

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: P629283

Luminaire Tested: GWS-SA1B-735-U-RW-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P629283  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-50)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1B-735-U-RW-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (16) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

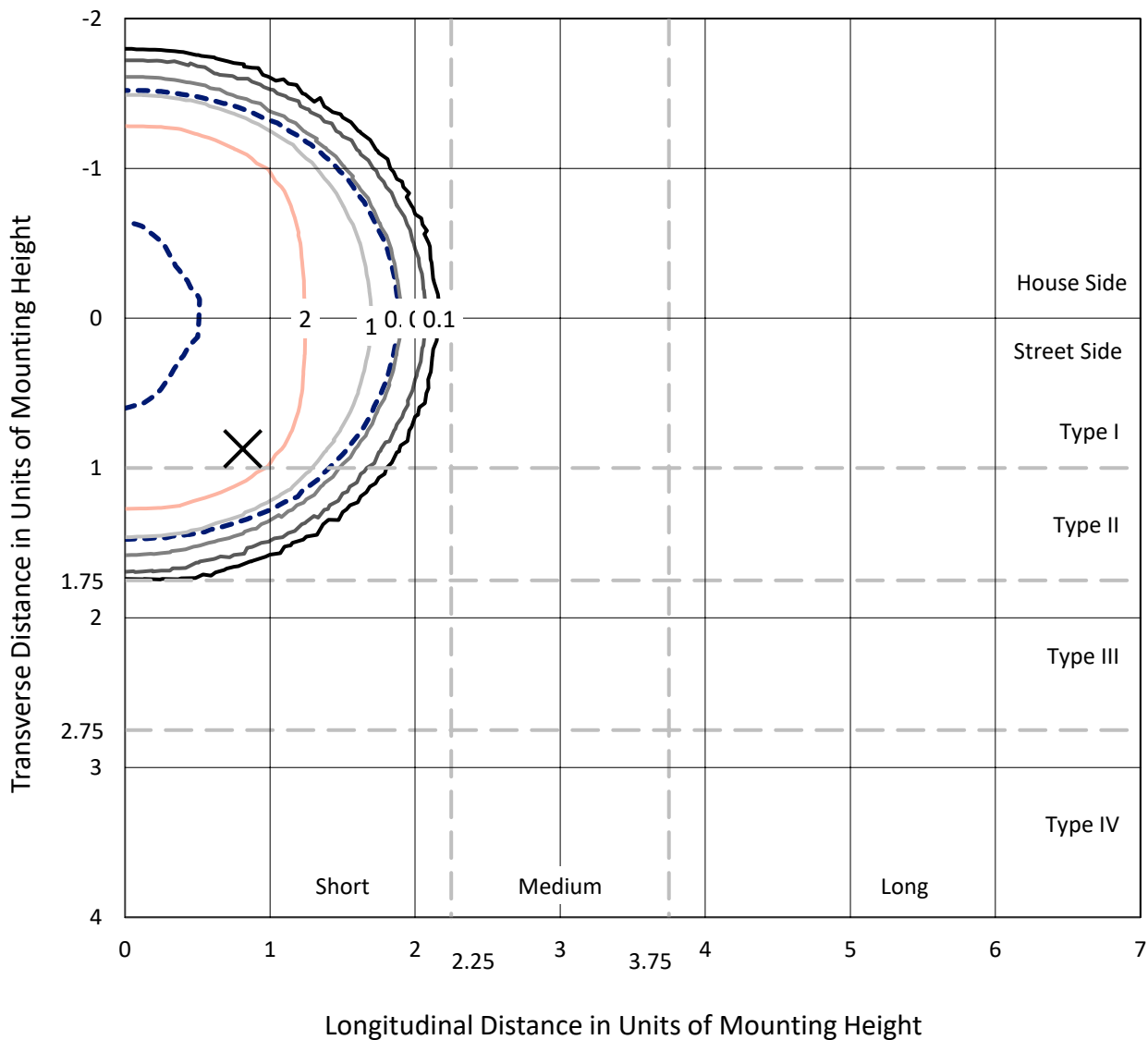
Lumens per Lamp: N/A  
Luminaire Lumens: 2291.1 lumens  
Efficiency: N/A  
Efficacy: 91.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B1 - U0 - G0  
  
Input Watts (W): 25  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P629283  
 CATALOG NUMBER: GWS-SA1B-735-U-RW-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

