

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: P630310

Luminaire Tested: GWS-SA1D-735-U-T4FT-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P630310  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-54)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1D-735-U-T4FT-W  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS  
Light Source: (16) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

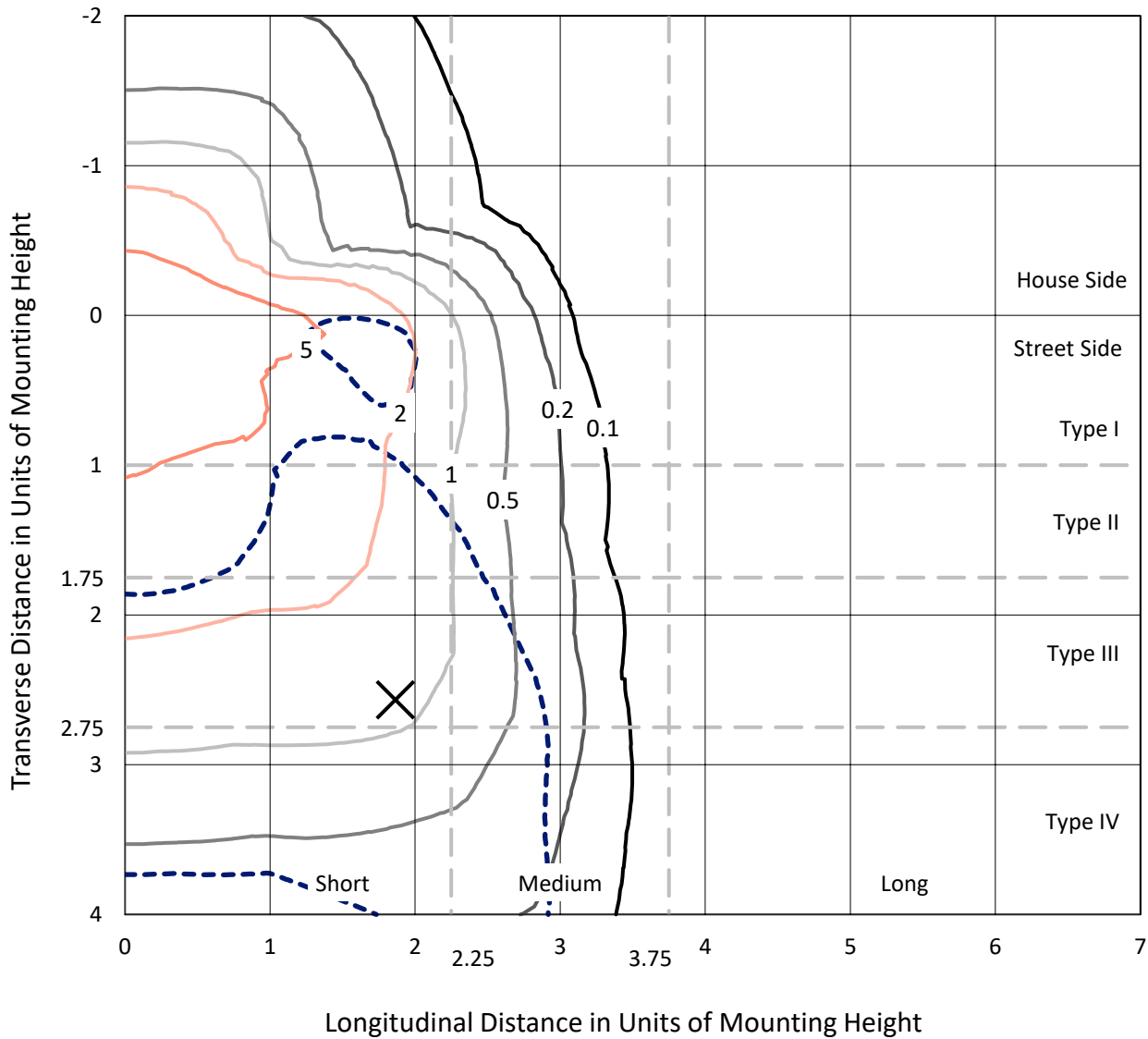
Lumens per Lamp: N/A  
Luminaire Lumens: 5776.8 lumens  
Efficiency: N/A  
Efficacy: 130.4 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 44.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P630310  
 CATALOG NUMBER: GWS-SA1D-735-U-T4FT-W

