

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: P438198

Luminaire Tested: **ISW-SA1B-740-U-SL2-HSS**

Issue Date: 12/10/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P438198  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/10/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: ISW-SA1B-740-U-SL2-HSS  
Description: IMPACT ELITE LED WEDGE LUMINAIRE  
(1) 70 CRI, 4000K, 450mA LIGHTSQUARE WITH 16 LEDS AND TYPE II SPILL LIGHT  
ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

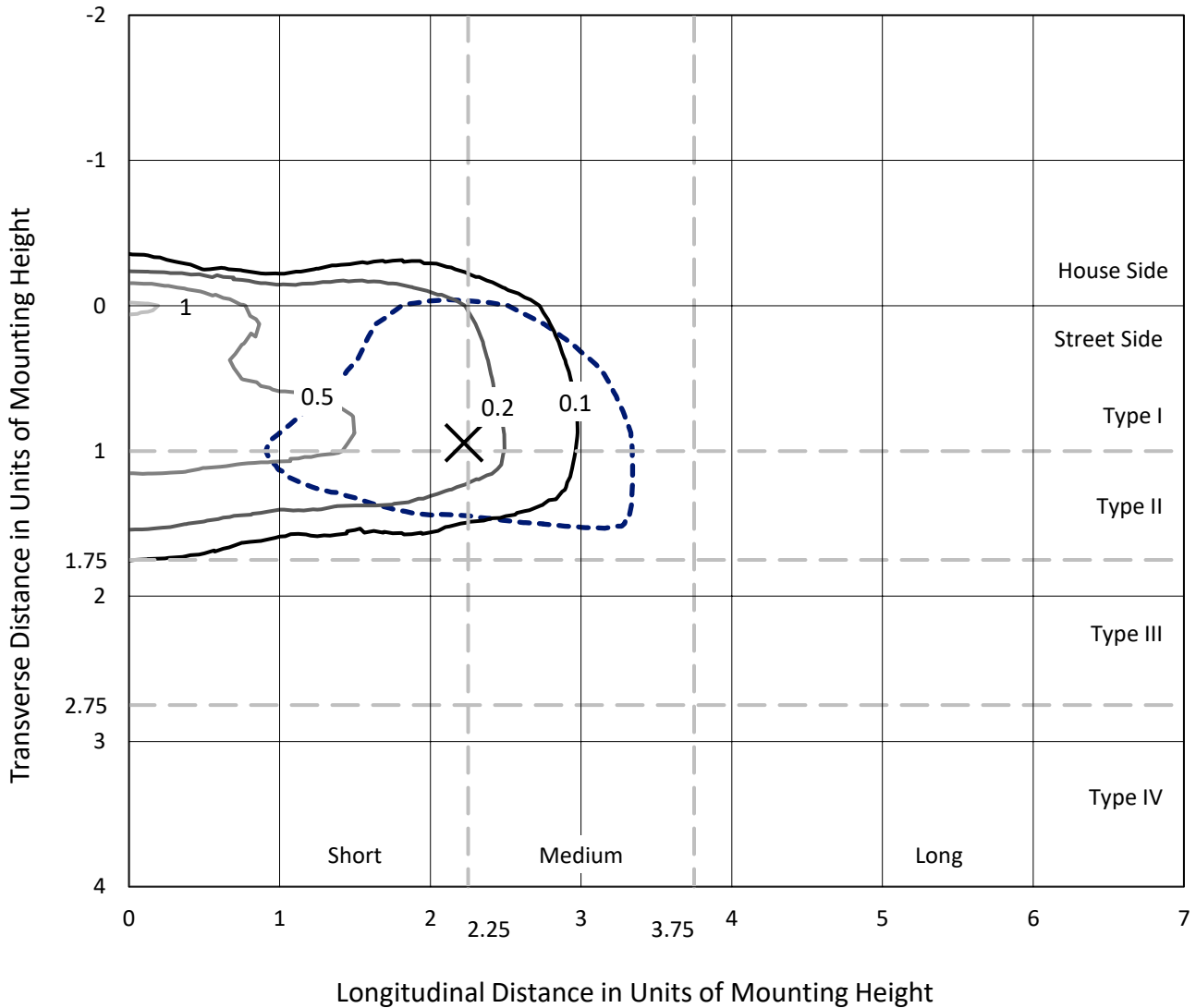
Lumens per Lamp: N/A  
Luminaire Lumens: 2772 lumens  
Efficiency: N/A  
Efficacy: 109.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G1  
  
Input Watts (W): 25.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
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



