

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



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

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P643406

Luminaire Tested: GWS-SA6E-830-U-5NQ-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P643406  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-8)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SAGE-830-U-5NQ-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V NARROW OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (96) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

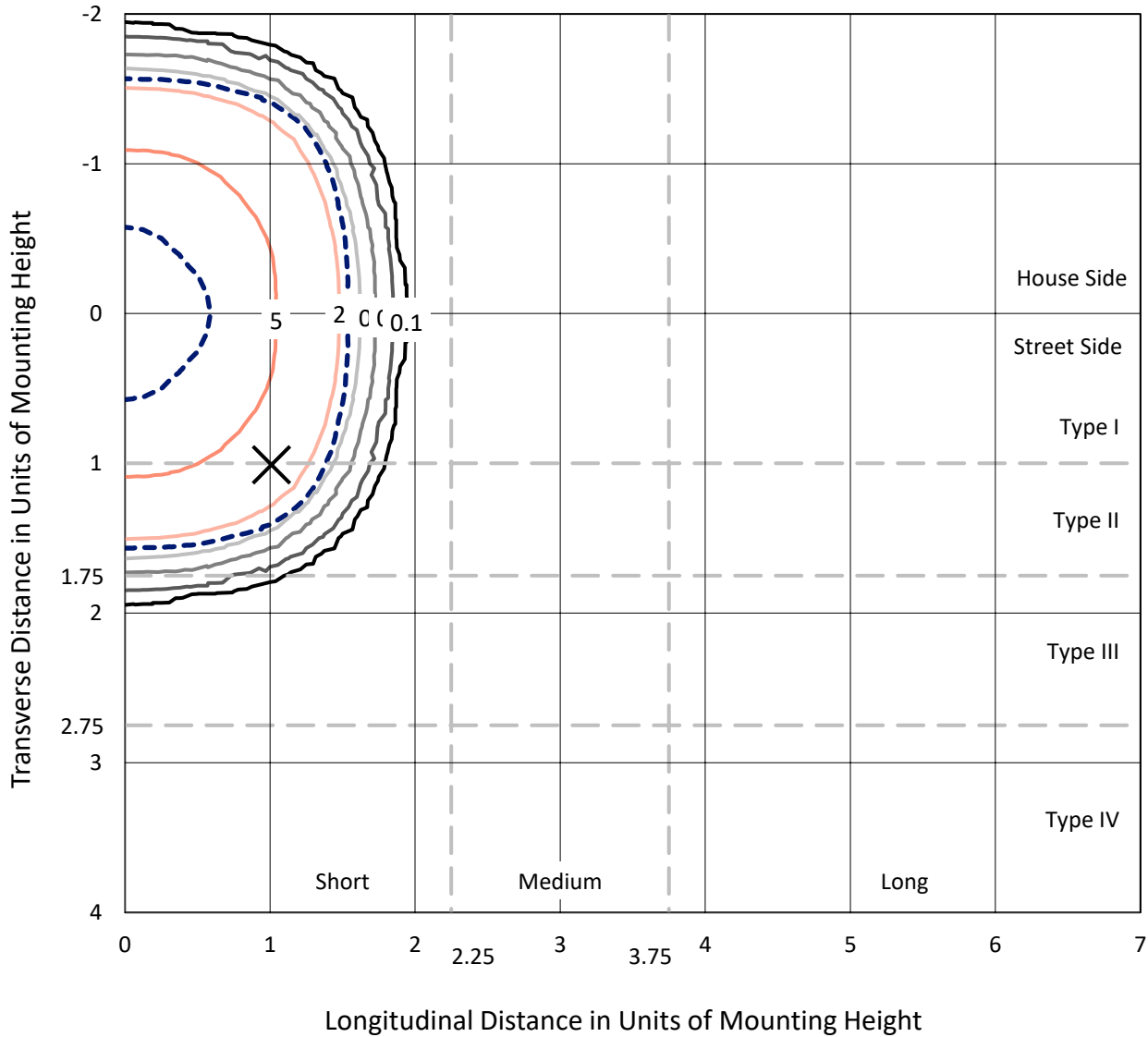
Lumens per Lamp: N/A  
Luminaire Lumens: 25023.2 lumens  
Efficiency: N/A  
Efficacy: 77.3 lumens/watt  
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B5 - U0 - G0  
  
