

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: P386395

Luminaire Tested: **GPC-SA2A-735-U-T2**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P386395  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA2A-735-U-T2  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(2) 70 CRI, 3500K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8964.7 lumens  
Efficiency: N/A  
Efficacy: 135.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G2

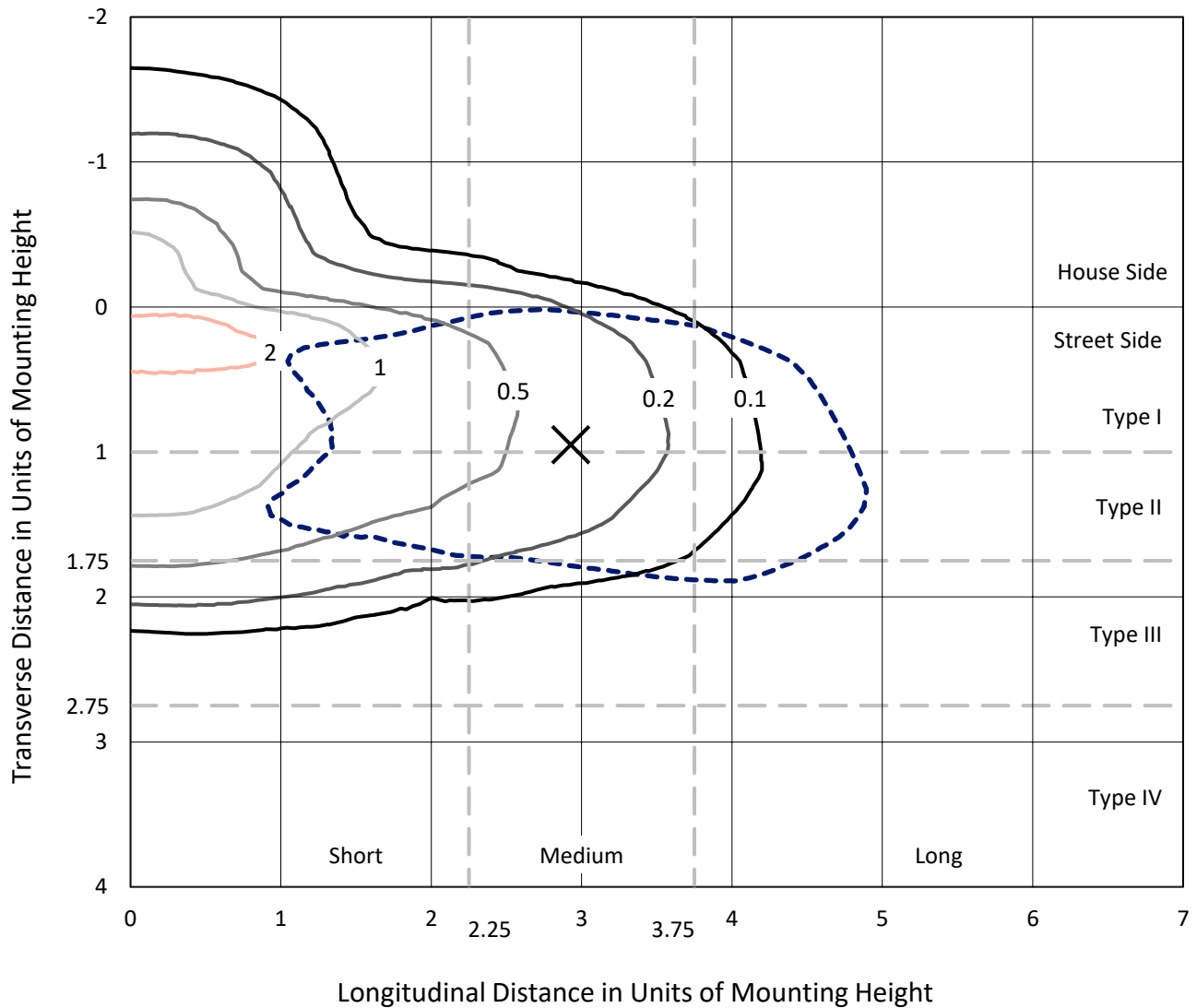
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

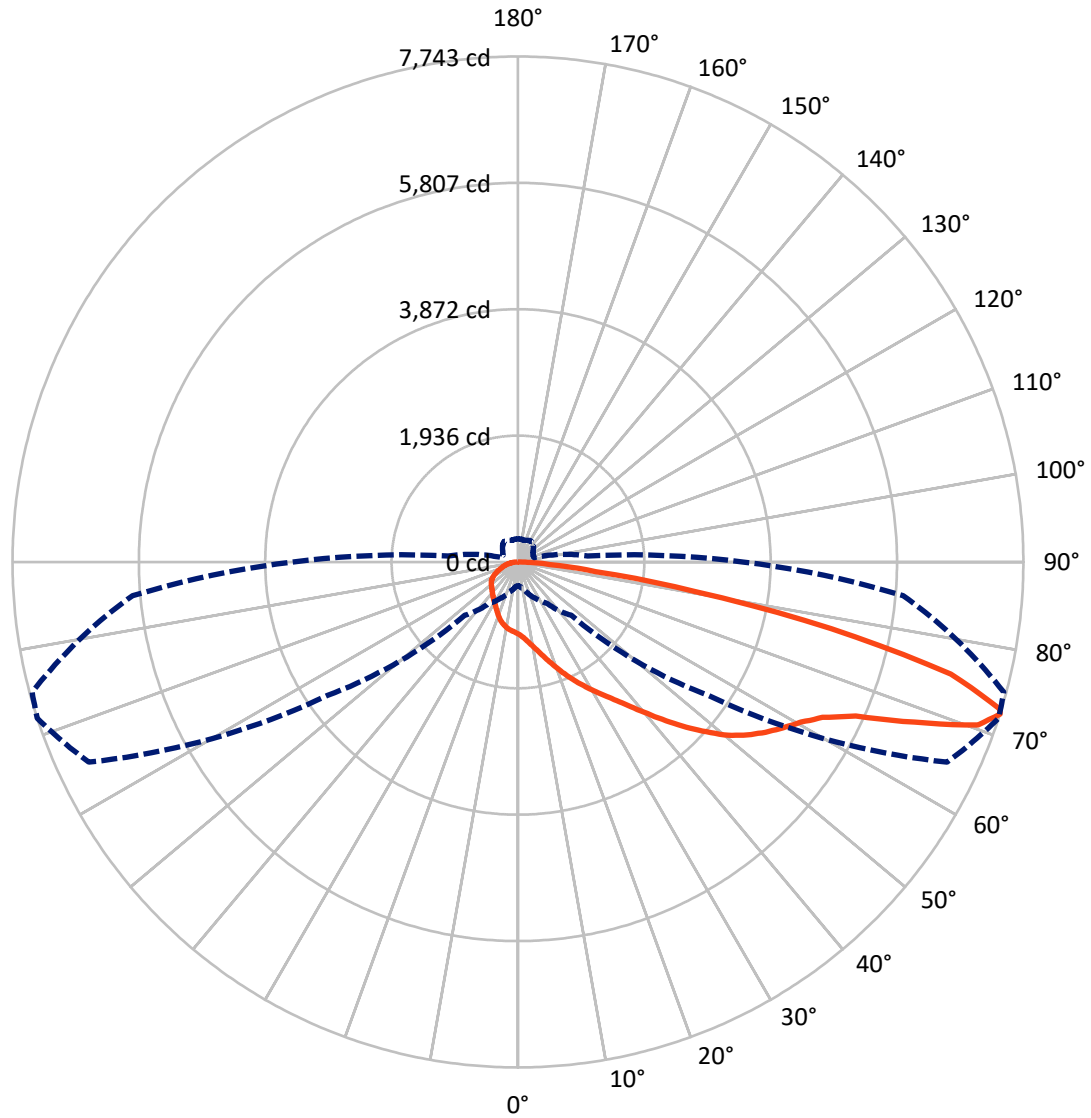
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.4 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 72-Deg Lateral      - - - Horizontal Cone Through 72-Deg Vertical

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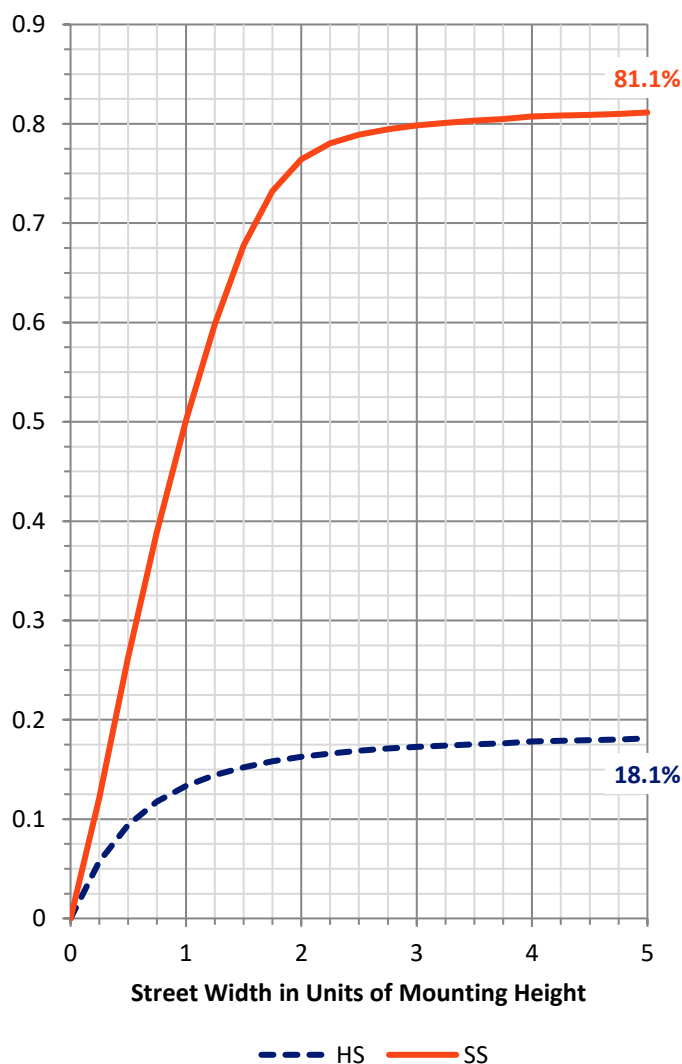
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1663.0   | 0.0    | 1663.0 |
|                    | % Fixture | 18.6     | 0.0    | 18.6   |
| <b>Street Side</b> | Lumens    | 7301.6   | 0.0    | 7301.6 |
|                    | % Fixture | 81.4     | 0.0    | 81.4   |
| <b>Total</b>       | Lumens    | 8964.7   | 0.0    | 8964.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 110.5  | 1.2       |
| 10°-20°   | 357.1  | 4.0       |
| 20°-30°   | 625.8  | 7.0       |
| 30°-40°   | 927.9  | 10.4      |
| 40°-50°   | 1357.1 | 15.1      |
| 50°-60°   | 1867.3 | 20.8      |
| 60°-70°   | 2078.9 | 23.2      |
| 70°-80°   | 1408.6 | 15.7      |