### Iso-Footcandle Lines of Horizontal Illumination

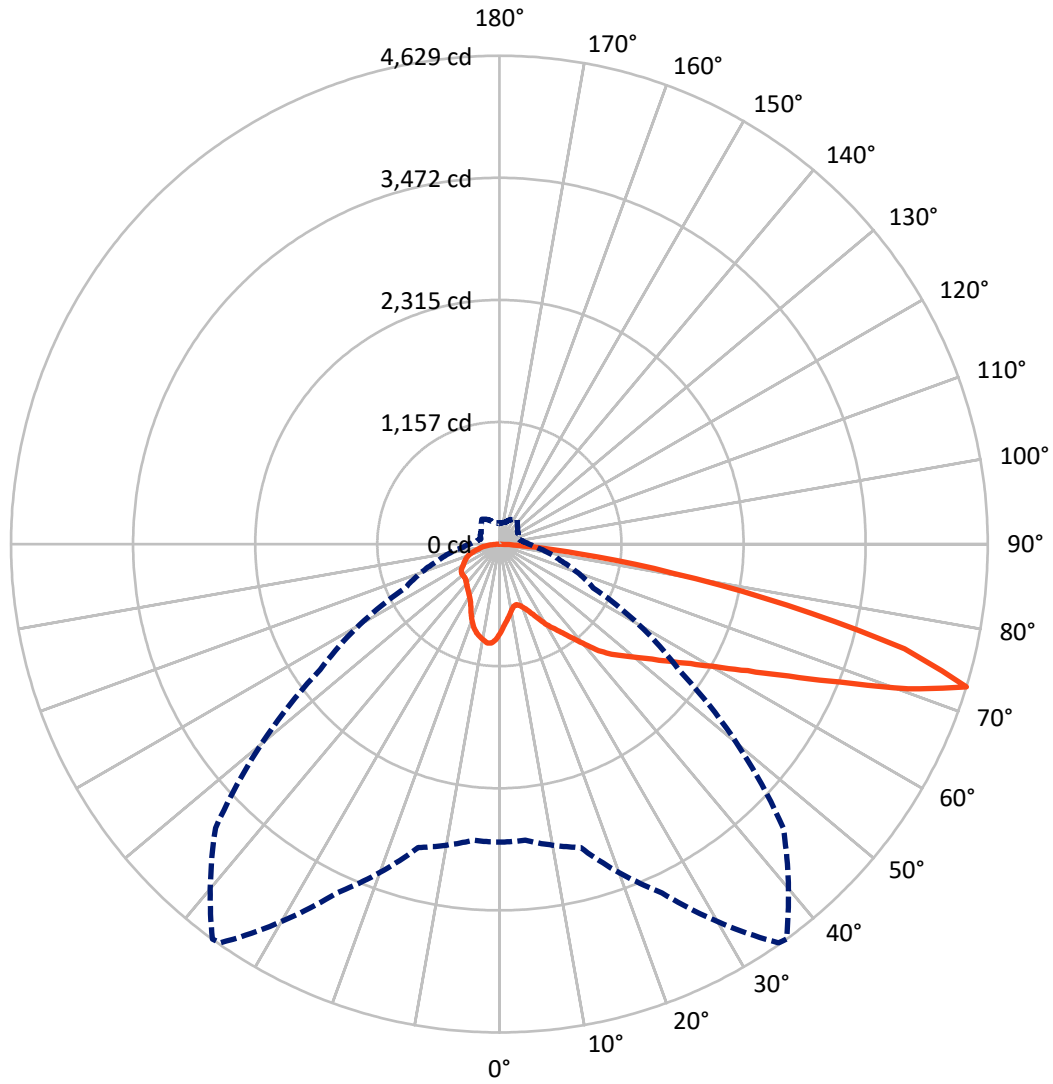
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9 fc  
 Type IV - Short - N/A