Input Watts (W): 323.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P643406  
 CATALOG NUMBER: GWS-SA6E-830-U-5NQ-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

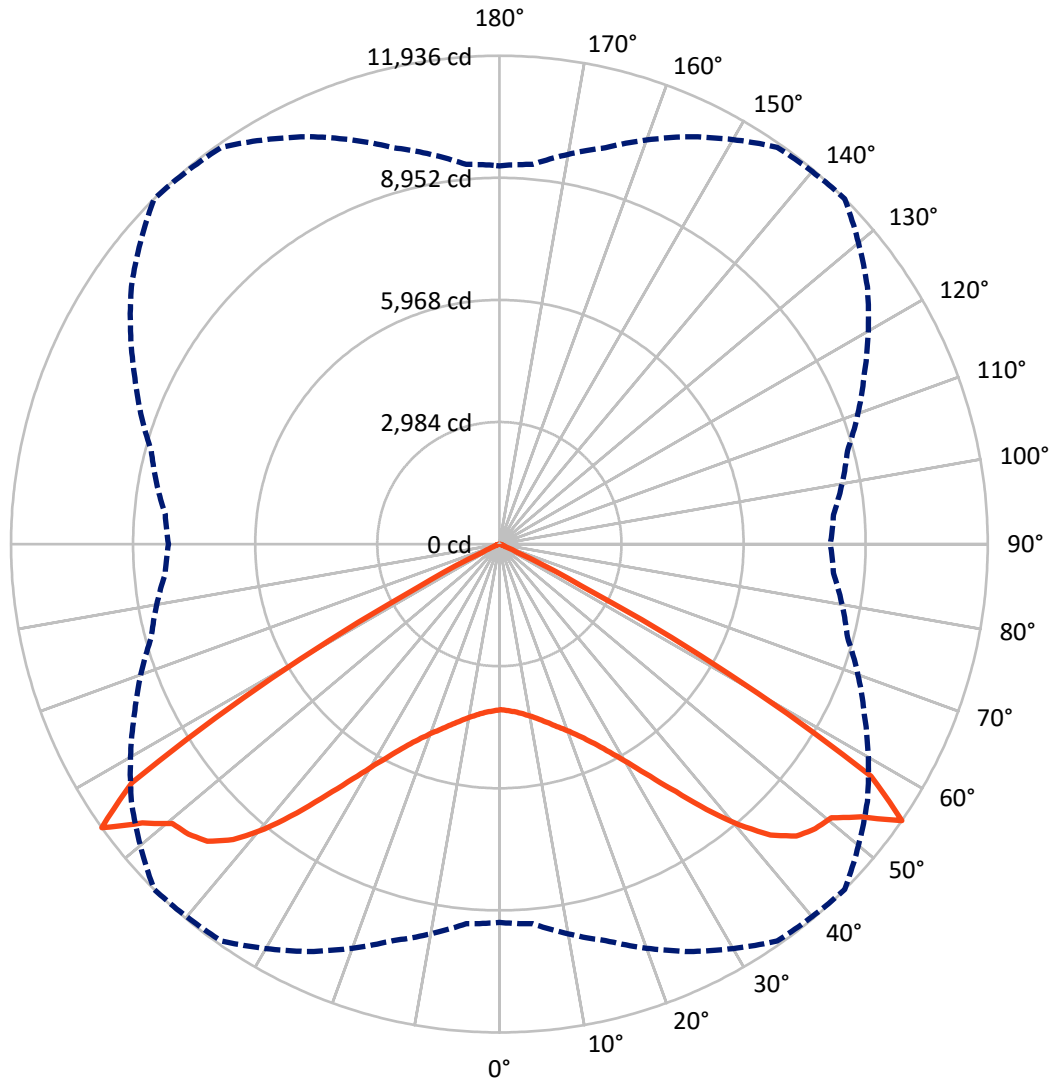
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.5 fc  
 Type V - Short - N/A