| 80°-90°   | 231.5  | 2.6       |
| 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°    | 8964.7 | 100.0     |
| 0°-180°   | 8964.7 | 100.0     |

**Coefficient of Utilization**

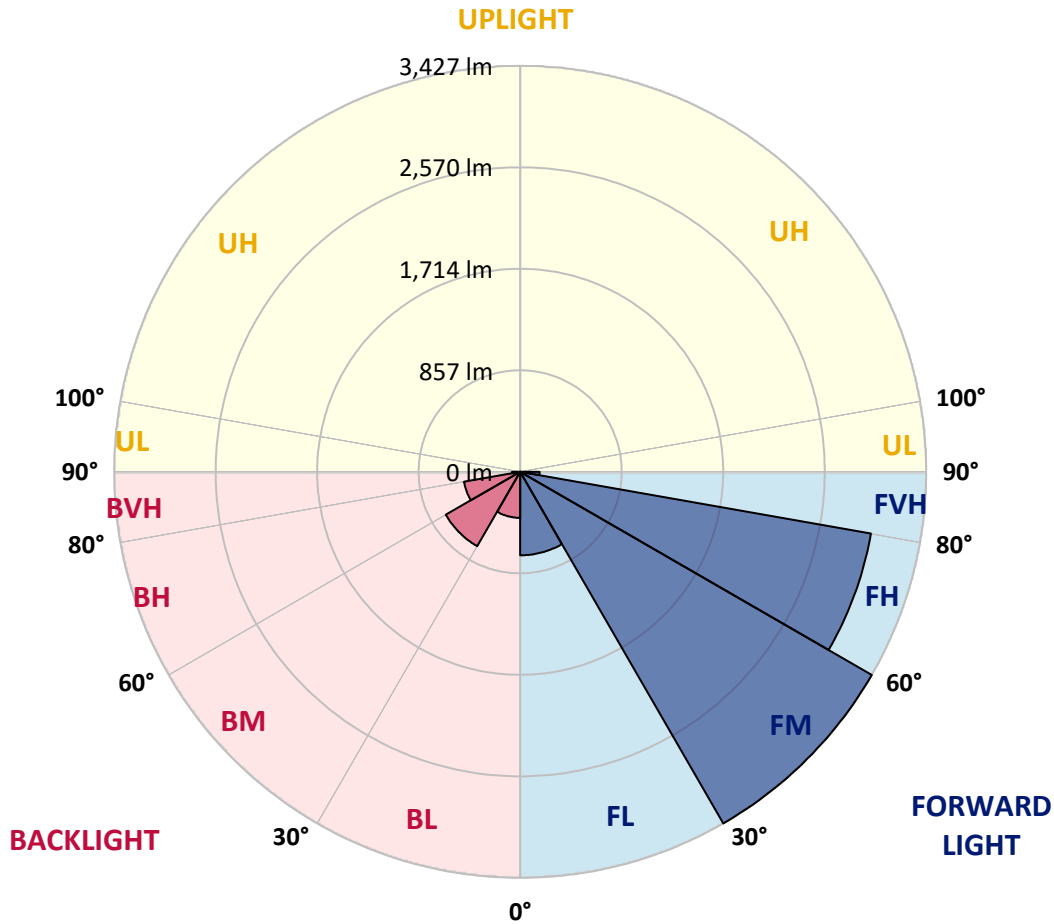


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 704.7  | 7.9       |                         |      |         |
| FM (30°-60°)   | 3427.3 | 38.2      |                         |      |         |
| FH (60°-80°)   | 3006.4 | 33.5      |                         |      | G2/5000 |
| FVH (80°-90°)  | 163.3  | 1.8       |                         |      | G2/225  |
| BL (0°-30°)    | 388.7  | 4.3       | B1/500                  |      |         |
| BM (30°-60°)   | 724.9  | 8.1       | B1/1000                 |      |         |
| BH (60°-80°)   | 481.1  | 5.4       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 68.2   | 0.8       |                         |      | 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 III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 72°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 |
| 2.5°  | 1218.3 | 1216.5 | 1210.0 | 1210.0 | 1197.6 | 1187.1 | 1167.4 | 1154.1 | 1138.4 | 1132.8 | 1114.3 |
| 5°    | 1336.2 | 1336.9 | 1328.9 | 1323.2 | 1305.1 | 1282.8 | 1249.2 | 1218.7 | 1188.1 | 1175.7 | 1137.8 |
| 7.5°  | 1435.3 | 1434.1 | 1431.9 | 1427.3 | 1410.3 | 1387.5 | 1342.1 | 1296.7 | 1251.6 | 1233.1 | 1167.7 |
| 10°   | 1498.9 | 1501.7 | 1503.5 | 1505.7 | 1498.6 | 1482.3 | 1439.3 | 1384.1 | 1325.1 | 1299.8 | 1203.6 |