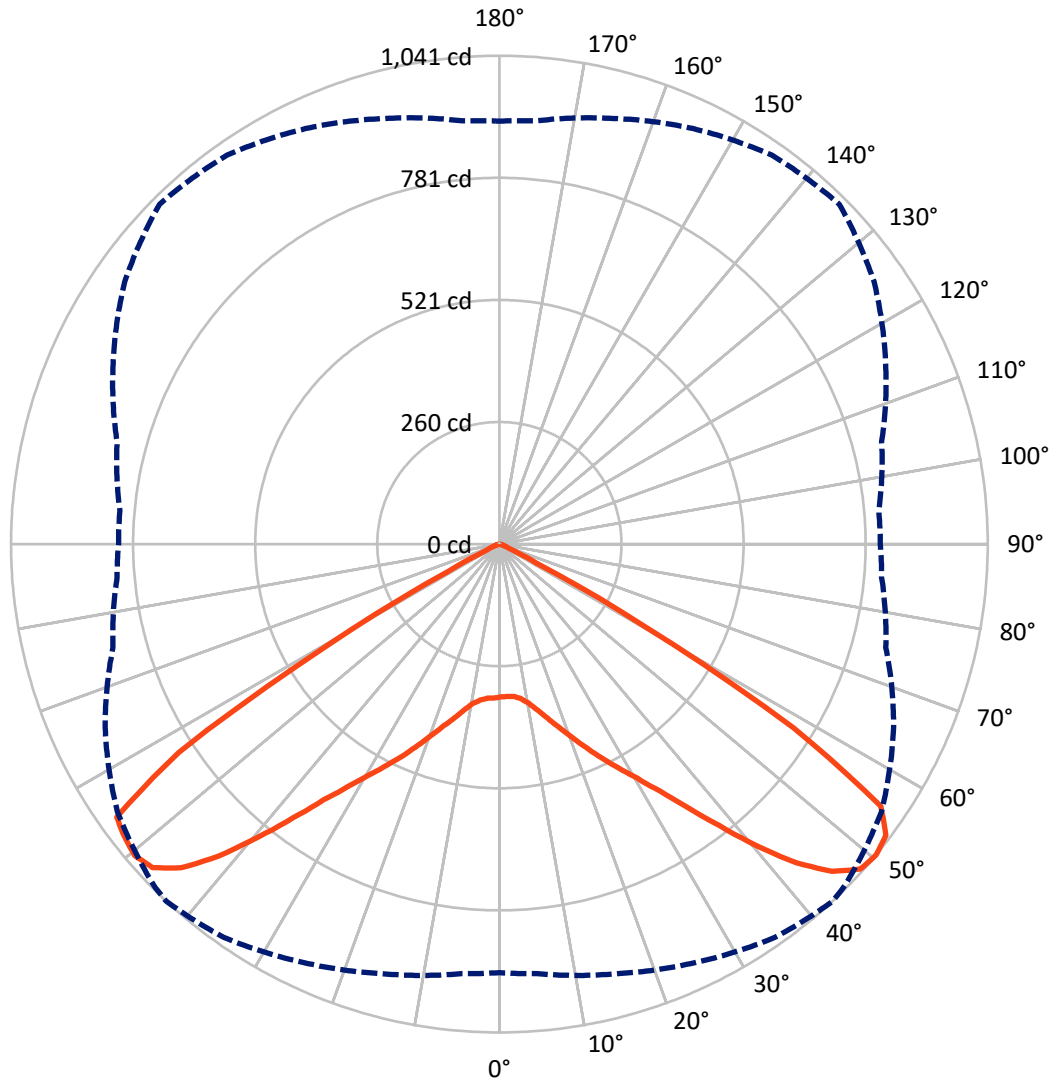
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.9 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 43-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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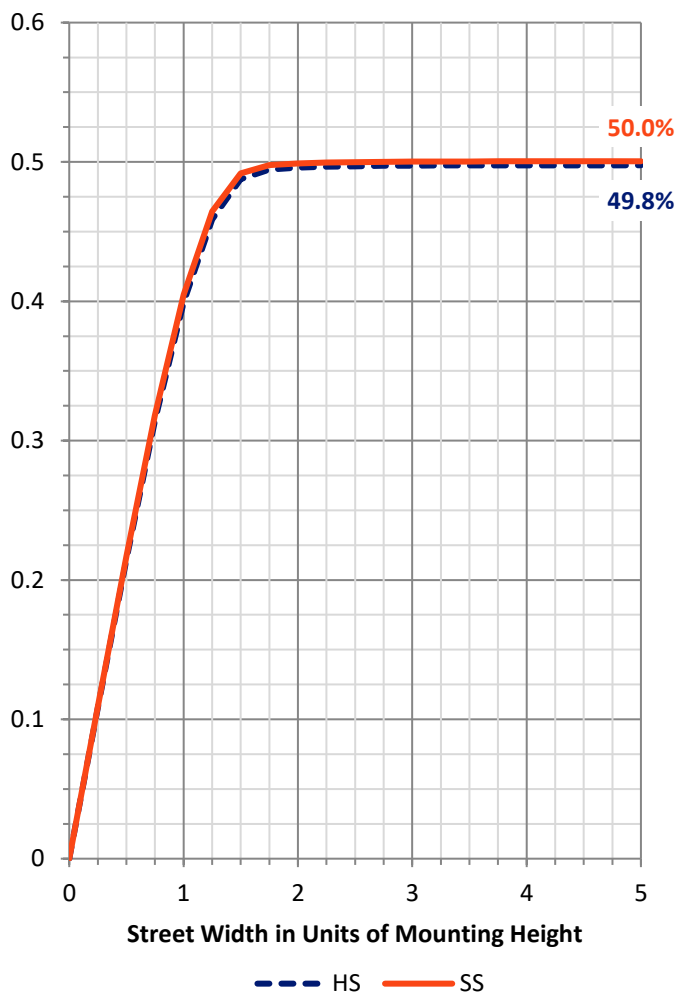
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1145.5   | 0.0    | 1145.5 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 1145.6   | 0.0    | 1145.6 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 2291.1   | 0.0    | 2291.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 32.1   | 1.4       |
| 10°-20°   | 110.4  | 4.8       |
| 20°-30°   | 223.4  | 9.8       |
| 30°-40°   | 414.5  | 18.1      |
| 40°-50°   | 688.1  | 30.0      |
| 50°-60°   | 702.2  | 30.7      |
| 60°-70°   | 115.2  | 5.0       |
| 70°-80°   | 5.0    | 0.2       |
| 80°-90°   | 0.1    | 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°    | 2291.1 | 100.0     |
| 0°-180°   | 2291.1 | 100.0     |