REPORT NUMBER: P643406  
CATALOG NUMBER: GWS-SA6E-830-U-5NQ-W-GRSBK

### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 55-Deg Vertical

REPORT NUMBER: P643406

CATALOG NUMBER: GWS-SA6E-830-U-5NQ-W-GRSBK

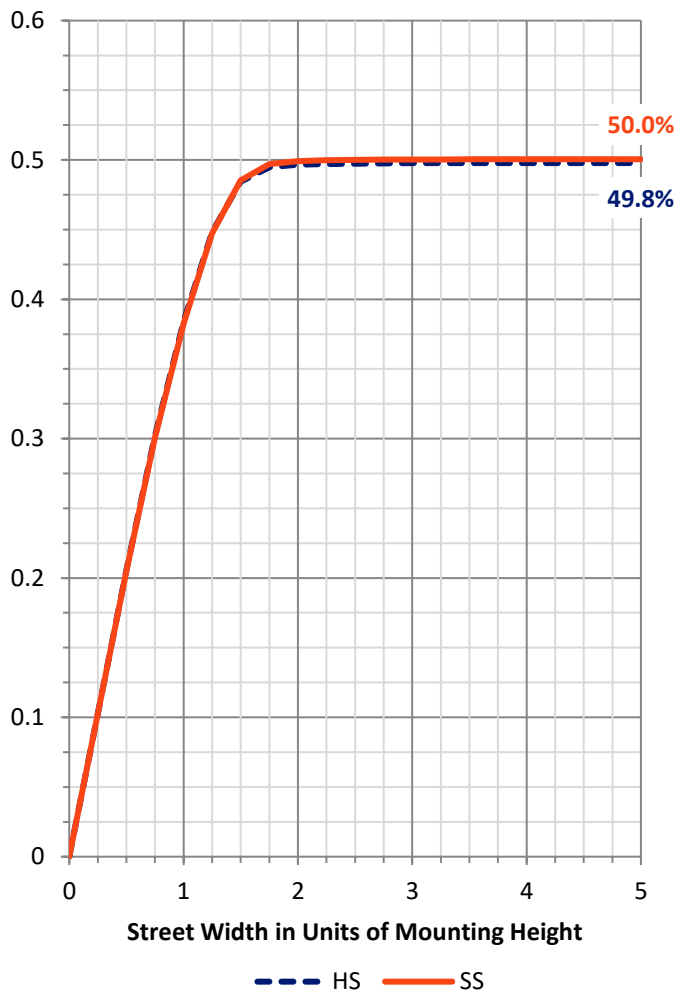
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 12511.6  | 0.0    | 12511.6 |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Street Side</b> | Lumens    | 12511.6  | 0.0    | 12511.6 |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Total</b>       | Lumens    | 25023.2  | 0.0    | 25023.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 396.4   | 1.6       |
| 10°-20°   | 1284.9  | 5.1       |
| 20°-30°   | 2488.5  | 9.9       |
| 30°-40°   | 4458.2  | 17.8      |
| 40°-50°   | 7474.5  | 29.9      |
| 50°-60°   | 8001.1  | 32.0      |
| 60°-70°   | 879.2   | 3.5       |
| 70°-80°   | 38.7    | 0.2       |
| 80°-90°   | 1.8     | 0.0       |
| 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°    | 25023.2 | 100.0     |
| 0°-180°   | 25023.2 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P643406