REPORT NUMBER: P438198  
 CATALOG NUMBER: ISW-SA1B-740-U-SL2-HSS

### Iso-Footcandle Lines of Horizontal Illumination

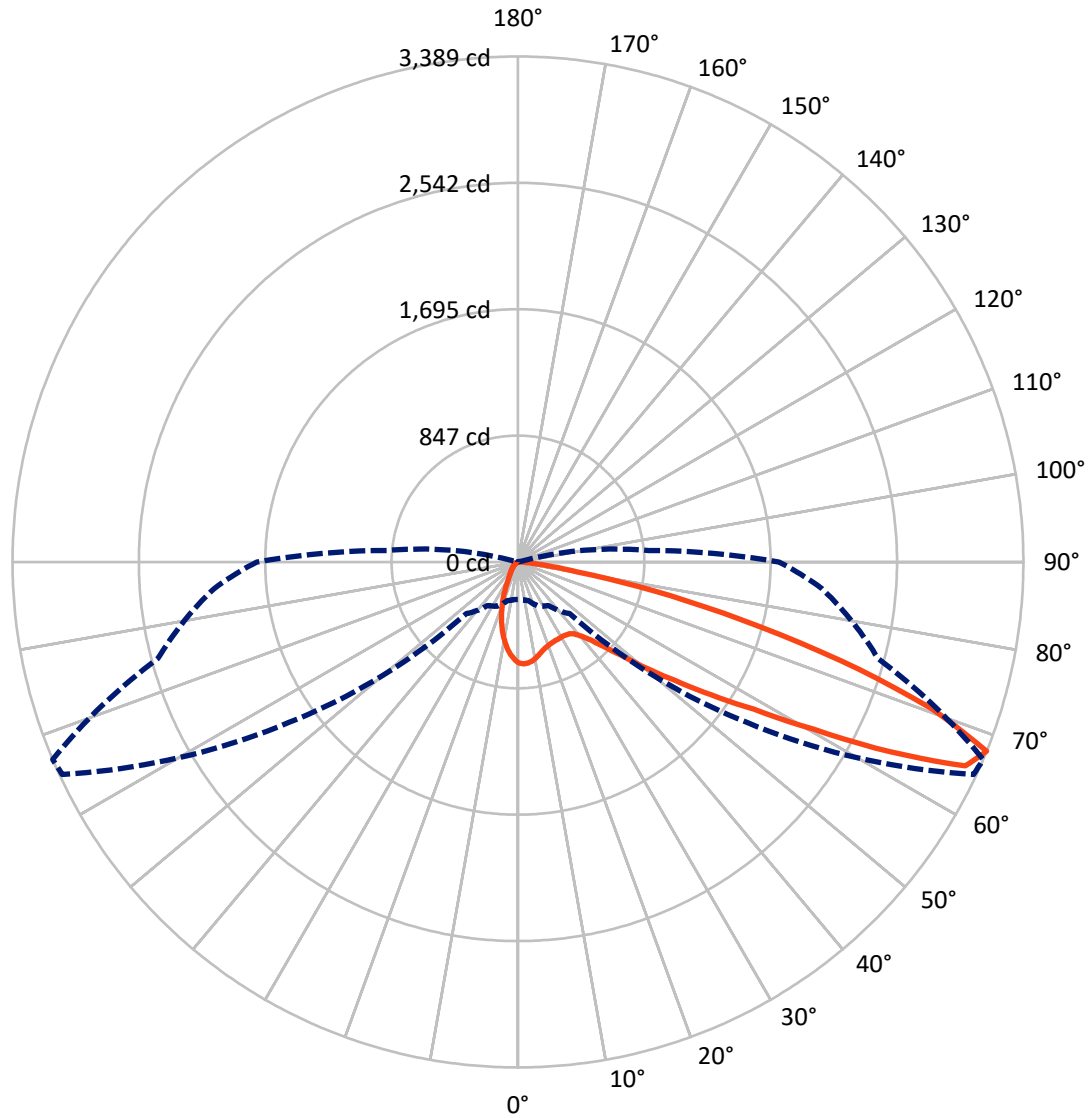
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc  
 Type II - Short - N/A