| 12.5° | 1531.0 | 1535.9 | 1544.6 | 1559.4 | 1571.1 | 1569.3 | 1538.1 | 1479.5 | 1409.4 | 1377.6 | 1248.3 |
| 15°   | 1549.8 | 1556.3 | 1569.9 | 1596.4 | 1629.5 | 1648.3 | 1640.0 | 1586.9 | 1508.8 | 1469.6 | 1302.9 |
| 17.5° | 1561.6 | 1566.8 | 1587.8 | 1623.3 | 1672.4 | 1722.4 | 1744.3 | 1699.8 | 1621.1 | 1576.4 | 1365.6 |
| 20°   | 1569.6 | 1573.6 | 1599.9 | 1641.5 | 1705.1 | 1784.8 | 1845.8 | 1834.7 | 1744.9 | 1686.9 | 1431.0 |
| 22.5° | 1587.5 | 1590.9 | 1615.9 | 1657.8 | 1728.3 | 1831.1 | 1943.7 | 1960.4 | 1875.5 | 1809.7 | 1501.1 |
| 25°   | 1637.5 | 1637.5 | 1658.5 | 1687.8 | 1753.8 | 1871.2 | 2026.5 | 2100.2 | 2008.8 | 1932.2 | 1565.9 |
| 27.5° | 1732.9 | 1732.0 | 1739.7 | 1749.9 | 1799.9 | 1911.9 | 2100.2 | 2223.6 | 2147.1 | 2063.5 | 1628.8 |
| 30°   | 1845.8 | 1852.0 | 1853.0 | 1848.0 | 1871.5 | 1962.9 | 2168.4 | 2353.9 | 2286.3 | 2196.2 | 1693.4 |
| 32.5° | 1991.2 | 1995.3 | 1990.7 | 1974.2 | 1970.8 | 2035.1 | 2235.4 | 2490.3 | 2437.0 | 2334.8 | 1752.3 |
| 35°   | 2175.8 | 2168.1 | 2153.6 | 2120.3 | 2088.5 | 2131.7 | 2311.9 | 2626.8 | 2606.2 | 2502.4 | 1833.5 |
| 37.5° | 2373.7 | 2374.0 | 2356.1 | 2280.5 | 2236.6 | 2255.1 | 2417.5 | 2781.5 | 2810.8 | 2701.8 | 1937.5 |
| 40°   | 2532.3 | 2540.7 | 2551.8 | 2452.4 | 2395.6 | 2421.2 | 2551.8 | 2960.8 | 3052.7 | 2938.2 | 2073.1 |
| 42.5° | 2643.2 | 2652.8 | 2684.2 | 2621.8 | 2562.9 | 2610.5 | 2709.9 | 3152.1 | 3324.4 | 3211.1 | 2231.7 |
| 45°   | 2760.4 | 2765.7 | 2787.9 | 2761.1 | 2723.4 | 2830.5 | 2888.0 | 3350.3 | 3611.8 | 3501.9 | 2409.2 |