**Coefficient of Utilization**

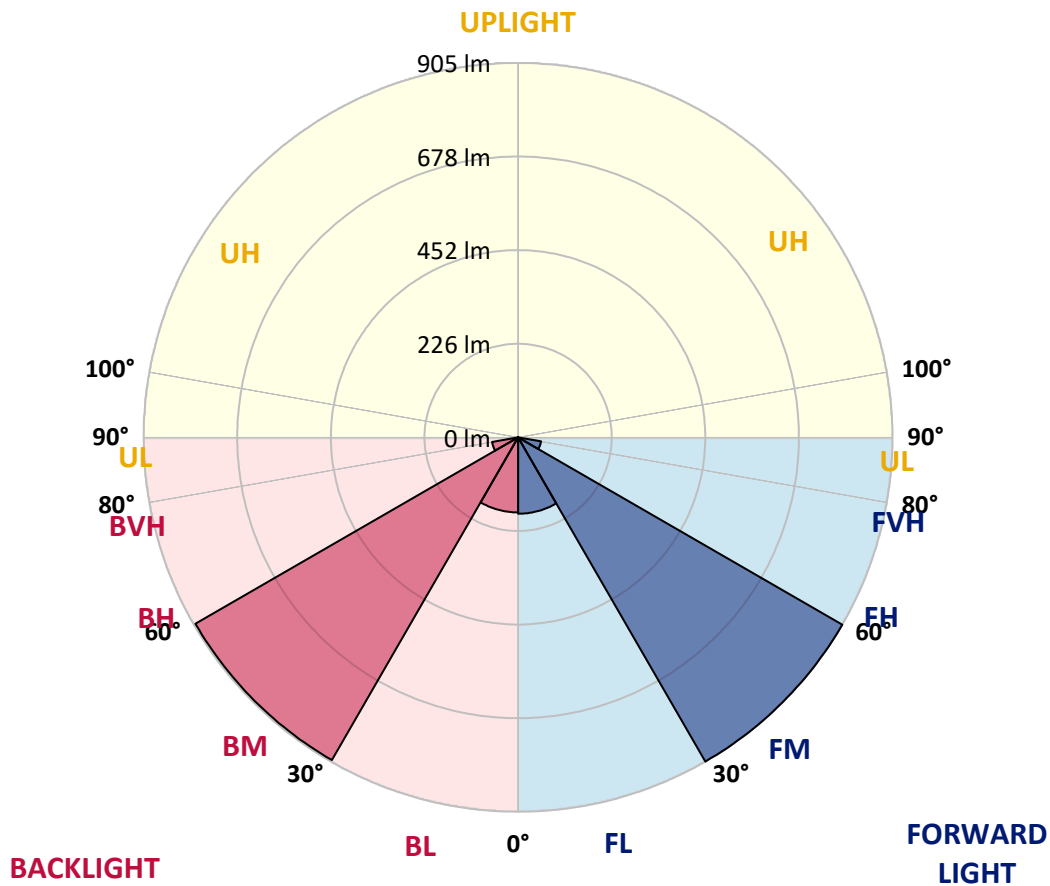


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|----------------|--------|-----------|-------------------------|------|--------|
|                |        |           | B                       | U    | G      |
| FL (0°-30°)    | 184.6  | 8.1       |                         |      |        |
| FM (30°-60°)   | 904.6  | 39.5      |                         |      |        |
| FH (60°-80°)   | 56.3   | 2.5       |                         |      | G0/660 |
| FVH (80°-90°)  | 0.0    | 0.0       |                         |      | G0/10  |
| BL (0°-30°)    | 181.4  | 7.9       | B1/500                  |      |        |
| BM (30°-60°)   | 900.2  | 39.3      | B1/1000                 |      |        |
| BH (60°-80°)   | 63.9   | 2.8       | B0/110                  |      | G0/660 |
| BVH (80°-90°)  | 0.1    | 0.0       |                         |      | G0/10  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |        |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |        |

**BUG Rating: B1-U0-G0**  
 Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 15°   | 25°   | 35°    | 43°    | 45°    | 55°    | 65°   | 75°   | 85°   |
|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|
| 0°    | 325.9 | 325.9 | 325.9 | 325.9 | 325.9  | 325.9  | 325.9  | 325.9  | 325.9 | 325.9 | 325.9 |
| 2.5°  | 319.8 | 320.6 | 321.6 | 322.6 | 323.8  | 325.1  | 325.9  | 328.2  | 327.6 | 329.7 | 329.7 |
| 5°    | 316.2 | 317.0 | 318.3 | 320.6 | 323.3  | 326.1  | 328.2  | 332.7  | 335.2 | 339.3 | 340.8 |
| 7.5°  | 318.0 | 319.0 | 320.6 | 324.1 | 328.4  | 332.7  | 335.0  | 342.3  | 347.4 | 355.0 | 359.3 |
| 10°   | 323.8 | 324.9 | 327.4 | 333.5 | 339.0  | 345.1  | 347.9  | 357.3  | 365.4 | 375.8 | 381.9 |
| 12.5° | 330.4 | 331.7 | 336.8 | 345.9 | 355.5  | 363.6  | 367.4  | 377.8  | 386.2 | 397.8 | 407.5 |
| 15°   | 337.3 | 339.3 | 347.2 | 360.6 | 374.3  | 385.2  | 389.2  | 400.4  | 408.7 | 421.2 | 432.0 |
| 17.5° | 353.2 | 355.5 | 364.4 | 378.8 | 397.6  | 410.3  | 413.8  | 425.5  | 431.8 | 440.2 | 451.6 |
| 20°   | 373.3 | 377.6 | 388.5 | 405.9 | 426.5  | 438.6  | 441.2  | 452.6  | 452.1 | 455.6 | 465.5 |
| 22.5° | 398.1 | 401.1 | 413.0 | 433.8 | 456.9  | 470.3  | 476.1  | 481.0  | 474.6 | 471.6 | 477.9 |
| 25°   | 423.9 | 427.5 | 440.4 | 463.2 | 489.1  | 504.5  | 509.3  | 513.1  | 503.0 | 491.6 | 492.4 |
| 27.5° | 457.4 | 459.9 | 472.6 | 496.9 | 522.8  | 540.2  | 544.6  | 551.1  | 537.7 | 519.5 | 514.4 |
| 30°   | 497.2 | 499.7 | 513.1 | 538.7 | 564.3  | 579.3  | 585.9  | 594.0  | 579.3 | 556.5 | 550.6 |
| 32.5° | 543.8 | 546.3 | 563.6 | 589.9 | 610.9  | 627.2  | 633.5  | 642.1  | 630.5 | 604.9 | 598.3 |
| 35°   | 599.5 | 601.1 | 621.3 | 650.0 | 672.3  | 688.0  | 692.3  | 702.4  | 689.5 | 663.9 | 660.4 |
| 37.5° | 664.2 | 665.9 | 688.0 | 721.2 | 744.0  | 761.5  | 768.3  | 771.1  | 755.4 | 726.8 | 724.0 |
| 40°   | 735.1 | 740.9 | 762.5 | 798.2 | 823.8  | 845.9  | 851.9  | 842.6  | 820.5 | 781.5 | 776.4 |
| 42.5° | 809.1 | 814.2 | 838.2 | 877.0 | 906.7  | 929.2  | 929.5  | 909.2  | 871.7 | 817.7 | 810.1 |
| 45°   | 870.7 | 872.7 | 903.9 | 942.9 | 979.4  | 995.4  | 996.9  | 960.1  | 903.6 | 838.8 | 822.5 |
| 47.5° | 913.0 | 916.3 | 943.4 | 980.9 | 1021.2 | 1035.6 | 1032.6 | 986.7  | 918.8 | 852.4 | 825.6 |
| 50°   | 913.5 | 919.1 | 948.5 | 984.7 | 1023.7 | 1041.2 | 1036.9 | 994.3  | 927.4 | 852.9 | 818.2 |
| 52.5° | 832.7 | 841.8 | 889.7 | 942.1 | 1001.9 | 1031.8 | 1032.9 | 1004.2 | 924.2 | 844.8 | 811.6 |
| 55°   | 628.2 | 638.1 | 698.4 | 787.8 | 903.4  | 986.7  | 1001.2 | 992.6  | 920.3 | 848.4 | 823.3 |
| 57.5° | 332.5 | 324.9 | 358.3 | 447.0 | 592.2  | 739.7  | 782.0  | 850.9  | 878.0 | 852.7 | 844.8 |
| 60°   | 72.5  | 77.3  | 102.9 | 138.6 | 231.1  | 347.9  | 389.2  | 507.3  | 647.7 | 710.0 | 755.1 |
| 62.5° | 31.2  | 30.7  | 31.9  | 36.2  | 53.0   | 88.2   | 107.7  | 175.9  | 277.5 | 381.1 | 451.3 |
| 65°   | 25.6  | 25.8  | 26.9  | 26.9  | 25.1   | 25.3   | 26.6   | 40.3   | 64.9  | 91.0  | 122.1 |
| 67.5° | 19.3  | 19.5  | 21.3  | 21.8  | 20.5   | 18.2   | 18.0   | 15.2   | 16.0  | 20.0  | 20.8  |
| 70°   | 12.2  | 12.2  | 13.2  | 13.7  | 13.7   | 12.7   | 12.4   | 10.9   | 10.6  | 12.2  | 13.7  |
| 72.5° | 6.6   | 6.6   | 7.1   | 7.3   | 7.1    | 6.8    | 6.8    | 6.6    | 6.3   | 7.3   | 9.4   |
| 75°   | 2.8   | 2.8   | 3.0   | 3.0   | 2.8    | 2.8    | 2.8    | 2.8    | 2.8   | 3.3   | 5.1   |
| 77.5° | 0.5   | 0.8   | 1.0   | 0.8   | 0.5    | 0.5    | 0.5    | 0.8    | 0.8   | 1.0   | 1.5   |
| 80°   | 0.3   | 0.3   | 0.5   | 0.3   | 0.0    | 0.0    | 0.0    | 0.0    | 0.3   | 0.3   | 0.3   |
| 82.5° | 0.3   | 0.3   | 0.3   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.3   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   |