REPORT NUMBER: P630310  
CATALOG NUMBER: GWS-SA1D-735-U-T4FT-W

### Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

REPORT NUMBER: P630310

CATALOG NUMBER: GWS-SA1D-735-U-T4FT-W

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1331.8   | 0.0    | 1331.8 |
|                    | % Fixture | 23.1     | 0.0    | 23.1   |
| <b>Street Side</b> | Lumens    | 4445.0   | 0.0    | 4445.0 |
|                    | % Fixture | 76.9     | 0.0    | 76.9   |
| <b>Total</b>       | Lumens    | 5776.8   | 0.0    | 5776.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 79.0   | 1.4       |
| 10°-20°   | 223.0  | 3.9       |
| 20°-30°   | 369.3  | 6.4       |
| 30°-40°   | 553.0  | 9.6       |
| 40°-50°   | 806.8  | 14.0      |
| 50°-60°   | 1148.3 | 19.9      |
| 60°-70°   | 1450.8 | 25.1      |
| 70°-80°   | 1033.8 | 17.9      |
| 80°-90°   | 112.9  | 2.0       |
| 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°    | 5776.8 | 100.0     |
| 0°-180°   | 5776.8 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P630310

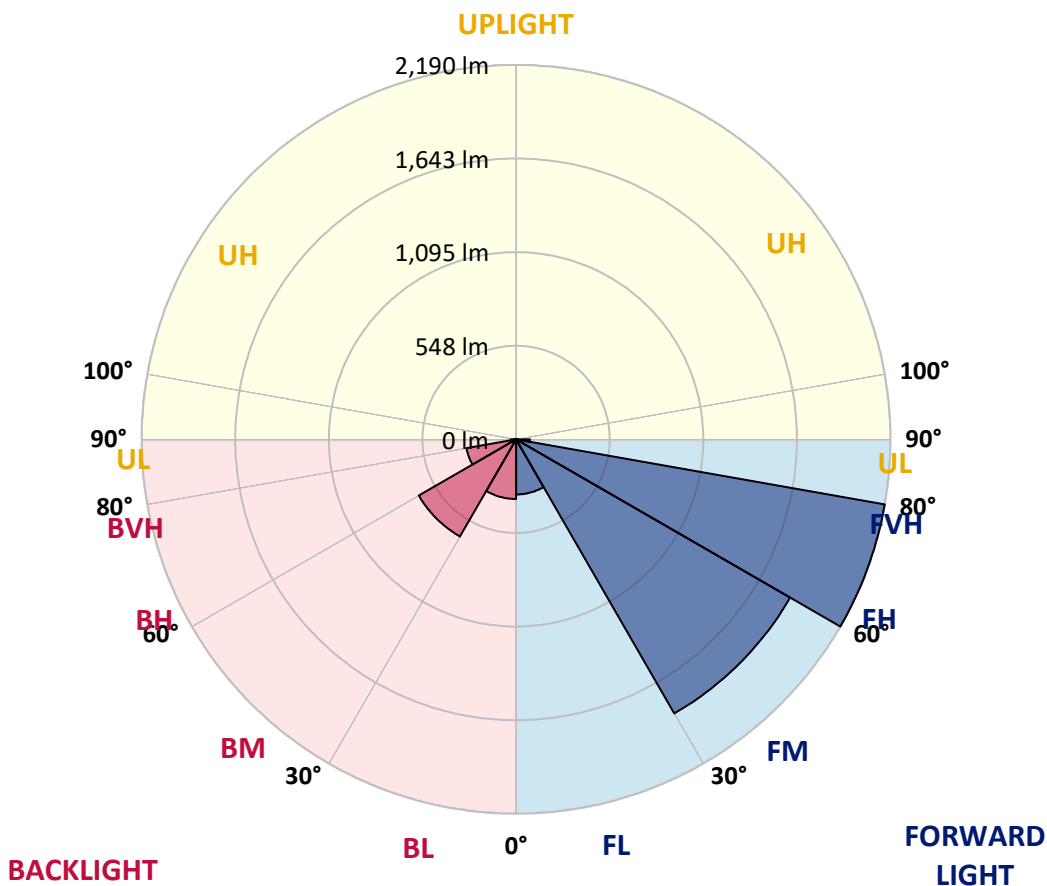
CATALOG NUMBER: GWS-SA1D-735-U-T4FT-W

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 322.5  | 5.6       |                         |      |         |
| FM (30°-60°)   | 1851.3 | 32.0      |                         |      |         |
| FH (60°-80°)   | 2190.2 | 37.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 81.0   | 1.4       |                         |      | G1/100  |
| BL (0°-30°)    | 348.8  | 6.0       | B1/500                  |      |         |
| BM (30°-60°)   | 656.8  | 11.4      | B1/1000                 |      |         |
| BH (60°-80°)   | 294.4  | 5.1       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 31.9   | 0.6       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type IV Short