| 47.5° | 2883.9 | 2889.5 | 2912.3 | 2894.5 | 2874.6 | 3036.1 | 3073.8 | 3537.1 | 3887.1 | 3821.4 | 2598.7 |
| 50°   | 3036.4 | 3040.1 | 3061.7 | 3029.3 | 3035.5 | 3191.0 | 3239.8 | 3708.4 | 4175.7 | 4108.4 | 2788.9 |
| 52.5° | 3244.5 | 3245.4 | 3275.3 | 3246.0 | 3217.0 | 3304.6 | 3382.8 | 3869.8 | 4402.0 | 4370.2 | 2979.0 |
| 55°   | 3407.5 | 3417.3 | 3515.5 | 3509.3 | 3492.7 | 3407.7 | 3502.2 | 4023.5 | 4603.9 | 4619.0 | 3180.9 |
| 57.5° | 3303.4 | 3342.0 | 3540.8 | 3680.9 | 3817.3 | 3664.2 | 3663.6 | 4196.7 | 4791.5 | 4863.1 | 3402.8 |
| 60°   | 2893.1 | 2945.7 | 3238.6 | 3549.4 | 3976.3 | 4110.6 | 3998.8 | 4408.1 | 4981.0 | 5105.1 | 3680.9 |
| 62.5° | 2066.3 | 2152.7 | 2549.6 | 3046.0 | 3758.4 | 4406.3 | 4681.0 | 4743.7 | 5238.8 | 5385.4 | 4042.4 |
| 65°   | 1044.5 | 1110.0 | 1442.7 | 2040.6 | 3002.8 | 4213.1 | 5422.5 | 5478.3 | 5686.6 | 5816.9 | 4598.9 |
| 67.5° | 634.7  | 659.4  | 821.7  | 1135.0 | 1840.9 | 3281.8 | 5664.5 | 6702.8 | 6553.4 | 6622.5 | 5392.5 |
| 70°   | 467.6  | 485.9  | 587.1  | 753.8  | 1058.8 | 1925.8 | 4921.8 | 7576.7 | 7478.5 | 7470.8 | 5979.0 |
| 72°   | 364.2  | 377.5  | 467.1  | 609.0  | 774.2  | 1155.4 | 3567.3 | 7254.1 | 7743.3 | 7704.4 | 5925.2 |
| 72.5° | 345.4  | 357.2  | 438.6  | 573.2  | 731.5  | 1047.3 | 3207.4 | 7036.4 | 7724.2 | 7706.6 | 5855.8 |
| 75°   | 272.0  | 280.3  | 324.7  | 443.2  | 572.6  | 594.2  | 1757.6 | 5453.0 | 6852.2 | 7137.1 | 5266.9 |
| 77.5° | 225.0  | 226.3  | 249.7  | 322.6  | 446.3  | 420.1  | 863.4  | 3783.4 | 4906.6 | 5219.9 | 3730.9 |