REPORT NUMBER: P629283

CATALOG NUMBER: GWS-SA1B-735-U-RW-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°   | 145°   | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|
| 0°    | 325.9 | 325.9 | 325.9 | 325.9 | 325.9 | 325.9  | 325.9  | 325.9 | 325.9 | 325.9 | 325.9 |
| 2.5°  | 331.4 | 328.7 | 329.7 | 330.2 | 329.4 | 328.9  | 326.1  | 325.4 | 324.1 | 322.1 | 321.6 |
| 5°    | 342.6 | 340.3 | 340.1 | 338.5 | 335.0 | 330.7  | 325.4  | 323.1 | 320.6 | 318.0 | 317.5 |
| 7.5°  | 361.3 | 358.6 | 356.8 | 351.7 | 343.6 | 336.8  | 327.9  | 323.1 | 319.8 | 316.5 | 315.7 |
| 10°   | 385.4 | 382.1 | 377.1 | 367.7 | 356.8 | 346.9  | 336.5  | 330.2 | 325.1 | 320.6 | 320.3 |
| 12.5° | 411.0 | 407.5 | 398.3 | 386.4 | 373.3 | 364.1  | 351.0  | 342.1 | 334.5 | 327.6 | 326.9 |
| 15°   | 437.9 | 433.6 | 421.2 | 407.0 | 394.8 | 385.4  | 371.0  | 356.8 | 345.1 | 335.2 | 334.2 |
| 17.5° | 458.4 | 453.1 | 438.4 | 427.7 | 417.9 | 408.2  | 392.0  | 373.3 | 357.8 | 345.9 | 343.1 |
| 20°   | 471.3 | 466.3 | 452.3 | 446.5 | 441.9 | 435.1  | 415.8  | 396.3 | 379.1 | 364.4 | 361.9 |
| 22.5° | 483.7 | 477.7 | 465.5 | 465.5 | 469.0 | 466.3  | 445.5  | 423.2 | 402.9 | 385.9 | 382.1 |
| 25°   | 497.7 | 492.9 | 484.2 | 491.3 | 500.2 | 500.0  | 478.7  | 450.8 | 427.5 | 408.5 | 404.7 |
| 27.5° | 518.0 | 513.1 | 510.1 | 523.5 | 534.7 | 533.9  | 510.6  | 480.4 | 455.9 | 437.1 | 433.6 |
| 30°   | 553.7 | 549.1 | 545.8 | 562.0 | 576.2 | 570.9  | 545.3  | 516.2 | 491.3 | 470.1 | 467.5 |
| 32.5° | 601.3 | 596.5 | 592.2 | 608.4 | 621.1 | 614.2  | 589.9  | 562.5 | 533.9 | 513.1 | 508.1 |
| 35°   | 663.9 | 653.8 | 649.5 | 668.7 | 674.0 | 666.4  | 643.1  | 619.1 | 588.6 | 564.8 | 561.5 |
| 37.5° | 728.5 | 716.6 | 713.6 | 730.3 | 738.9 | 736.1  | 708.8  | 683.7 | 650.7 | 624.4 | 620.6 |
| 40°   | 783.8 | 772.9 | 767.5 | 793.6 | 813.2 | 814.9  | 790.4  | 759.7 | 720.9 | 693.6 | 686.7 |
| 42.5° | 816.2 | 806.8 | 805.6 | 846.1 | 878.0 | 900.8  | 871.4  | 839.8 | 799.0 | 768.1 | 762.5 |
| 45°   | 823.6 | 817.5 | 828.1 | 881.3 | 931.0 | 972.6  | 947.5  | 914.0 | 869.9 | 837.2 | 831.9 |
| 47.5° | 822.8 | 820.8 | 839.8 | 899.6 | 962.4 | 1013.6 | 1001.2 | 963.4 | 920.9 | 886.6 | 881.6 |
| 50°   | 811.9 | 812.1 | 843.8 | 908.7 | 975.1 | 1024.8 | 1012.3 | 977.4 | 939.4 | 905.7 | 901.6 |
| 52.5° | 807.6 | 806.1 | 836.2 | 905.9 | 988.0 | 1019.7 | 991.8  | 952.5 | 910.2 | 868.7 | 862.6 |
| 55°   | 822.8 | 819.0 | 837.2 | 903.6 | 989.5 | 1016.9 | 943.4  | 858.3 | 771.6 | 722.4 | 718.4 |
| 57.5° | 845.6 | 841.5 | 850.2 | 886.9 | 910.2 | 845.6  | 694.3  | 557.0 | 467.8 | 430.0 | 413.5 |
| 60°   | 755.1 | 752.3 | 745.8 | 701.4 | 601.6 | 453.8  | 309.1  | 197.1 | 141.7 | 114.5 | 114.5 |
| 62.5° | 468.5 | 464.7 | 429.0 | 318.8 | 231.6 | 134.0  | 73.7   | 46.1  | 35.0  | 32.7  | 32.4  |
| 65°   | 131.5 | 130.8 | 108.2 | 76.5  | 48.7  | 30.2   | 26.6   | 27.1  | 26.6  | 25.8  | 25.6  |
| 67.5° | 19.8  | 21.8  | 21.8  | 17.7  | 17.0  | 19.0   | 22.3   | 23.8  | 22.6  | 21.3  | 20.8  |
| 70°   | 12.7  | 13.7  | 13.2  | 11.4  | 12.2  | 14.2   | 16.0   | 16.2  | 15.5  | 14.2  | 13.9  |
| 72.5° | 8.9   | 9.9   | 8.1   | 7.3   | 7.6   | 8.4    | 9.1    | 9.1   | 8.9   | 8.4   | 7.9   |
| 75°   | 5.3   | 5.3   | 3.8   | 3.5   | 3.5   | 3.8    | 3.8    | 4.3   | 4.3   | 4.1   | 3.8   |
| 77.5° | 1.8   | 2.0   | 1.3   | 1.0   | 1.0   | 1.0    | 1.3    | 1.5   | 1.5   | 1.3   | 1.0   |
| 80°   | 0.3   | 0.5   | 0.3   | 0.3   | 0.3   | 0.3    | 0.3    | 0.3   | 0.5   | 0.5   | 0.3   |
| 82.5° | 0.3   | 0.3   | 0.3   | 0.0   | 0.0   | 0.0    | 0.0    | 0.3   | 0.3   | 0.3   | 0.3   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.3   | 0.3   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   |



LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

**Test Information**

Test Method: LM-79-08  
 Report Number: SP1-2101-121-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry: 4π  
 Issue Date: 03/04/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-735-U-T2**  
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

**Spectral Parameters**

CCT (K): 3388  
 CIE u': 0.2371  
 CIE v': 0.5177  
 Duv: 0.0032  
 CIE x: 0.4153  
 CIE y: 0.4030  
 CIE z: 0.1817  
 Peak Wavelength (nm): 590  
 Dominant Wavelength (nm): 580  
 Purity: 45.7  
 Rf: 76.9  
 Rg: 94.4

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 |      |       |
| R1:       | 68.9 | R9:  | -34.6 |
| R2:       | 81.1 | R10: | 57.8  |
| R3:       | 93.1 | R11: | 68.6  |
| R4:       | 71.6 | R12: | 53.9  |
| R5:       | 69.4 | R13: | 70.9  |
| R6:       | 75.0 | R14: | 96.2  |
| R7:       | 79.5 |      |       |
| R8:       | 46.4 |      |       |

**Test Conditions**

Stabilization Time: 81M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0/30%  
 Sphere Temperature (°C): 24.1

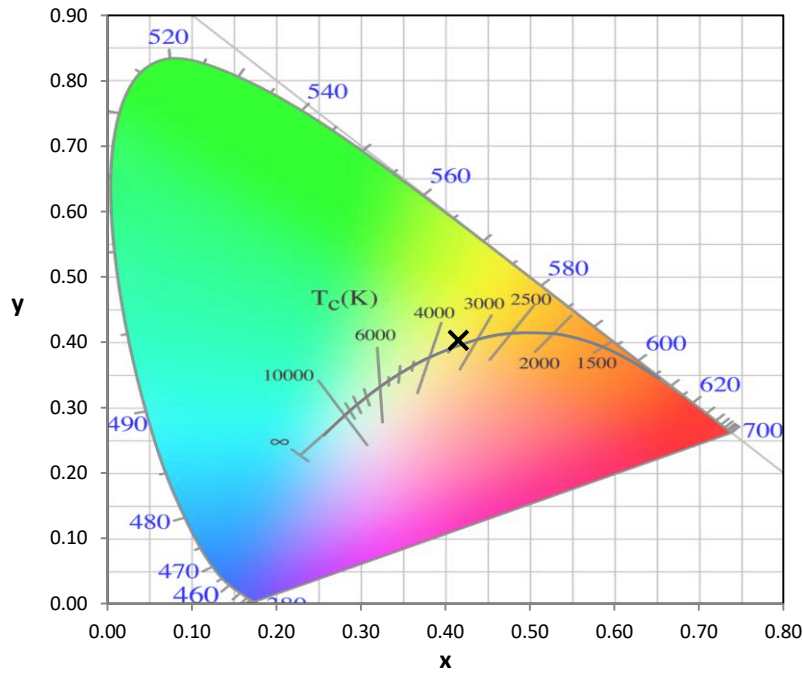


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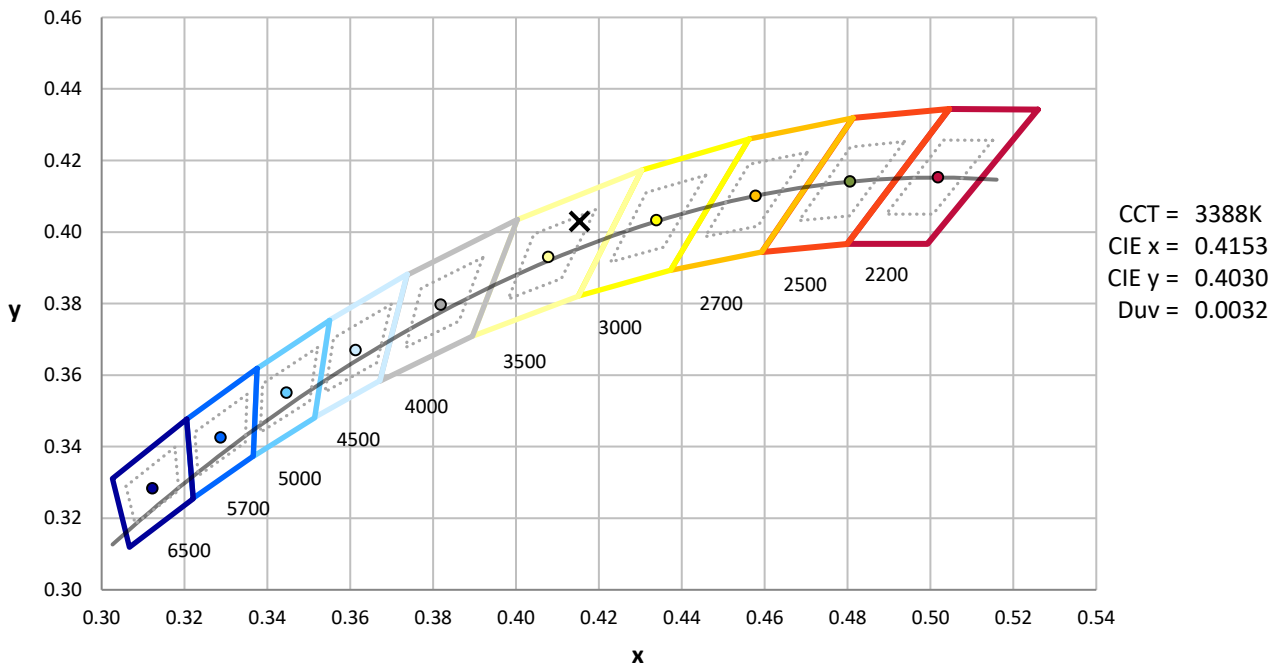
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 1/31/2021        | 7/31/2021            |
| Power Meter                    | IN0071                | 12/1/2020        | 12/1/2021            |
| AC Power Source                | IN0063                | 12/1/2020        | 12/1/2021            |
| DC Power Source                | IN0208                | 12/1/2020        | 12/1/2021            |
| Sphere Thermometer             | IN0085                | 12/1/2020        | 12/1/2021            |
| Room Thermometer               | IN0046                | 12/1/2020        | 12/1/2021            |