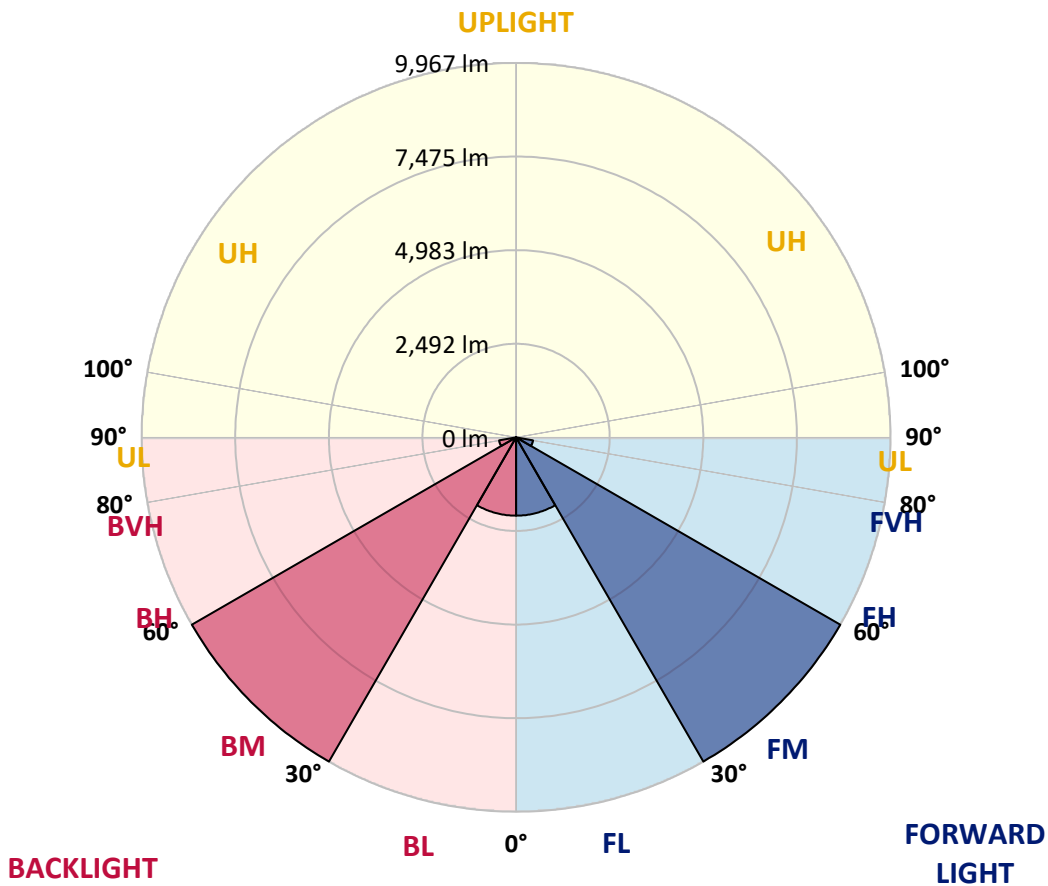
CATALOG NUMBER: GWS-SA6E-830-U-5NQ-W-GRSBK

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|----------------|--------|-----------|-------------------------|------|--------|
|                |        |           | B                       | U    | G      |
| FL (0°-30°)    | 2084.9 | 8.3       |                         |      |        |
| FM (30°-60°)   | 9966.9 | 39.8      |                         |      |        |
| FH (60°-80°)   | 459.0  | 1.8       |                         |      | G0/660 |
| FVH (80°-90°)  | 0.9    | 0.0       |                         |      | G0/10  |
| BL (0°-30°)    | 2084.9 | 8.3       | B3/2500                 |      |        |
| BM (30°-60°)   | 9966.9 | 39.8      | B5                      |      |        |
| BH (60°-80°)   | 459.0  | 1.8       | B1/500                  |      | G0/660 |
| BVH (80°-90°)  | 0.9    | 0.0       |                         |      | G0/10  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |        |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |        |