REPORT NUMBER: P438198  
CATALOG NUMBER: ISW-SA1B-740-U-SL2-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P438198

CATALOG NUMBER: ISW-SA1B-740-U-SL2-HSS

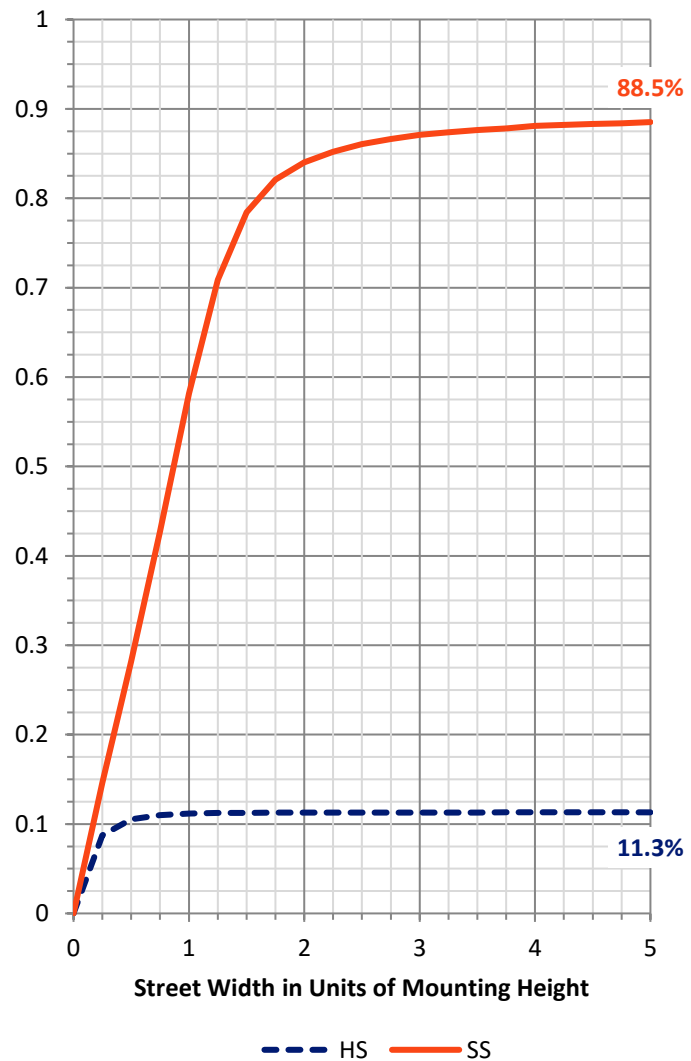
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 316.3    | 0.0    | 316.3  |
|                    | % Fixture | 11.4     | 0.0    | 11.4   |
| <b>Street Side</b> | Lumens    | 2455.7   | 0.0    | 2455.7 |
|                    | % Fixture | 88.6     | 0.0    | 88.6   |
| <b>Total</b>       | Lumens    | 2772.0   | 0.0    | 2772.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 55.1   | 2.0       |
| 10°-20°   | 119.5  | 4.3       |
| 20°-30°   | 171.2  | 6.2       |
| 30°-40°   | 251.9  | 9.1       |
| 40°-50°   | 416.1  | 15.0      |
| 50°-60°   | 669.4  | 24.1      |
| 60°-70°   | 729.9  | 26.3      |
| 70°-80°   | 332.2  | 12.0      |
| 80°-90°   | 26.7   | 1.0       |
| 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°    | 2772.0 | 100.0     |
| 0°-180°   | 2772.0 | 100.0     |