| 80°   | 183.4  | 184.9  | 196.1  | 226.3  | 337.7  | 310.8  | 410.0  | 2175.5 | 2747.2 | 2750.5 | 1774.2 |
| 82.5° | 146.0  | 146.3  | 158.7  | 165.4  | 242.6  | 222.3  | 234.9  | 1021.4 | 1200.5 | 1154.7 | 637.8  |
| 85°   | 102.8  | 100.6  | 155.0  | 135.8  | 158.7  | 142.6  | 129.6  | 404.3  | 496.4  | 474.8  | 199.7  |
| 87.5° | 34.3   | 35.5   | 68.9   | 87.9   | 92.6   | 80.9   | 57.7   | 155.0  | 187.4  | 185.8  | 63.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 | 1102.8 |
| 2.5°  | 1108.5 | 1098.5 | 1084.1 | 1068.0 | 1055.3 | 1042.4 | 1032.8 | 1027.9 | 1022.3 | 1017.6 | 1023.3 |
| 5°    | 1120.1 | 1101.6 | 1070.8 | 1040.6 | 1018.3 | 998.6  | 984.4  | 977.0  | 970.1  | 965.5  | 966.2  |
| 7.5°  | 1139.3 | 1109.3 | 1057.5 | 1013.3 | 982.5  | 961.2  | 946.7  | 941.7  | 937.4  | 936.2  | 937.7  |
| 10°   | 1159.7 | 1115.5 | 1039.9 | 981.3  | 946.1  | 928.5  | 922.0  | 925.4  | 928.5  | 931.2  | 934.3  |
| 12.5° | 1182.8 | 1121.1 | 1014.3 | 943.6  | 913.7  | 906.9  | 913.4  | 928.2  | 939.0  | 945.5  | 949.4  |
| 15°   | 1213.0 | 1126.1 | 984.7  | 906.0  | 885.8  | 893.6  | 915.5  | 941.2  | 960.0  | 972.0  | 973.9  |
| 17.5° | 1240.8 | 1125.8 | 946.7  | 868.0  | 863.4  | 885.8  | 918.9  | 955.0  | 980.4  | 997.4  | 1000.7 |
| 20°   | 1269.6 | 1117.4 | 902.6  | 831.0  | 840.5  | 877.6  | 920.4  | 964.0  | 994.5  | 1014.3 | 1019.0 |
| 22.5° | 1296.5 | 1102.8 | 854.1  | 797.3  | 821.4  | 866.4  | 914.6  | 958.7  | 989.3  | 1005.3 | 1010.3 |