REPORT NUMBER: P630310  
 CATALOG NUMBER: GWS-SA1D-735-U-T4FT-W

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 36°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  | 845.5  |
| 2.5°  | 771.3  | 770.0  | 767.4  | 775.1  | 782.9  | 782.0  | 792.7  | 803.0  | 814.2  | 825.7  | 841.2  |
| 5°    | 709.6  | 708.7  | 706.6  | 718.1  | 729.7  | 729.3  | 746.9  | 763.6  | 786.3  | 811.2  | 842.0  |
| 7.5°  | 647.8  | 645.7  | 648.7  | 663.2  | 679.5  | 681.3  | 705.3  | 732.7  | 765.7  | 803.0  | 846.7  |
| 10°   | 593.4  | 592.9  | 594.2  | 610.5  | 635.0  | 636.7  | 667.5  | 705.7  | 749.4  | 799.2  | 857.5  |
| 12.5° | 579.2  | 578.4  | 574.9  | 583.1  | 601.5  | 604.1  | 638.0  | 684.7  | 738.3  | 801.3  | 872.0  |
| 15°   | 602.4  | 600.2  | 588.2  | 584.4  | 593.4  | 595.5  | 624.2  | 672.3  | 731.8  | 805.2  | 890.5  |
| 17.5° | 642.2  | 641.0  | 618.2  | 602.4  | 608.4  | 610.1  | 631.5  | 670.1  | 730.1  | 812.9  | 913.2  |
| 20°   | 700.5  | 695.0  | 659.4  | 635.4  | 635.4  | 638.0  | 650.8  | 679.5  | 732.3  | 822.3  | 938.9  |
| 22.5° | 777.7  | 766.6  | 716.4  | 683.8  | 675.3  | 678.7  | 684.3  | 703.1  | 741.3  | 838.2  | 971.1  |
| 25°   | 864.3  | 854.0  | 794.4  | 748.6  | 736.6  | 737.8  | 733.1  | 736.6  | 761.0  | 860.0  | 1011.0 |
| 27.5° | 956.5  | 949.6  | 886.2  | 827.9  | 809.0  | 809.0  | 792.3  | 784.2  | 788.4  | 884.9  | 1055.5 |
| 30°   | 1038.8 | 1029.4 | 975.8  | 911.9  | 887.0  | 887.0  | 855.3  | 837.7  | 827.5  | 915.3  | 1115.1 |
| 32.5° | 1082.1 | 1076.5 | 1041.0 | 992.1  | 961.6  | 956.9  | 929.5  | 908.9  | 884.9  | 960.4  | 1195.7 |
| 35°   | 1138.7 | 1137.4 | 1116.0 | 1077.8 | 1039.2 | 1032.4 | 1013.5 | 997.2  | 955.6  | 1016.5 | 1302.9 |
| 37.5° | 1209.9 | 1207.7 | 1204.3 | 1181.6 | 1135.3 | 1134.0 | 1117.3 | 1097.6 | 1043.5 | 1097.6 | 1432.8 |
| 40°   | 1289.6 | 1285.8 | 1281.5 | 1281.1 | 1253.2 | 1248.5 | 1247.2 | 1224.9 | 1149.4 | 1195.3 | 1568.3 |
| 42.5° | 1399.4 | 1386.1 | 1345.8 | 1363.8 | 1384.4 | 1380.1 | 1396.4 | 1362.9 | 1281.5 | 1311.5 | 1696.5 |