**Coefficient of Utilization**

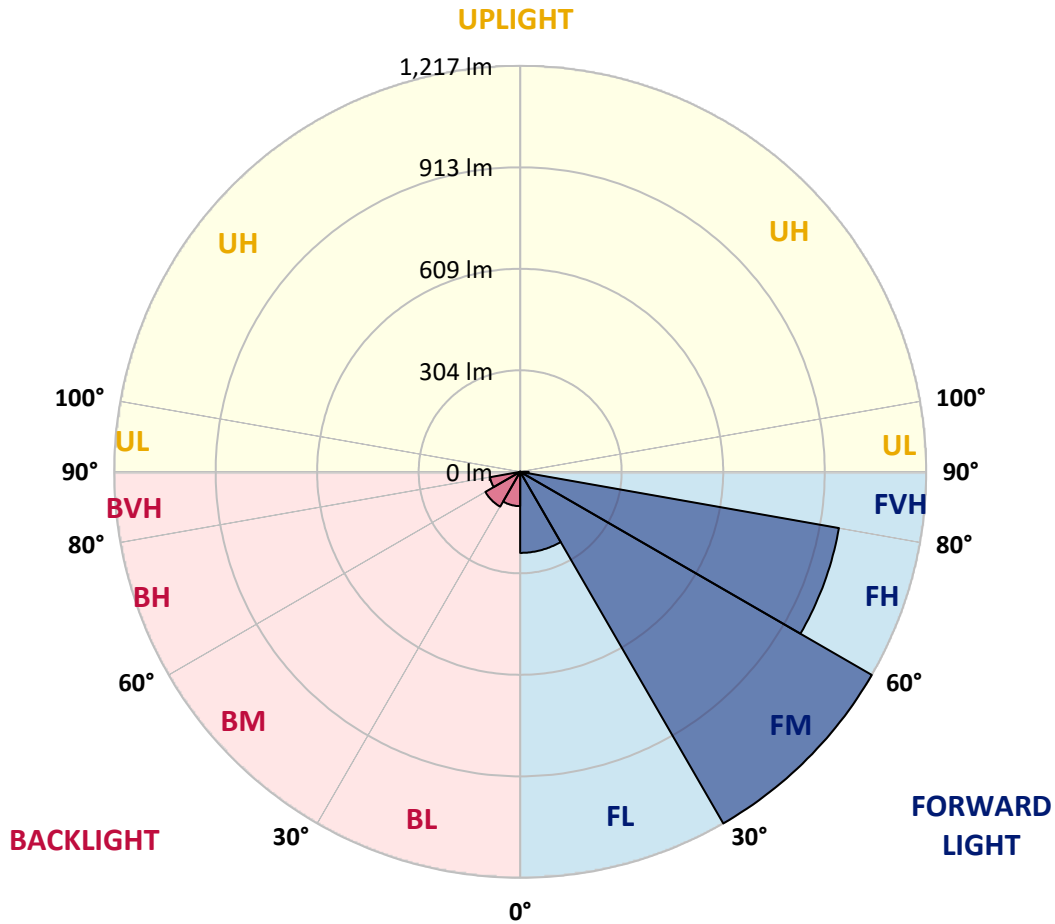


REPORT NUMBER: P438198  
 CATALOG NUMBER: ISW-SA1B-740-U-SL2-HSS

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 243.0  | 8.8       |                         |      |         |
| FM (30°-60°)   | 1217.0 | 43.9      |                         |      |         |
| FH (60°-80°)   | 970.2  | 35.0      |                         |      | G1/1800 |
| FVH (80°-90°)  | 25.4   | 0.9       |                         |      | G1/100  |
| BL (0°-30°)    | 102.8  | 3.7       | B0/110                  |      |         |
| BM (30°-60°)   | 120.4  | 4.3       | B0/220                  |      |         |
| BH (60°-80°)   | 91.8   | 3.3       | B0/110                  |      | G0/110  |
| BVH (80°-90°)  | 1.3    | 0.0       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G1**  
 Type II Short