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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 3500K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2672          | 0.0           | 490    | 34553         | 4.9           | 620    | 136720        | 35.6          | 750    | 5870          | 0.0           | 880    | 4216          | 0.0           |
| 365    | 2252          | 0.0           | 495    | 44336         | 8.0           | 625    | 126308        | 27.9          | 755    | 5421          | 0.0           | 885    | 4132          | 0.0           |
| 370    | 2217          | 0.0           | 500    | 54643         | 12.1          | 630    | 114625        | 20.7          | 760    | 5097          | 0.0           | 890    | 3992          | 0.0           |
| 375    | 2697          | 0.0           | 505    | 64676         | 18.1          | 635    | 103216        | 15.5          | 765    | 4626          | 0.0           | 895    | 3214          | 0.0           |
| 380    | 3039          | 0.0           | 510    | 73825         | 25.4          | 640    | 92605         | 11.1          | 770    | 3782          | 0.0           | 900    | 2580          | 0.0           |
| 385    | 2655          | 0.0           | 515    | 81872         | 33.9          | 645    | 83234         | 8.0           | 775    | 3506          | 0.0           | 905    | 1776          | 0.0           |
| 390    | 2357          | 0.0           | 520    | 88574         | 43.0          | 650    | 73263         | 5.4           | 780    | 3507          | 0.0           | 910    | 3995          | 0.0           |
| 395    | 2186          | 0.0           | 525    | 93289         | 50.1          | 655    | 64627         | 3.7           | 785    | 3267          | 0.0           | 915    | 4288          | 0.0           |
| 400    | 2015          | 0.0           | 530    | 98393         | 57.9          | 660    | 56614         | 2.4           | 790    | 2849          | 0.0           | 920    | 2446          | 0.0           |
| 405    | 2234          | 0.0           | 535    | 103269        | 64.0          | 665    | 49537         | 1.6           | 795    | 3037          | 0.0           | 925    | 3009          | 0.0           |
| 410    | 3412          | 0.0           | 540    | 107316        | 69.9          | 670    | 42866         | 0.9           | 800    | 2716          | 0.0           | 930    | 3026          | 0.0           |
| 415    | 6135          | 0.0           | 545    | 113101        | 75.3          | 675    | 36708         | 0.6           | 805    | 2648          | 0.0           | 935    | 4734          | 0.0           |
| 420    | 12146         | 0.0           | 550    | 120690        | 82.0          | 680    | 31814         | 0.4           | 810    | 3187          | 0.0           | 940    | 3719          | 0.0           |
| 425    | 23983         | 0.1           | 555    | 128583        | 87.8          | 685    | 27485         | 0.2           | 815    | 2931          | 0.0           | 945    | 1480          | 0.0           |
| 430    | 42142         | 0.3           | 560    | 137796        | 93.6          | 690    | 23698         | 0.1           | 820    | 2717          | 0.0           | 950    | 3450          | 0.0           |
| 435    | 68228         | 0.8           | 565    | 146577        | 97.5          | 695    | 20309         | 0.1           | 825    | 2236          | 0.0           | 955    | 5051          | 0.0           |
| 440    | 99323         | 1.6           | 570    | 154581        | 100.5         | 700    | 17890         | 0.1           | 830    | 2628          | 0.0           | 960    | 3176          | 0.0           |
| 445    | 115584        | 2.4           | 575    | 162633        | 101.2         | 705    | 15500         | 0.0           | 835    | 3140          | 0.0           | 965    | 5178          | 0.0           |
| 450    | 94997         | 2.5           | 580    | 168101        | 99.9          | 710    | 13699         | 0.0           | 840    | 3675          | 0.0           | 970    | 6385          | 0.0           |
| 455    | 61433         | 2.1           | 585    | 173145        | 96.2          | 715    | 12398         | 0.0           | 845    | 3283          | 0.0           | 975    | 3810          | 0.0           |
| 460    | 43373         | 1.8           | 590    | 174675        | 90.3          | 720    | 11147         | 0.0           | 850    | 3055          | 0.0           | 980    | 4322          | 0.0           |
| 465    | 32472         | 1.7           | 595    | 173724        | 82.3          | 725    | 9761          | 0.0           | 855    | 2932          | 0.0           | 985    | 4200          | 0.0           |
| 470    | 24257         | 1.5           | 600    | 171241        | 73.8          | 730    | 8651          | 0.0           | 860    | 3382          | 0.0           | 990    | 4661          | 0.0           |
| 475    | 21690         | 1.7           | 605    | 165134        | 64.0          | 735    | 7730          | 0.0           | 865    | 2605          | 0.0           | 995    | 6746          | 0.0           |
| 480    | 23173         | 2.2           | 610    | 156652        | 53.8          | 740    | 6847          | 0.0           | 870    | 3325          | 0.0           | 1000   | 4150          | 0.0           |
| 485    | 27564         | 3.3           | 615    | 147879        | 44.6          | 745    | 6124          | 0.0           | 875    | 3325          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-7

