°)   | 1967.5 | 28.4      | B3/2500                 |      | G2/5000 |
| BVH (80°-90°)  | 64.1   | 0.9       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  | 570.8  |
| 2.5°  | 568.3  | 569.0  | 568.3  | 568.8  | 567.6  | 568.1  | 568.1  | 568.1  | 567.9  | 568.1  | 567.6  |
| 5°    | 563.3  | 563.7  | 562.8  | 563.3  | 562.6  | 563.3  | 563.5  | 563.3  | 562.8  | 563.0  | 562.1  |
| 7.5°  | 555.7  | 556.1  | 555.5  | 556.1  | 555.2  | 556.4  | 556.1  | 555.5  | 554.8  | 554.8  | 553.9  |
| 10°   | 551.6  | 551.8  | 550.0  | 549.3  | 547.2  | 547.7  | 548.3  | 549.0  | 549.7  | 551.1  | 550.9  |
| 12.5° | 551.8  | 551.8  | 549.0  | 546.1  | 543.1  | 543.8  | 544.9  | 547.4  | 550.2  | 552.7  | 552.9  |
| 15°   | 554.1  | 553.9  | 549.7  | 544.9  | 542.8  | 544.9  | 545.6  | 547.2  | 551.6  | 555.9  | 556.1  |
| 17.5° | 555.7  | 555.7  | 549.3  | 543.8  | 543.5  | 546.7  | 546.5  | 547.2  | 552.0  | 558.4  | 558.7  |
| 20°   | 558.7  | 558.7  | 550.4  | 544.4  | 544.4  | 547.9  | 548.1  | 549.3  | 554.1  | 561.2  | 562.3  |
| 22.5° | 565.3  | 565.6  | 556.8  | 552.0  | 552.5  | 554.5  | 555.2  | 557.1  | 561.4  | 569.2  | 570.6  |
| 25°   | 574.7  | 575.2  | 566.2  | 563.5  | 565.1  | 569.0  | 568.5  | 569.9  | 574.7  | 582.3  | 583.7  |
| 27.5° | 587.8  | 586.7  | 578.4  | 577.3  | 578.9  | 581.6  | 581.4  | 581.6  | 585.5  | 592.4  | 594.0  |
| 30°   | 604.8  | 604.3  | 598.4  | 599.1  | 598.4  | 597.4  | 597.7  | 599.5  | 601.6  | 607.1  | 608.7  |
| 32.5° | 621.3  | 621.8  | 618.1  | 621.5  | 626.6  | 630.0  | 624.8  | 619.7  | 617.4  | 620.4  | 621.8  |
| 35°   | 651.1  | 652.3  | 646.5  | 644.3  | 651.1  | 661.2  | 646.3  | 638.1  | 642.6  | 646.5  | 647.7  |
| 37.5° | 701.8  | 702.5  | 692.9  | 683.7  | 678.7  | 688.3  | 673.4  | 674.1  | 690.1  | 697.5  | 697.3  |
| 40°   | 759.7  | 759.9  | 753.5  | 745.4  | 736.7  | 739.0  | 733.0  | 734.9  | 745.4  | 752.1  | 753.9  |
| 42.5° | 828.5  | 827.8  | 817.7  | 806.2  | 803.7  | 806.0  | 795.9  | 794.5  | 806.7  | 818.6  | 818.9  |
| 45°   | 917.7  | 916.1  | 903.1  | 890.4  | 878.3  | 873.2  | 870.7  | 877.4  | 894.1  | 905.1  | 905.3  |
| 47.5° | 1013.9 | 1009.5 | 1002.6 | 992.5  | 982.0  | 976.9  | 972.8  | 976.0  | 988.2  | 992.5  | 993.0  |
| 50°   | 1112.8 | 1113.7 | 1115.1 | 1111.2 | 1107.3 | 1105.6 | 1094.9 | 1088.7 | 1092.3 | 1084.3 | 1083.2 |
| 52.5° | 1230.0 | 1231.8 | 1245.1 | 1256.4 | 1263.0 | 1266.5 | 1246.1 | 1224.7 | 1212.8 | 1197.2 | 1192.6 |
| 55°   | 1368.3 | 1371.3 | 1390.8 | 1422.0 | 1454.2 | 1471.1 | 1434.2 | 1394.3 | 1357.3 | 1328.2 | 1318.8 |
| 57.5° | 1522.5 | 1527.8 | 1554.7 | 1614.5 | 1680.4 | 1720.5 | 1658.1 | 1585.6 | 1514.3 | 1472.3 | 1464.9 |
| 60°   | 1703.3 | 1708.4 | 1745.5 | 1831.3 | 1938.0 | 1998.4 | 1903.8 | 1785.2 | 1696.4 | 1656.3 | 1642.8 |
| 62.5° | 1918.5 | 1919.0 | 1964.7 | 2064.9 | 2205.8 | 2289.8 | 2161.7 | 2003.2 | 1911.7 | 1863.2 | 1850.2 |
| 65°   | 2150.0 | 2151.2 | 2198.4 | 2306.7 | 2452.4 | 2543.7 | 2399.2 | 2234.0 | 2122.0 | 2050.7 | 2040.6 |
| 67.5° | 2313.6 | 2318.4 | 2368.2 | 2498.5 | 2634.8 | 2717.2 | 2567.6 | 2380.8 | 2251.4 | 2166.3 | 2157.8 |
| 70°   | 2287.5 | 2306.3 | 2364.8 | 2516.9 | 2706.4 | 2823.9 | 2594.9 | 2363.4 | 2192.7 | 2092.2 | 2085.1 |
| 72.5° | 1994.9 | 2031.0 | 2109.0 | 2308.6 | 2611.7 | 2773.4 | 2446.0 | 2116.8 | 1923.6 | 1838.0 | 1825.2 |
| 75°   | 1358.5 | 1417.0 | 1534.7 | 1822.6 | 2231.3 | 2401.3 | 2059.2 | 1687.7 | 1506.0 | 1387.6 | 1378.9 |
| 77.5° | 605.7  | 619.0  | 768.1  | 1099.7 | 1539.7 | 1724.4 | 1496.1 | 1104.0 | 828.7  | 661.0  | 625.7  |
| 80°   | 168.9  | 170.9  | 228.1  | 409.5  | 770.7  | 1013.2 | 827.3  | 430.2  | 241.8  | 170.5  | 160.6  |
| 82.5° | 53.7   | 58.3   | 71.1   | 106.2  | 259.0  | 462.3  | 265.9  | 114.7  | 81.7   | 65.2   | 58.7   |
| 85°   | 26.2   | 25.9   | 36.0   | 43.1   | 66.1   | 102.3  | 70.4   | 53.2   | 46.6   | 31.0   | 28.0   |
| 87.5° | 11.0   | 11.2   | 16.7   | 15.1   | 19.3   | 16.5   | 22.7   | 23.9   | 25.0   | 13.8   | 11.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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



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

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

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

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

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| $\lambda$<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                      |                   |                             |                         |

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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

| 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)