REPORT NUMBER: P438198  
 CATALOG NUMBER: ISW-SA1B-740-U-SL2-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 67°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  | 676.4  |
| 2.5°  | 667.9  | 674.0  | 675.2  | 677.6  | 677.6  | 681.3  | 682.5  | 684.9  | 683.7  | 684.9  | 682.5  |
| 5°    | 621.6  | 626.5  | 624.1  | 636.2  | 643.5  | 656.9  | 670.3  | 681.3  | 681.3  | 684.9  | 683.7  |
| 7.5°  | 575.4  | 580.3  | 580.3  | 590.0  | 602.2  | 621.6  | 643.5  | 669.1  | 671.5  | 683.7  | 680.0  |
| 10°   | 538.9  | 541.4  | 543.8  | 554.7  | 569.3  | 588.8  | 618.0  | 650.8  | 655.7  | 676.4  | 677.6  |
| 12.5° | 509.7  | 513.4  | 517.0  | 528.0  | 541.4  | 560.8  | 588.8  | 626.5  | 635.0  | 664.2  | 675.2  |
| 15°   | 495.1  | 495.1  | 498.8  | 508.5  | 520.7  | 541.4  | 566.9  | 610.7  | 618.0  | 656.9  | 674.0  |
| 17.5° | 487.8  | 489.0  | 491.5  | 496.3  | 506.1  | 523.1  | 551.1  | 593.7  | 603.4  | 650.8  | 674.0  |
| 20°   | 497.6  | 497.6  | 493.9  | 496.3  | 501.2  | 514.6  | 540.1  | 581.5  | 593.7  | 647.2  | 680.0  |
| 22.5° | 518.2  | 518.2  | 512.2  | 508.5  | 504.9  | 509.7  | 532.8  | 576.6  | 587.6  | 647.2  | 683.7  |
| 25°   | 549.9  | 549.9  | 546.2  | 535.3  | 519.5  | 515.8  | 534.1  | 575.4  | 583.9  | 648.4  | 688.6  |
| 27.5° | 587.6  | 588.8  | 585.1  | 573.0  | 548.7  | 528.0  | 537.7  | 573.0  | 582.7  | 647.2  | 691.0  |
| 30°   | 637.5  | 642.3  | 637.5  | 620.4  | 591.2  | 552.3  | 546.2  | 571.8  | 581.5  | 644.8  | 692.2  |
| 32.5° | 687.3  | 691.0  | 695.9  | 684.9  | 643.5  | 590.0  | 564.5  | 576.6  | 585.1  | 646.0  | 689.8  |
| 35°   | 736.0  | 745.7  | 754.2  | 757.9  | 715.3  | 643.5  | 594.9  | 587.6  | 591.2  | 649.6  | 689.8  |
| 37.5° | 788.3  | 798.0  | 816.3  | 834.5  | 799.3  | 703.2  | 639.9  | 611.9  | 611.9  | 661.8  | 697.1  |
| 40°   | 855.2  | 860.1  | 895.4  | 917.3  | 900.2  | 799.3  | 704.4  | 653.3  | 652.1  | 695.9  | 717.8  |
| 42.5° | 919.7  | 933.1  | 979.3  | 1012.2 | 1001.2 | 912.4  | 782.2  | 726.3  | 714.1  | 750.6  | 755.5  |
| 45°   | 1013.4 | 1034.0 | 1070.5 | 1119.2 | 1130.2 | 1038.9 | 902.7  | 819.9  | 807.8  | 832.1  | 818.7  |
| 47.5° | 1101.0 | 1115.6 | 1150.8 | 1212.9 | 1276.1 | 1201.9 | 1038.9 | 951.3  | 940.4  | 950.1  | 928.2  |
| 50°   | 1128.9 | 1136.2 | 1176.4 | 1253.0 | 1402.7 | 1435.5 | 1226.3 | 1121.6 | 1120.4 | 1113.1 | 1076.6 |
| 52.5° | 1080.3 | 1081.5 | 1127.7 | 1221.4 | 1455.0 | 1691.0 | 1491.5 | 1341.8 | 1321.1 | 1305.3 | 1256.7 |
| 55°   | 931.9  | 942.8  | 981.7  | 1098.5 | 1403.9 | 1838.2 | 1916.0 | 1608.2 | 1574.2 | 1517.0 | 1456.2 |
| 57.5° | 728.7  | 723.8  | 755.5  | 862.5  | 1246.9 | 1896.6 | 2334.5 | 1946.4 | 1861.3 | 1689.8 | 1608.2 |
| 60°   | 530.4  | 518.2  | 538.9  | 599.7  | 906.3  | 1782.2 | 2576.6 | 2423.3 | 2277.3 | 1875.9 | 1795.6 |
| 62.5° | 394.2  | 394.2  | 416.1  | 444.0  | 556.0  | 1390.5 | 2614.3 | 2969.5 | 2805.3 | 2111.9 | 1993.9 |
| 65°   | 315.1  | 313.9  | 332.1  | 374.7  | 396.6  | 862.5  | 2424.5 | 3358.8 | 3296.8 | 2357.6 | 2124.1 |
| 67.5° | 251.8  | 251.8  | 267.6  | 326.0  | 356.4  | 490.3  | 1875.9 | 3371.0 | 3389.2 | 2498.7 | 2045.0 |
| 70°   | 177.6  | 183.7  | 203.2  | 272.5  | 344.3  | 374.7  | 1137.5 | 2895.3 | 2942.8 | 2456.2 | 1834.5 |
| 72.5° | 99.8   | 104.6  | 139.9  | 201.9  | 330.9  | 360.1  | 636.2  | 2187.3 | 2267.6 | 2058.4 | 1496.3 |
| 75°   | 47.4   | 52.3   | 81.5   | 138.7  | 276.2  | 343.1  | 386.9  | 1551.1 | 1540.1 | 1337.0 | 929.4  |
| 77.5° | 20.7   | 23.1   | 36.5   | 80.3   | 195.9  | 319.9  | 283.5  | 969.6  | 925.8  | 627.7  | 390.5  |
| 80°   | 7.3    | 8.5    | 15.8   | 46.2   | 110.7  | 261.6  | 236.0  | 447.7  | 405.1  | 174.0  | 102.2  |
| 82.5° | 1.2    | 1.2    | 6.1    | 21.9   | 49.9   | 146.0  | 194.6  | 214.1  | 184.9  | 43.8   | 43.8   |
| 85°   | 0.0    | 0.0    | 1.2    | 7.3    | 12.2   | 13.4   | 87.6   | 86.4   | 71.8   | 14.6   | 21.9   |