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: 12126**

**S/P: 1.36**

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 2672                                 | 0.0                            | 490               | 34553                                | 53.2                           | 620               | 136720                               | 1.7                            | 750               | 5870                                 | 0.0                            | 880               | 4216                                 | 0.0                            |
| 365               | 2252                                 | 0.0                            | 495               | 44336                                | 71.7                           | 625               | 126308                               | 1.1                            | 755               | 5421                                 | 0.0                            | 885               | 4132                                 | 0.0                            |
| 370               | 2217                                 | 0.0                            | 500               | 54643                                | 91.4                           | 630               | 114625                               | 0.6                            | 760               | 5097                                 | 0.0                            | 890               | 3992                                 | 0.0                            |
| 375               | 2697                                 | 0.0                            | 505               | 64676                                | 110.0                          | 635               | 103216                               | 0.4                            | 765               | 4626                                 | 0.0                            | 895               | 3214                                 | 0.0                            |
| 380               | 3039                                 | 0.0                            | 510               | 73825                                | 125.1                          | 640               | 92605                                | 0.2                            | 770               | 3782                                 | 0.0                            | 900               | 2580                                 | 0.0                            |
| 385               | 2655                                 | 0.0                            | 515               | 81872                                | 135.7                          | 645               | 83234                                | 0.1                            | 775               | 3506                                 | 0.0                            | 905               | 1776                                 | 0.0                            |
| 390               | 2357                                 | 0.0                            | 520               | 88574                                | 140.8                          | 650               | 73263                                | 0.1                            | 780               | 3507                                 | 0.0                            | 910               | 3995                                 | 0.0                            |
| 395               | 2186                                 | 0.0                            | 525               | 93289                                | 139.6                          | 655               | 64627                                | 0.1                            | 785               | 3267                                 | 0.0                            | 915               | 4288                                 | 0.0                            |
| 400               | 2015                                 | 0.0                            | 530               | 98393                                | 135.7                          | 660               | 56614                                | 0.0                            | 790               | 2849                                 | 0.0                            | 920               | 2446                                 | 0.0                            |
| 405               | 2234                                 | 0.1                            | 535               | 103269                               | 128.7                          | 665               | 49537                                | 0.0                            | 795               | 3037                                 | 0.0                            | 925               | 3009                                 | 0.0                            |
| 410               | 3412                                 | 0.2                            | 540               | 107316                               | 118.6                          | 670               | 42866                                | 0.0                            | 800               | 2716                                 | 0.0                            | 930               | 3026                                 | 0.0                            |
| 415               | 6135                                 | 0.6                            | 545               | 113101                               | 108.4                          | 675               | 36708                                | 0.0                            | 805               | 2648                                 | 0.0                            | 935               | 4734                                 | 0.0                            |
| 420               | 12146                                | 2.0                            | 550               | 120690                               | 98.7                           | 680               | 31814                                | 0.0                            | 810               | 3187                                 | 0.0                            | 940               | 3719                                 | 0.0                            |
| 425               | 23983                                | 5.9                            | 555               | 128583                               | 87.9                           | 685               | 27485                                | 0.0                            | 815               | 2931                                 | 0.0                            | 945               | 1480                                 | 0.0                            |
| 430               | 42142                                | 14.3                           | 560               | 137796                               | 77.0                           | 690               | 23698                                | 0.0                            | 820               | 2717                                 | 0.0                            | 950               | 3450                                 | 0.0                            |
| 435               | 68228                                | 30.5                           | 565               | 146577                               | 65.8                           | 695               | 20309                                | 0.0                            | 825               | 2236                                 | 0.0                            | 955               | 5051                                 | 0.0                            |
| 440               | 99323                                | 55.5                           | 570               | 154581                               | 54.6                           | 700               | 17890                                | 0.0                            | 830               | 2628                                 | 0.0                            | 960               | 3176                                 | 0.0                            |
| 445               | 115584                               | 77.4                           | 575               | 162633                               | 44.3                           | 705               | 15500                                | 0.0                            | 835               | 3140                                 | 0.0                            | 965               | 5178                                 | 0.0                            |
| 450               | 94997                                | 73.6                           | 580               | 168101                               | 34.6                           | 710               | 13699                                | 0.0                            | 840               | 3675                                 | 0.0                            | 970               | 6385                                 | 0.0                            |
| 455               | 61433                                | 53.7                           | 585               | 173145                               | 26.5                           | 715               | 12398                                | 0.0                            | 845               | 3283                                 | 0.0                            | 975               | 3810                                 | 0.0                            |
| 460               | 43373                                | 41.9                           | 590               | 174675                               | 19.5                           | 720               | 11147                                | 0.0                            | 850               | 3055                                 | 0.0                            | 980               | 4322                                 | 0.0                            |
| 465               | 32472                                | 34.3                           | 595               | 173724                               | 13.9                           | 725               | 9761                                 | 0.0                            | 855               | 2932                                 | 0.0                            | 985               | 4200                                 | 0.0                            |
| 470               | 24257                                | 27.9                           | 600               | 171241                               | 9.7                            | 730               | 8651                                 | 0.0                            | 860               | 3382                                 | 0.0                            | 990               | 4661                                 | 0.0                            |
| 475               | 21690                                | 27.1                           | 605               | 165134                               | 6.5                            | 735               | 7730                                 | 0.0                            | 865               | 2605                                 | 0.0                            | 995               | 6746                                 | 0.0                            |
| 480               | 23173                                | 31.3                           | 610               | 156652                               | 4.2                            | 740               | 6847                                 | 0.0                            | 870               | 3325                                 | 0.0                            | 1000              | 4150                                 | 0.0                            |
| 485               | 27564                                | 40.0                           | 615               | 147879                               | 2.7                            | 745               | 6124                                 | 0.0                            | 875               | 3325                                 | 0.0                            |                   |                                      |                                |