| 45°   | 1534.4 | 1501.9 | 1422.1 | 1427.3 | 1479.1 | 1487.7 | 1544.3 | 1536.1 | 1426.8 | 1445.7 | 1831.5 |
| 47.5° | 1615.5 | 1587.2 | 1513.0 | 1508.7 | 1573.4 | 1584.2 | 1707.2 | 1722.6 | 1583.3 | 1607.3 | 1998.3 |
| 50°   | 1681.9 | 1662.2 | 1601.3 | 1607.3 | 1675.9 | 1686.6 | 1868.8 | 1901.9 | 1730.8 | 1772.8 | 2192.1 |
| 52.5° | 1762.1 | 1733.8 | 1686.6 | 1714.9 | 1799.0 | 1811.8 | 2048.5 | 2084.1 | 1863.7 | 1954.6 | 2392.8 |
| 55°   | 1807.1 | 1795.5 | 1796.4 | 1839.7 | 1945.2 | 1962.7 | 2236.7 | 2230.7 | 1985.5 | 2110.2 | 2543.7 |
| 57.5° | 1910.9 | 1906.6 | 1946.0 | 1962.3 | 2115.8 | 2138.5 | 2424.9 | 2373.5 | 2096.1 | 2230.7 | 2616.1 |
| 60°   | 2093.9 | 2083.2 | 2117.5 | 2142.4 | 2326.7 | 2358.9 | 2635.0 | 2513.2 | 2171.1 | 2320.3 | 2591.7 |
| 62.5° | 2351.2 | 2337.9 | 2339.2 | 2378.6 | 2609.3 | 2643.1 | 2868.6 | 2629.8 | 2194.3 | 2334.0 | 2436.9 |
| 65°   | 2671.0 | 2651.7 | 2629.8 | 2683.4 | 2984.4 | 3012.7 | 3122.9 | 2714.7 | 2138.9 | 2202.0 | 2113.7 |
| 67.5° | 3008.4 | 2992.6 | 2966.8 | 3079.2 | 3470.2 | 3487.3 | 3408.0 | 2707.4 | 1963.6 | 1848.7 | 1482.6 |
| 70°   | 3028.1 | 3032.0 | 3153.8 | 3560.2 | 4104.3 | 4108.5 | 3677.7 | 2560.8 | 1590.2 | 1198.3 | 738.7  |
| 72.5° | 2824.9 | 2818.5 | 2977.1 | 3648.1 | 4614.4 | 4629.0 | 3805.0 | 2074.6 | 982.7  | 597.7  | 346.4  |
| 75°   | 2294.6 | 2305.7 | 2472.5 | 3191.9 | 3955.1 | 3967.9 | 3101.9 | 1223.2 | 466.9  | 292.4  | 221.7  |
| 77.5° | 987.8  | 1050.0 | 1378.8 | 2248.7 | 2832.6 | 2792.8 | 1598.7 | 495.6  | 249.1  | 208.4  | 169.8  |
| 80°   | 285.1  | 309.5  | 491.3  | 1069.3 | 1697.4 | 1667.3 | 632.8  | 185.6  | 173.6  | 156.5  | 121.8  |
| 82.5° | 92.2   | 102.0  | 180.1  | 425.7  | 760.6  | 759.7  | 240.1  | 109.8  | 113.6  | 106.3  | 78.5   |
| 85°   | 25.7   | 29.6   | 55.3   | 129.0  | 235.4  | 230.7  | 69.5   | 51.9   | 60.5   | 61.3   | 39.0   |
| 87.5° | 0.0    | 0.0    | 0.4    | 0.9    | 0.9    | 0.9    | 1.7    | 7.7    | 17.6   | 22.3   | 15.9   |
| 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: P630310  
 CATALOG NUMBER: GWS-SA1D-735-U-T4FT-W