| 87.5° | 0.0    | 0.0    | 0.0    | 1.2    | 1.2    | 2.4    | 2.4    | 2.4    | 2.4    | 2.4    | 3.6    |
| 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: P438198  
 CATALOG NUMBER: ISW-SA1B-740-U-SL2-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 676.4  | 676.4  | 676.4 | 676.4 | 676.4 | 676.4 | 676.4 | 676.4 | 676.4 | 676.4 | 676.4 |
| 2.5°  | 676.4  | 675.2  | 663.0 | 652.1 | 637.5 | 625.3 | 614.3 | 603.4 | 598.5 | 599.7 | 602.2 |
| 5°    | 677.6  | 670.3  | 644.8 | 616.8 | 587.6 | 558.4 | 530.4 | 513.4 | 500.0 | 495.1 | 500.0 |
| 7.5°  | 671.5  | 659.4  | 620.4 | 575.4 | 529.2 | 478.1 | 435.5 | 403.9 | 380.8 | 366.2 | 372.3 |
| 10°   | 666.7  | 648.4  | 591.2 | 523.1 | 457.4 | 390.5 | 329.7 | 284.7 | 253.0 | 234.8 | 231.1 |
| 12.5° | 658.1  | 636.2  | 557.2 | 470.8 | 379.6 | 288.3 | 215.3 | 167.9 | 142.3 | 129.0 | 132.6 |
| 15°   | 655.7  | 621.6  | 523.1 | 410.0 | 296.8 | 194.6 | 130.2 | 103.4 | 92.5  | 90.0  | 90.0  |
| 17.5° | 653.3  | 611.9  | 486.6 | 350.4 | 212.9 | 121.7 | 90.0  | 82.7  | 80.3  | 79.1  | 80.3  |
| 20°   | 650.8  | 598.5  | 450.1 | 285.9 | 143.6 | 87.6  | 77.9  | 74.2  | 71.8  | 71.8  | 70.6  |
| 22.5° | 653.3  | 590.0  | 416.1 | 225.1 | 98.5  | 74.2  | 68.1  | 65.7  | 63.3  | 62.0  | 62.0  |
| 25°   | 650.8  | 579.1  | 374.7 | 165.4 | 76.6  | 65.7  | 60.8  | 56.0  | 53.5  | 52.3  | 51.1  |
| 27.5° | 647.2  | 565.7  | 335.8 | 119.2 | 66.9  | 58.4  | 52.3  | 47.4  | 43.8  | 42.6  | 42.6  |
| 30°   | 643.5  | 548.7  | 290.8 | 87.6  | 60.8  | 52.3  | 45.0  | 40.1  | 36.5  | 34.1  | 34.1  |
| 32.5° | 633.8  | 532.8  | 247.0 | 70.6  | 54.7  | 46.2  | 38.9  | 32.8  | 30.4  | 29.2  | 29.2  |
| 35°   | 627.7  | 514.6  | 200.7 | 60.8  | 49.9  | 40.1  | 32.8  | 28.0  | 25.5  | 24.3  | 24.3  |
| 37.5° | 626.5  | 495.1  | 159.4 | 54.7  | 45.0  | 35.3  | 28.0  | 24.3  | 21.9  | 20.7  | 20.7  |
| 40°   | 631.4  | 485.4  | 122.9 | 49.9  | 38.9  | 30.4  | 24.3  | 20.7  | 18.2  | 17.0  | 17.0  |
| 42.5° | 650.8  | 484.2  | 93.7  | 45.0  | 35.3  | 26.8  | 21.9  | 17.0  | 14.6  | 13.4  | 13.4  |
| 45°   | 694.6  | 491.5  | 74.2  | 41.4  | 30.4  | 23.1  | 18.2  | 14.6  | 12.2  | 10.9  | 10.9  |
| 47.5° | 766.4  | 521.9  | 62.0  | 37.7  | 25.5  | 19.5  | 14.6  | 12.2  | 8.5   | 8.5   | 8.5   |
| 50°   | 883.2  | 586.4  | 54.7  | 32.8  | 21.9  | 15.8  | 12.2  | 8.5   | 6.1   | 6.1   | 6.1   |
| 52.5° | 1055.9 | 684.9  | 49.9  | 29.2  | 18.2  | 13.4  | 9.7   | 6.1   | 4.9   | 4.9   | 4.9   |
| 55°   | 1234.8 | 807.8  | 46.2  | 24.3  | 15.8  | 10.9  | 7.3   | 4.9   | 3.6   | 3.6   | 2.4   |
| 57.5° | 1397.8 | 908.7  | 41.4  | 20.7  | 12.2  | 8.5   | 4.9   | 3.6   | 2.4   | 2.4   | 2.4   |
| 60°   | 1591.2 | 1009.7 | 35.3  | 15.8  | 9.7   | 6.1   | 3.6   | 2.4   | 1.2   | 1.2   | 1.2   |
| 62.5° | 1778.6 | 1066.9 | 29.2  | 12.2  | 7.3   | 4.9   | 2.4   | 1.2   | 1.2   | 1.2   | 1.2   |
| 65°   | 1860.1 | 1040.1 | 23.1  | 9.7   | 6.1   | 3.6   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   |
| 67.5° | 1750.6 | 879.5  | 18.2  | 7.3   | 4.9   | 2.4   | 1.2   | 1.2   | 0.0   | 0.0   | 0.0   |
| 70°   | 1507.3 | 711.7  | 14.6  | 6.1   | 3.6   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1183.7 | 524.3  | 12.2  | 4.9   | 2.4   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   | 0.0   |
| 75°   | 720.2  | 264.0  | 10.9  | 3.6   | 2.4   | 2.4   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   |
| 77.5° | 244.5  | 82.7   | 7.3   | 3.6   | 2.4   | 2.4   | 1.2   | 1.2   | 1.2   | 1.2   | 1.2   |
| 80°   | 71.8   | 26.8   | 6.1   | 2.4   | 2.4   | 1.2   | 1.2   | 1.2   | 1.2   | 1.2   | 1.2   |
| 82.5° | 37.7   | 12.2   | 3.6   | 2.4   | 1.2   | 1.2   | 1.2   | 1.2   | 1.2   | 1.2   | 1.2   |
| 85°   | 20.7   | 6.1    | 2.4   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   | 1.2   | 1.2   | 1.2   |
| 87.5° | 3.6    | 2.4    | 2.4   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   | 0.0   | 1.2   | 1.2   |
| 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