| 25°   | 1314.6 | 1077.6 | 805.1  | 768.9  | 804.4  | 852.9  | 895.4  | 930.9  | 953.8  | 961.8  | 963.1  |
| 27.5° | 1323.9 | 1044.5 | 758.7  | 744.2  | 786.8  | 830.6  | 859.9  | 877.6  | 884.1  | 883.4  | 882.2  |
| 30°   | 1325.1 | 1001.0 | 718.9  | 724.2  | 766.5  | 797.9  | 811.8  | 808.4  | 800.1  | 785.9  | 787.1  |
| 32.5° | 1321.1 | 952.0  | 685.6  | 705.0  | 740.5  | 758.1  | 758.7  | 742.3  | 720.1  | 697.6  | 691.4  |
| 35°   | 1322.4 | 903.8  | 656.3  | 683.4  | 709.1  | 716.8  | 709.6  | 685.6  | 655.3  | 626.3  | 620.1  |
| 37.5° | 1335.9 | 861.8  | 630.9  | 658.4  | 674.1  | 676.0  | 665.8  | 640.5  | 618.3  | 589.8  | 587.4  |
| 40°   | 1368.3 | 831.8  | 606.8  | 630.3  | 639.3  | 640.2  | 625.6  | 607.8  | 609.7  | 594.5  | 594.2  |
| 42.5° | 1426.7 | 818.9  | 585.5  | 601.0  | 606.6  | 608.4  | 597.3  | 585.9  | 601.9  | 592.0  | 588.6  |
| 45°   | 1502.0 | 822.0  | 567.7  | 572.3  | 582.4  | 591.1  | 584.3  | 570.4  | 576.6  | 533.7  | 519.5  |
| 47.5° | 1589.1 | 841.8  | 553.5  | 547.6  | 565.1  | 581.6  | 571.1  | 550.0  | 528.1  | 485.6  | 477.5  |
| 50°   | 1690.9 | 872.3  | 540.5  | 523.2  | 546.4  | 568.6  | 558.1  | 528.1  | 495.2  | 474.4  | 471.7  |
| 52.5° | 1797.1 | 909.6  | 527.6  | 496.4  | 522.6  | 558.7  | 553.5  | 523.2  | 482.5  | 462.1  | 458.4  |
| 55°   | 1917.5 | 947.3  | 511.1  | 465.2  | 496.9  | 554.1  | 551.3  | 505.3  | 472.9  | 461.4  | 458.7  |
| 57.5° | 2067.1 | 990.2  | 489.5  | 432.8  | 472.9  | 537.4  | 528.8  | 494.5  | 463.0  | 454.4  | 453.4  |