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 845.5  | 845.5  | 845.5  | 845.5 | 845.5 | 845.5 | 845.5 | 845.5 | 845.5 | 845.5 | 845.5 |
| 2.5°  | 850.6  | 849.3  | 866.9  | 880.6 | 893.5 | 902.1 | 904.6 | 906.3 | 909.8 | 911.5 | 909.8 |
| 5°    | 856.6  | 863.0  | 892.2  | 913.6 | 930.8 | 941.1 | 941.5 | 940.6 | 943.2 | 941.1 | 939.8 |
| 7.5°  | 869.5  | 881.9  | 918.8  | 941.5 | 952.6 | 953.1 | 942.8 | 930.8 | 924.8 | 919.6 | 917.9 |
| 10°   | 886.6  | 905.1  | 945.4  | 960.4 | 956.9 | 941.1 | 918.3 | 899.5 | 888.8 | 881.0 | 879.3 |
| 12.5° | 910.2  | 930.8  | 968.9  | 968.5 | 947.1 | 918.8 | 892.2 | 869.5 | 854.0 | 845.0 | 842.0 |
| 15°   | 932.5  | 958.6  | 986.1  | 965.9 | 932.1 | 897.8 | 863.5 | 833.0 | 812.4 | 798.3 | 795.7 |
| 17.5° | 959.9  | 987.8  | 998.5  | 957.8 | 913.2 | 869.0 | 823.2 | 783.3 | 755.4 | 738.7 | 737.4 |
| 20°   | 991.7  | 1016.5 | 1004.5 | 943.6 | 888.8 | 830.9 | 768.7 | 724.1 | 694.1 | 677.8 | 679.1 |
| 22.5° | 1028.5 | 1046.5 | 1006.2 | 924.3 | 854.9 | 776.9 | 707.4 | 664.5 | 644.4 | 635.8 | 636.2 |
| 25°   | 1068.0 | 1079.5 | 1003.2 | 898.2 | 803.0 | 710.8 | 644.4 | 624.7 | 622.9 | 620.8 | 621.7 |
| 27.5° | 1114.7 | 1112.1 | 994.2  | 861.3 | 733.1 | 634.1 | 600.2 | 605.4 | 612.2 | 611.4 | 612.2 |
| 30°   | 1177.3 | 1152.9 | 982.7  | 810.3 | 650.0 | 569.8 | 574.1 | 588.6 | 597.7 | 598.5 | 601.1 |
| 32.5° | 1248.9 | 1197.9 | 964.2  | 740.8 | 570.6 | 533.8 | 549.6 | 567.2 | 577.9 | 580.1 | 583.5 |
| 35°   | 1334.2 | 1249.3 | 931.6  | 654.2 | 513.6 | 512.3 | 526.9 | 538.9 | 550.5 | 551.4 | 551.4 |
| 37.5° | 1432.4 | 1300.8 | 879.8  | 558.6 | 478.5 | 493.9 | 507.6 | 510.2 | 513.2 | 510.6 | 511.9 |
| 40°   | 1522.4 | 1350.5 | 806.0  | 471.6 | 449.7 | 477.6 | 489.2 | 480.6 | 471.2 | 464.7 | 466.0 |
| 42.5° | 1597.9 | 1384.4 | 708.3  | 410.7 | 420.6 | 463.0 | 472.0 | 454.5 | 436.0 | 424.0 | 425.7 |