**Test Information**

Test Method: LM-79-08  
 Report Number: SP1-2101-121-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry: 4π  
 Issue Date: 03/05/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**  
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

**Spectral Parameters**

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 3905    | CRI (Ra): | 71.2 | R9:  | -29.7 |
| CIE u':                   | 0.2273  | R1:       | 68.9 | R10: | 46.2  |
| CIE v':                   | 0.5024  | R2:       | 77.0 | R11: | 68.8  |
| Duv:                      | -0.0008 | R3:       | 84.0 | R12: | 45.6  |
| CIE x:                    | 0.3841  | R4:       | 71.6 | R13: | 69.5  |
| CIE y:                    | 0.3774  | R5:       | 68.9 | R14: | 90.7  |
| CIE z:                    | 0.2385  | R6:       | 68.3 |      |       |
| Peak Wavelength (nm):     | 443     | R7:       | 78.7 |      |       |
| Dominant Wavelength (nm): | 579     | R8:       | 52.2 |      |       |
| Purity:                   | 28.7    |           |      |      |       |
| Rf:                       | 71.7    |           |      |      |       |
| Rg:                       | 96.9    |           |      |      |       |



**Test Conditions**

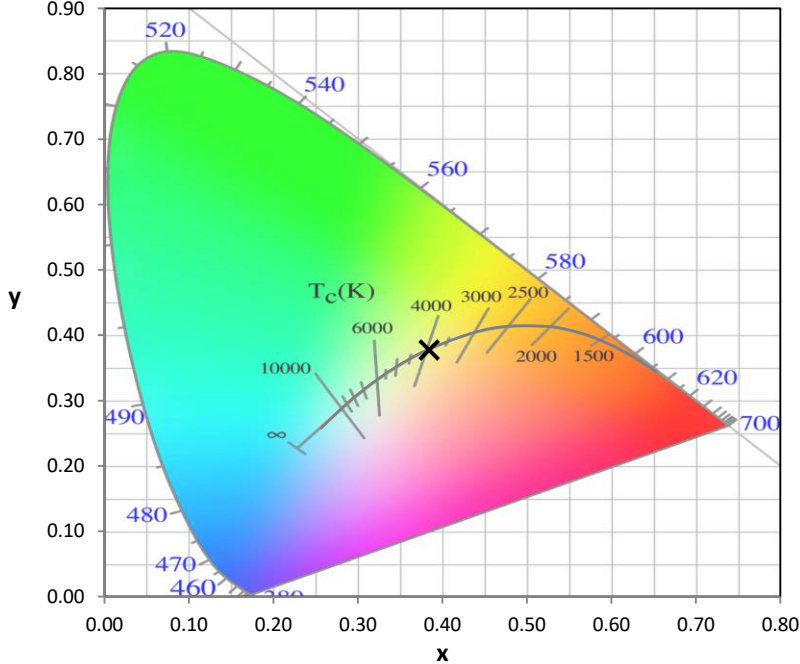
Stabilization Time: 211M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/312%  
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| 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            |