| 60°   | 2262.2 | 1053.5 | 458.4  | 398.2  | 443.6  | 511.8  | 509.9  | 478.7  | 447.2  | 441.0  | 439.8  |
| 62.5° | 2554.9 | 1158.2 | 415.5  | 363.6  | 410.8  | 468.3  | 485.2  | 457.5  | 430.6  | 430.2  | 430.9  |
| 65°   | 3008.6 | 1315.5 | 368.9  | 333.4  | 377.8  | 431.6  | 456.5  | 435.5  | 413.6  | 419.8  | 420.8  |
| 67.5° | 3534.6 | 1446.1 | 323.2  | 303.7  | 344.2  | 396.6  | 430.6  | 413.6  | 391.1  | 407.1  | 407.4  |
| 70°   | 3709.6 | 1329.4 | 283.0  | 274.4  | 309.2  | 363.0  | 402.5  | 389.6  | 366.7  | 382.7  | 381.2  |
| 72°   | 3452.2 | 1073.3 | 257.1  | 252.2  | 283.0  | 335.2  | 377.5  | 367.0  | 344.5  | 355.3  | 351.2  |
| 72.5° | 3371.0 | 1023.3 | 250.6  | 246.6  | 276.0  | 328.1  | 371.1  | 361.5  | 338.9  | 348.1  | 344.5  |
| 75°   | 3007.1 | 888.7  | 215.5  | 216.3  | 240.8  | 293.6  | 334.6  | 331.5  | 308.4  | 309.2  | 308.0  |
| 77.5° | 2181.1 | 651.6  | 181.5  | 187.7  | 205.0  | 258.1  | 297.9  | 296.0  | 270.7  | 266.0  | 265.2  |
| 80°   | 1012.1 | 332.5  | 147.9  | 150.6  | 168.5  | 215.8  | 254.0  | 251.6  | 231.2  | 225.4  | 222.0  |
| 82.5° | 346.6  | 158.0  | 111.1  | 113.0  | 130.6  | 173.8  | 220.4  | 218.9  | 201.9  | 190.4  | 183.4  |
| 85°   | 123.8  | 78.7   | 77.8   | 75.9   | 93.2   | 136.8  | 192.0  | 183.7  | 158.7  | 135.2  | 134.6  |
| 87.5° | 40.1   | 33.6   | 40.1   | 39.8   | 54.3   | 92.6   | 139.5  | 118.8  | 115.2  | 95.7   | 93.8   |
| 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: SP1-2101-121-7  
 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)