| 45°   | 1682.8 | 1415.7 | 593.4  | 369.6 | 395.7 | 452.7 | 458.7 | 436.0 | 412.4 | 394.4 | 391.9 |
| 47.5° | 1799.8 | 1479.6 | 491.3  | 340.8 | 378.1 | 447.2 | 457.0 | 426.2 | 395.3 | 368.3 | 365.3 |
| 50°   | 1944.3 | 1570.0 | 406.0  | 322.0 | 370.0 | 444.2 | 456.6 | 415.4 | 378.6 | 346.8 | 344.7 |
| 52.5° | 2102.1 | 1658.3 | 343.0  | 307.4 | 361.9 | 435.2 | 454.5 | 403.4 | 361.0 | 326.7 | 324.1 |
| 55°   | 2207.1 | 1693.1 | 300.5  | 293.7 | 348.6 | 421.0 | 445.9 | 391.9 | 334.4 | 303.1 | 299.3 |
| 57.5° | 2238.0 | 1648.5 | 271.0  | 281.2 | 331.4 | 401.3 | 429.6 | 367.4 | 318.1 | 293.3 | 290.3 |
| 60°   | 2184.8 | 1536.1 | 252.5  | 271.0 | 312.5 | 376.0 | 401.3 | 353.3 | 305.3 | 283.0 | 280.8 |
| 62.5° | 2034.8 | 1362.9 | 238.4  | 260.2 | 293.3 | 349.4 | 383.3 | 336.1 | 291.1 | 273.5 | 270.5 |
| 65°   | 1732.9 | 1117.7 | 226.8  | 249.1 | 274.8 | 324.1 | 363.6 | 319.0 | 275.7 | 262.4 | 259.0 |
| 67.5° | 1212.0 | 785.0  | 214.4  | 235.8 | 256.4 | 299.7 | 343.0 | 303.1 | 259.8 | 250.0 | 246.5 |
| 70°   | 592.5  | 416.3  | 199.4  | 220.4 | 236.7 | 274.8 | 322.4 | 283.8 | 238.8 | 233.2 | 228.5 |
| 72.5° | 282.1  | 232.8  | 181.8  | 199.4 | 209.7 | 241.8 | 288.1 | 256.0 | 213.9 | 201.9 | 193.8 |
| 75°   | 189.1  | 165.5  | 158.6  | 174.5 | 177.1 | 202.8 | 246.9 | 220.8 | 188.6 | 174.9 | 168.1 |
| 77.5° | 143.2  | 126.5  | 133.3  | 147.5 | 142.3 | 166.8 | 203.2 | 196.8 | 170.2 | 157.8 | 154.3 |
| 80°   | 100.8  | 92.2   | 105.9  | 114.5 | 110.6 | 141.9 | 183.1 | 168.5 | 140.2 | 126.5 | 123.9 |
| 82.5° | 63.5   | 61.7   | 78.0   | 79.3  | 80.6  | 112.3 | 150.5 | 132.5 | 108.9 | 89.6  | 83.2  |
| 85°   | 31.7   | 35.2   | 46.7   | 46.7  | 46.3  | 57.9  | 85.7  | 74.6  | 58.7  | 46.7  | 45.4  |
| 87.5° | 10.7   | 15.0   | 20.2   | 16.3  | 12.4  | 9.9   | 11.1  | 13.7  | 14.6  | 14.1  | 14.1  |
| 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