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

**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    | 2304          | 0.0           | 490    | 19043         | 2.7           | 620    | 97577         | 25.4          | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 4.8           | 625    | 90158         | 19.9          | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 8.0           | 630    | 82240         | 14.9          | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 13.3          | 635    | 74361         | 11.2          | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 20.2          | 640    | 66994         | 8.0           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 28.5          | 645    | 60405         | 5.8           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 37.4          | 650    | 53806         | 3.9           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 44.9          | 655    | 47610         | 2.7           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 52.6          | 660    | 42018         | 1.8           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.0           | 535    | 94097         | 58.4          | 665    | 36742         | 1.2           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.0           | 540    | 96845         | 63.1          | 670    | 32105         | 0.7           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.0           | 545    | 100829        | 67.1          | 675    | 27946         | 0.5           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 0.1           | 550    | 105648        | 71.8          | 680    | 24146         | 0.3           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 0.2           | 555    | 110017        | 75.1          | 685    | 21191         | 0.2           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 0.5           | 560    | 114586        | 77.9          | 690    | 18544         | 0.1           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 1.2           | 565    | 118987        | 79.1          | 695    | 16058         | 0.1           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 2.1           | 570    | 122326        | 79.5          | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 2.9           | 575    | 125968        | 78.4          | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 2.7           | 580    | 127613        | 75.8          | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 2.0           | 585    | 129466        | 71.9          | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 1.5           | 590    | 128813        | 66.6          | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 1.3           | 595    | 126387        | 59.9          | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 1.0           | 600    | 123477        | 53.2          | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 1.1           | 605    | 118718        | 46.0          | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 1.2           | 610    | 112091        | 38.5          | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 1.7           | 615    | 105039        | 31.7          | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| 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    | 2304          | 0.0           | 490    | 19043         | 29.3          | 620    | 97577         | 1.2           | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 43.0          | 625    | 90158         | 0.8           | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 60.8          | 630    | 82240         | 0.5           | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 81.1          | 635    | 74361         | 0.3           | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 99.6          | 640    | 66994         | 0.2           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 113.9         | 645    | 60405         | 0.1           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 122.6         | 650    | 53806         | 0.1           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 125.0         | 655    | 47610         | 0.0           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 123.1         | 660    | 42018         | 0.0           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.1           | 535    | 94097         | 117.3         | 665    | 36742         | 0.0           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.2           | 540    | 96845         | 107.0         | 670    | 32105         | 0.0           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.9           | 545    | 100829        | 96.7          | 675    | 27946         | 0.0           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 3.0           | 550    | 105648        | 86.4          | 680    | 24146         | 0.0           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 9.3           | 555    | 110017        | 75.2          | 685    | 21191         | 0.0           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 23.0          | 560    | 114586        | 64.0          | 690    | 18544         | 0.0           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 45.7          | 565    | 118987        | 53.4          | 695    | 16058         | 0.0           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 75.5          | 570    | 122326        | 43.2          | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 93.8          | 575    | 125968        | 34.3          | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 79.3          | 580    | 127613        | 26.3          | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 51.3          | 585    | 129466        | 19.8          | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 35.6          | 590    | 128813        | 14.3          | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 26.0          | 595    | 126387        | 10.1          | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 19.3          | 600    | 123477        | 7.0           | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 16.8          | 605    | 118718        | 4.7           | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 17.7          | 610    | 112091        | 3.0           | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 21.4          | 615    | 105039        | 1.9           | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-2

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 3927.2 M/P: 0.55**

| 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    | 2304          | 0.0           | 490    | 19043         | 15.8          | 620    | 97577         | 0.1           | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 22.0          | 625    | 90158         | 0.0           | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 29.2          | 630    | 82240         | 0.0           | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 36.6          | 635    | 74361         | 0.0           | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 42.2          | 640    | 66994         | 0.0           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 44.9          | 645    | 60405         | 0.0           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 44.9          | 650    | 53806         | 0.0           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 42.4          | 655    | 47610         | 0.0           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 38.6          | 660    | 42018         | 0.0           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.0           | 535    | 94097         | 33.9          | 665    | 36742         | 0.0           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.2           | 540    | 96845         | 28.3          | 670    | 32105         | 0.0           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.6           | 545    | 100829        | 23.4          | 675    | 27946         | 0.0           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 2.1           | 550    | 105648        | 19.0          | 680    | 24146         | 0.0           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 5.9           | 555    | 110017        | 14.8          | 685    | 21191         | 0.0           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 14.3          | 560    | 114586        | 11.3          | 690    | 18544         | 0.0           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 27.3          | 565    | 118987        | 8.4           | 695    | 16058         | 0.0           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 45.1          | 570    | 122326        | 6.0           | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 55.3          | 575    | 125968        | 4.2           | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 47.2          | 580    | 127613        | 2.9           | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 30.8          | 585    | 129466        | 1.9           | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 21.7          | 590    | 128813        | 1.3           | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 16.1          | 595    | 126387        | 0.8           | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 12.0          | 600    | 123477        | 0.5           | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 10.3          | 605    | 118718        | 0.3           | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 10.5          | 610    | 112091        | 0.2           | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 12.1          | 615    | 105039        | 0.1           | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

**Summary**

$R_f = 71.7$   
 $R_g = 96.9$   
 CIE  $R_a = 71.2$   
 $R_g = -29.7$



**Color Vector Graphics**





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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)