**BUG Rating: B5-U0-G0**

Type V Short





REPORT NUMBER: P643406

CATALOG NUMBER: GWS-SA6E-830-U-5NQ-W-GRSBK

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°    | 90°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|
| 0°    | 4045.8  | 4045.8  | 4045.8  | 4045.8  | 4045.8  | 4045.8  | 4045.8  | 4045.8  | 4045.8  | 4045.8 | 4045.8 |
| 2.5°  | 4038.1  | 4038.1  | 4048.3  | 4056.0  | 4056.0  | 4076.4  | 4068.7  | 4061.1  | 4061.1  | 4050.9 | 4071.3 |
| 5°    | 4096.8  | 4094.2  | 4104.4  | 4109.5  | 4099.3  | 4119.7  | 4107.0  | 4099.3  | 4094.2  | 4084.0 | 4104.4 |
| 7.5°  | 4160.5  | 4163.0  | 4165.6  | 4175.8  | 4170.7  | 4191.1  | 4180.9  | 4165.6  | 4160.5  | 4145.2 | 4165.6 |
| 10°   | 4237.0  | 4237.0  | 4242.1  | 4254.8  | 4257.4  | 4282.9  | 4272.7  | 4254.8  | 4239.5  | 4224.2 | 4244.6 |
| 12.5° | 4333.8  | 4336.4  | 4344.0  | 4361.9  | 4372.1  | 4400.1  | 4384.8  | 4349.1  | 4326.2  | 4308.3 | 4331.3 |
| 15°   | 4474.1  | 4471.5  | 4481.7  | 4507.2  | 4519.9  | 4540.3  | 4517.4  | 4469.0  | 4440.9  | 4420.5 | 4435.8 |
| 17.5° | 4627.0  | 4627.0  | 4632.1  | 4657.6  | 4675.5  | 4706.0  | 4678.0  | 4619.4  | 4593.9  | 4565.8 | 4581.1 |
| 20°   | 4795.3  | 4802.9  | 4808.0  | 4825.9  | 4856.5  | 4887.0  | 4864.1  | 4805.5  | 4777.4  | 4741.7 | 4759.6 |
| 22.5° | 5017.1  | 5009.4  | 5012.0  | 5042.6  | 5085.9  | 5116.5  | 5098.6  | 5029.8  | 4981.4  | 4953.3 | 4963.5 |
| 25°   | 5264.3  | 5261.8  | 5269.4  | 5315.3  | 5363.8  | 5396.9  | 5371.4  | 5282.2  | 5233.8  | 5185.3 | 5205.7 |
| 27.5° | 5567.7  | 5570.3  | 5575.4  | 5631.4  | 5707.9  | 5756.4  | 5692.6  | 5603.4  | 5537.1  | 5473.4 | 5488.7 |
| 30°   | 5927.2  | 5922.1  | 5937.4  | 6013.8  | 6126.0  | 6202.5  | 6128.6  | 6003.6  | 5909.3  | 5848.1 | 5855.8 |
| 32.5° | 6309.6  | 6314.7  | 6355.5  | 6477.8  | 6625.7  | 6760.8  | 6610.4  | 6444.7  | 6322.3  | 6207.6 | 6222.9 |
| 35°   | 6722.6  | 6735.3  | 6827.1  | 7008.1  | 7250.3  | 7431.3  | 7222.2  | 6949.4  | 6776.1  | 6628.2 | 6633.3 |
| 37.5° | 7209.5  | 7240.1  | 7367.5  | 7637.8  | 7984.5  | 8226.7  | 7920.7  | 7558.7  | 7334.4  | 7150.8 | 7138.1 |
| 40°   | 7849.4  | 7885.0  | 8058.4  | 8379.6  | 8800.2  | 9022.0  | 8667.7  | 8295.5  | 8017.6  | 7818.8 | 7788.2 |
| 42.5° | 8583.6  | 8629.4  | 8818.1  | 9147.0  | 9567.6  | 9718.0  | 9371.3  | 9057.7  | 8807.9  | 8573.4 | 8563.2 |
| 45°   | 9412.1  | 9437.6  | 9590.5  | 9842.9  | 10146.3 | 10182.0 | 9921.9  | 9748.6  | 9496.2  | 9277.0 | 9259.1 |
| 47.5° | 10189.6 | 10215.1 | 10319.6 | 10449.7 | 10521.0 | 10393.6 | 10347.7 | 10271.2 | 9944.9  | 9674.7 | 9618.6 |