REPORT NUMBER: SP1-2101-121-7

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 4490.7 M/P: 0.5**

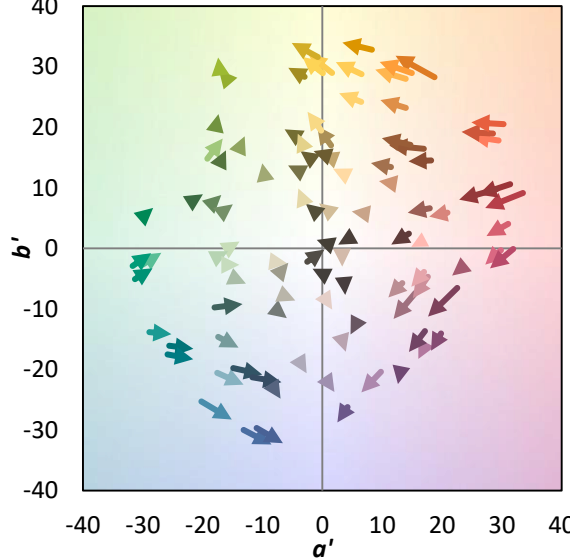
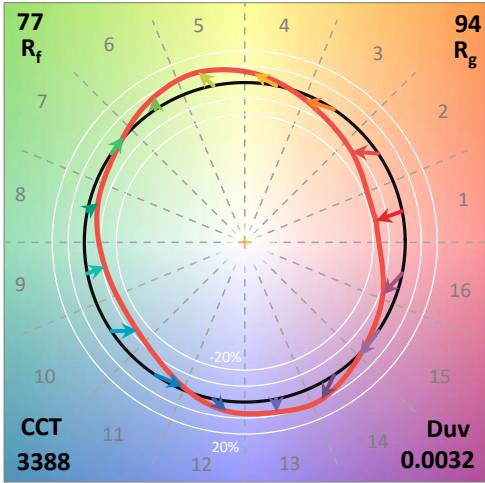
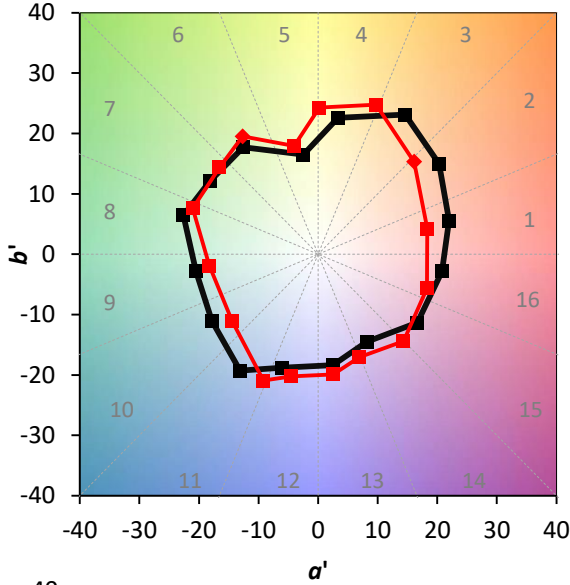
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2672          | 0.0           | 490    | 34553         | 28.8          | 620    | 136720        | 0.1           | 750    | 5870          | 0.0           | 880    | 4216          | 0.0           |
| 365    | 2252          | 0.0           | 495    | 44336         | 36.6          | 625    | 126308        | 0.1           | 755    | 5421          | 0.0           | 885    | 4132          | 0.0           |
| 370    | 2217          | 0.0           | 500    | 54643         | 43.9          | 630    | 114625        | 0.0           | 760    | 5097          | 0.0           | 890    | 3992          | 0.0           |
| 375    | 2697          | 0.0           | 505    | 64676         | 49.6          | 635    | 103216        | 0.0           | 765    | 4626          | 0.0           | 895    | 3214          | 0.0           |
| 380    | 3039          | 0.0           | 510    | 73825         | 53.0          | 640    | 92605         | 0.0           | 770    | 3782          | 0.0           | 900    | 2580          | 0.0           |
| 385    | 2655          | 0.0           | 515    | 81872         | 53.5          | 645    | 83234         | 0.0           | 775    | 3506          | 0.0           | 905    | 1776          | 0.0           |
| 390    | 2357          | 0.0           | 520    | 88574         | 51.6          | 650    | 73263         | 0.0           | 780    | 3507          | 0.0           | 910    | 3995          | 0.0           |
| 395    | 2186          | 0.0           | 525    | 93289         | 47.3          | 655    | 64627         | 0.0           | 785    | 3267          | 0.0           | 915    | 4288          | 0.0           |
| 400    | 2015          | 0.0           | 530    | 98393         | 42.5          | 660    | 56614         | 0.0           | 790    | 2849          | 0.0           | 920    | 2446          | 0.0           |
| 405    | 2234          | 0.0           | 535    | 103269        | 37.2          | 665    | 49537         | 0.0           | 795    | 3037          | 0.0           | 925    | 3009          | 0.0           |
| 410    | 3412          | 0.1           | 540    | 107316        | 31.4          | 670    | 42866         | 0.0           | 800    | 2716          | 0.0           | 930    | 3026          | 0.0           |
| 415    | 6135          | 0.4           | 545    | 113101        | 26.3          | 675    | 36708         | 0.0           | 805    | 2648          | 0.0           | 935    | 4734          | 0.0           |
| 420    | 12146         | 1.4           | 550    | 120690        | 21.7          | 680    | 31814         | 0.0           | 810    | 3187          | 0.0           | 940    | 3719          | 0.0           |
| 425    | 23983         | 3.7           | 555    | 128583        | 17.3          | 685    | 27485         | 0.0           | 815    | 2931          | 0.0           | 945    | 1480          | 0.0           |
| 430    | 42142         | 8.9           | 560    | 137796        | 13.6          | 690    | 23698         | 0.0           | 820    | 2717          | 0.0           | 950    | 3450          | 0.0           |
| 435    | 68228         | 18.2          | 565    | 146577        | 10.3          | 695    | 20309         | 0.0           | 825    | 2236          | 0.0           | 955    | 5051          | 0.0           |
| 440    | 99323         | 33.2          | 570    | 154581        | 7.6           | 700    | 17890         | 0.0           | 830    | 2628          | 0.0           | 960    | 3176          | 0.0           |
| 445    | 115584        | 45.6          | 575    | 162633        | 5.4           | 705    | 15500         | 0.0           | 835    | 3140          | 0.0           | 965    | 5178          | 0.0           |
| 450    | 94997         | 43.8          | 580    | 168101        | 3.8           | 710    | 13699         | 0.0           | 840    | 3675          | 0.0           | 970    | 6385          | 0.0           |
| 455    | 61433         | 32.2          | 585    | 173145        | 2.6           | 715    | 12398         | 0.0           | 845    | 3283          | 0.0           | 975    | 3810          | 0.0           |
| 460    | 43373         | 25.6          | 590    | 174675        | 1.7           | 720    | 11147         | 0.0           | 850    | 3055          | 0.0           | 980    | 4322          | 0.0           |
| 465    | 32472         | 21.2          | 595    | 173724        | 1.1           | 725    | 9761          | 0.0           | 855    | 2932          | 0.0           | 985    | 4200          | 0.0           |
| 470    | 24257         | 17.4          | 600    | 171241        | 0.7           | 730    | 8651          | 0.0           | 860    | 3382          | 0.0           | 990    | 4661          | 0.0           |
| 475    | 21690         | 16.6          | 605    | 165134        | 0.5           | 735    | 7730          | 0.0           | 865    | 2605          | 0.0           | 995    | 6746          | 0.0           |
| 480    | 23173         | 18.6          | 610    | 156652        | 0.3           | 740    | 6847          | 0.0           | 870    | 3325          | 0.0           | 1000   | 4150          | 0.0           |
| 485    | 27564         | 22.7          | 615    | 147879        | 0.2           | 745    | 6124          | 0.0           | 875    | 3325          | 0.0           |        |               |               |

**Summary**

$R_f = 76.9$   
 $R_g = 94.4$   
 $CIE R_a = 73.1$   
 $R_g = -34.6$



**Color Vector Graphics**





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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)