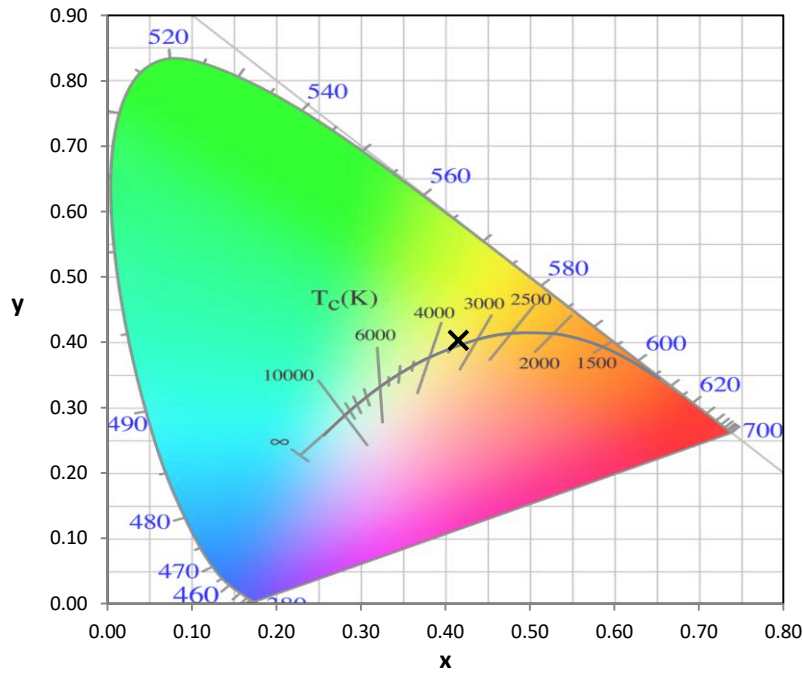


REPORT NUMBER: SP1-2101-121-7

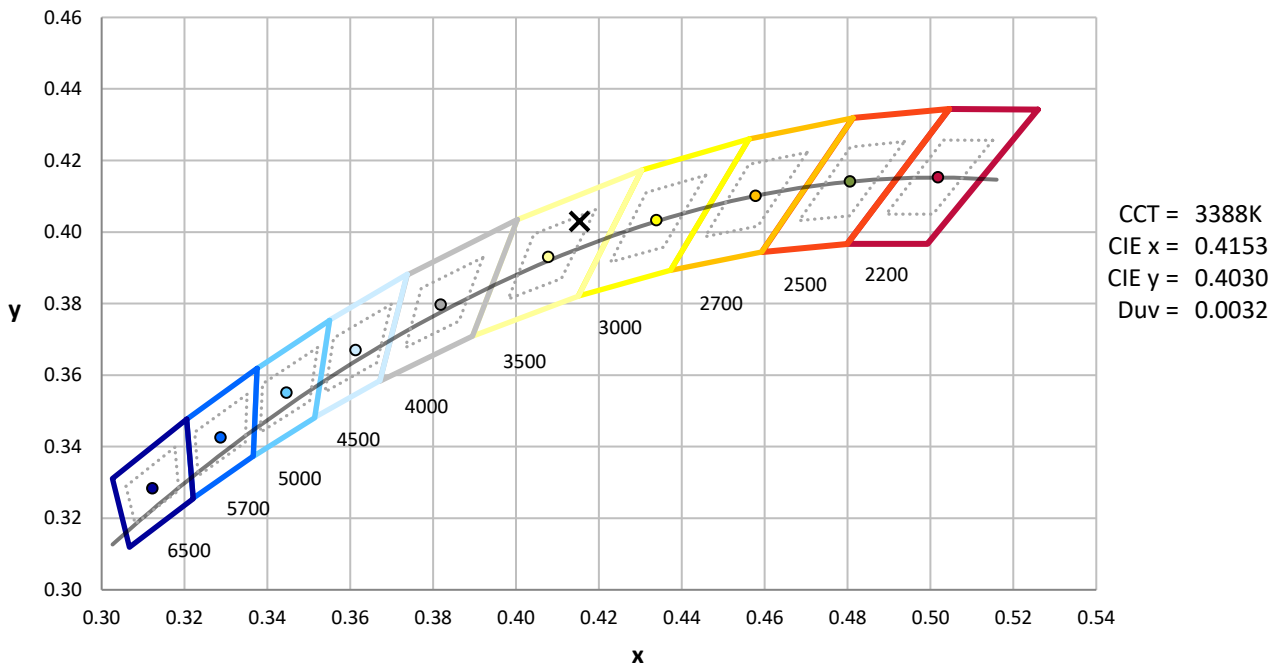
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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: SP1-2101-121-7

**CIE 1931 Chromaticity Diagram**



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



CCT = 3388K  
 CIE x = 0.4153  
 CIE y = 0.4030  
 Duv = 0.0032

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

**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)