| 50°   | 10781.1 | 10801.5 | 10931.5 | 10982.5 | 10783.6 | 10513.4 | 10602.6 | 10439.5 | 10085.1 | 9781.7 | 9695.1 |
| 52.5° | 10740.3 | 10791.3 | 11125.2 | 11415.9 | 11290.9 | 11071.7 | 10832.1 | 10480.3 | 9929.6  | 9514.1 | 9407.0 |
| 55°   | 9246.4  | 9315.2  | 10031.6 | 10987.6 | 11841.6 | 11935.9 | 10977.4 | 9842.9  | 8807.9  | 8198.6 | 8089.0 |
| 57.5° | 5942.5  | 5960.3  | 6834.7  | 8175.7  | 10100.4 | 10707.1 | 9103.6  | 7421.1  | 6133.7  | 5463.2 | 5417.3 |
| 60°   | 2184.8  | 2149.1  | 2809.3  | 3920.9  | 5817.5  | 6460.0  | 5358.7  | 3752.6  | 2676.8  | 2202.6 | 2164.4 |
| 62.5° | 525.2   | 530.3   | 657.7   | 986.6   | 1825.3  | 2258.7  | 1784.5  | 996.8   | 634.8   | 532.8  | 527.7  |
| 65°   | 265.1   | 260.0   | 262.6   | 283.0   | 390.0   | 466.5   | 382.4   | 270.2   | 260.0   | 262.6  | 260.0  |
| 67.5° | 170.8   | 168.3   | 173.4   | 175.9   | 173.4   | 163.2   | 160.6   | 165.7   | 165.7   | 168.3  | 163.2  |
| 70°   | 104.5   | 102.0   | 107.1   | 114.7   | 109.6   | 96.9    | 102.0   | 107.1   | 102.0   | 99.4   | 99.4   |
| 72.5° | 56.1    | 56.1    | 61.2    | 66.3    | 61.2    | 56.1    | 56.1    | 58.6    | 56.1    | 56.1   | 56.1   |
| 75°   | 25.5    | 25.5    | 28.0    | 30.6    | 25.5    | 25.5    | 25.5    | 25.5    | 25.5    | 25.5   | 25.5   |
| 77.5° | 7.6     | 7.6     | 10.2    | 10.2    | 7.6     | 7.6     | 7.6     | 7.6     | 10.2    | 10.2   | 10.2   |
| 80°   | 2.5     | 5.1     | 5.1     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 5.1     | 5.1    | 5.1    |
| 82.5° | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5     | 2.5    | 2.5    |
| 85°   | 2.5     | 2.5     | 2.5     | 0.0     | 0.0     | 0.0     | 0.0     | 2.5     | 2.5     | 2.5    | 2.5    |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.5     | 2.5     | 2.5    | 2.5    |
| 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

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

REPORT NUMBER: SP1-2408-195-9

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.27**

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

REPORT NUMBER: SP1-2408-195-9

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 2.32**

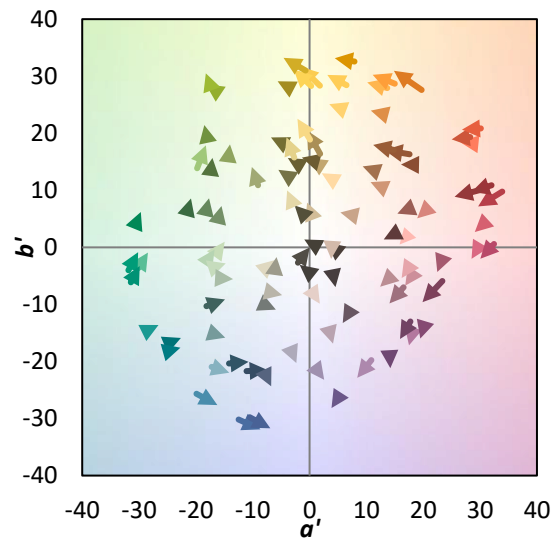
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|-------------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

**Summary**

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



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 |            |





Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)