

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: P386162

Luminaire Tested: **GPC-SA1D-735-U-SL3-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P386162  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-23)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA1D-735-U-SL3-HSS  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(1) 70 CRI, 3500K, 1200mA LIGHTSQUARE WITH 16 LEDS AND TYPE III SPILL  
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6650.9 lumens  
Efficiency: N/A  
Efficacy: 99.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G2

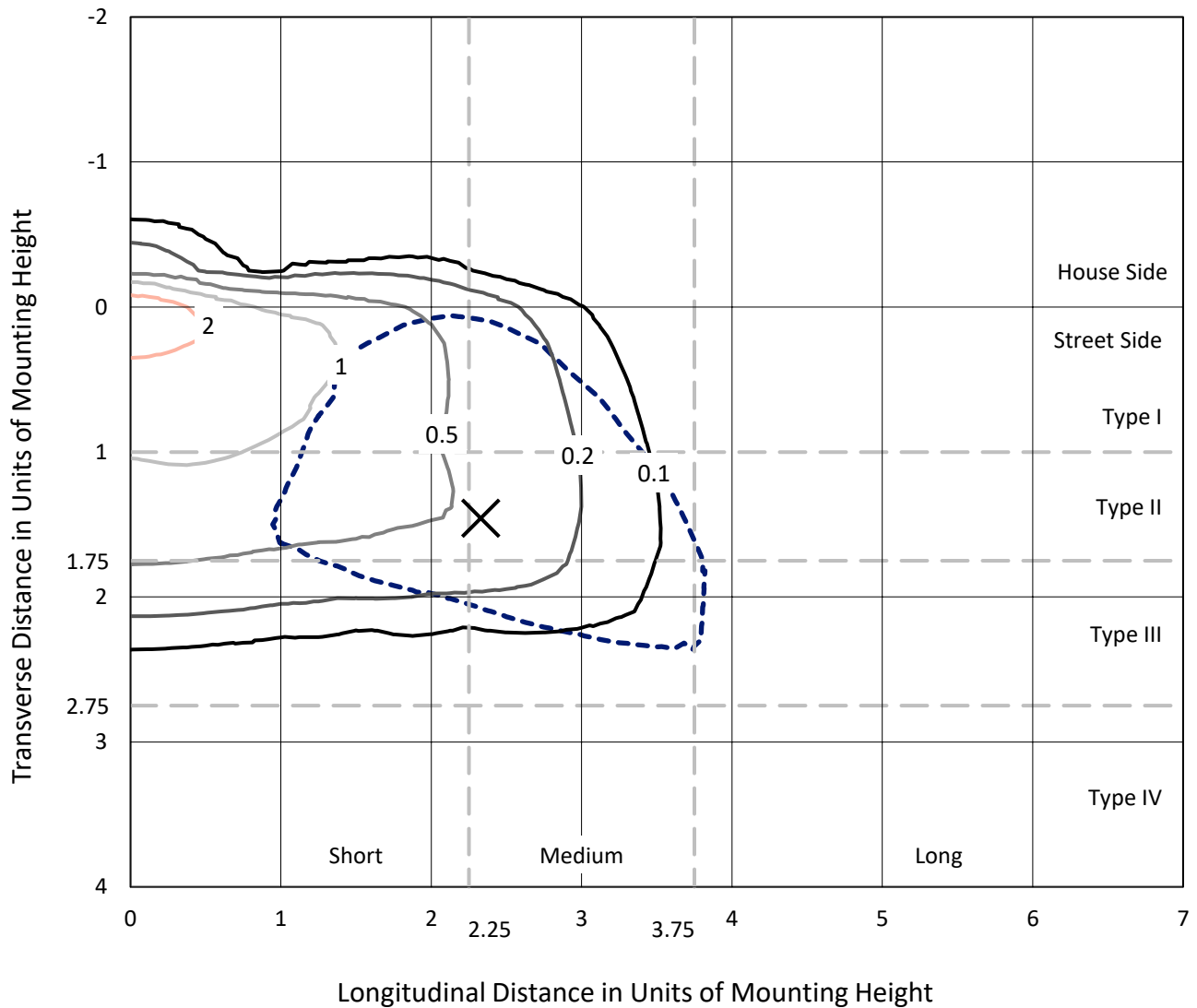
Input Watts (W): 67  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

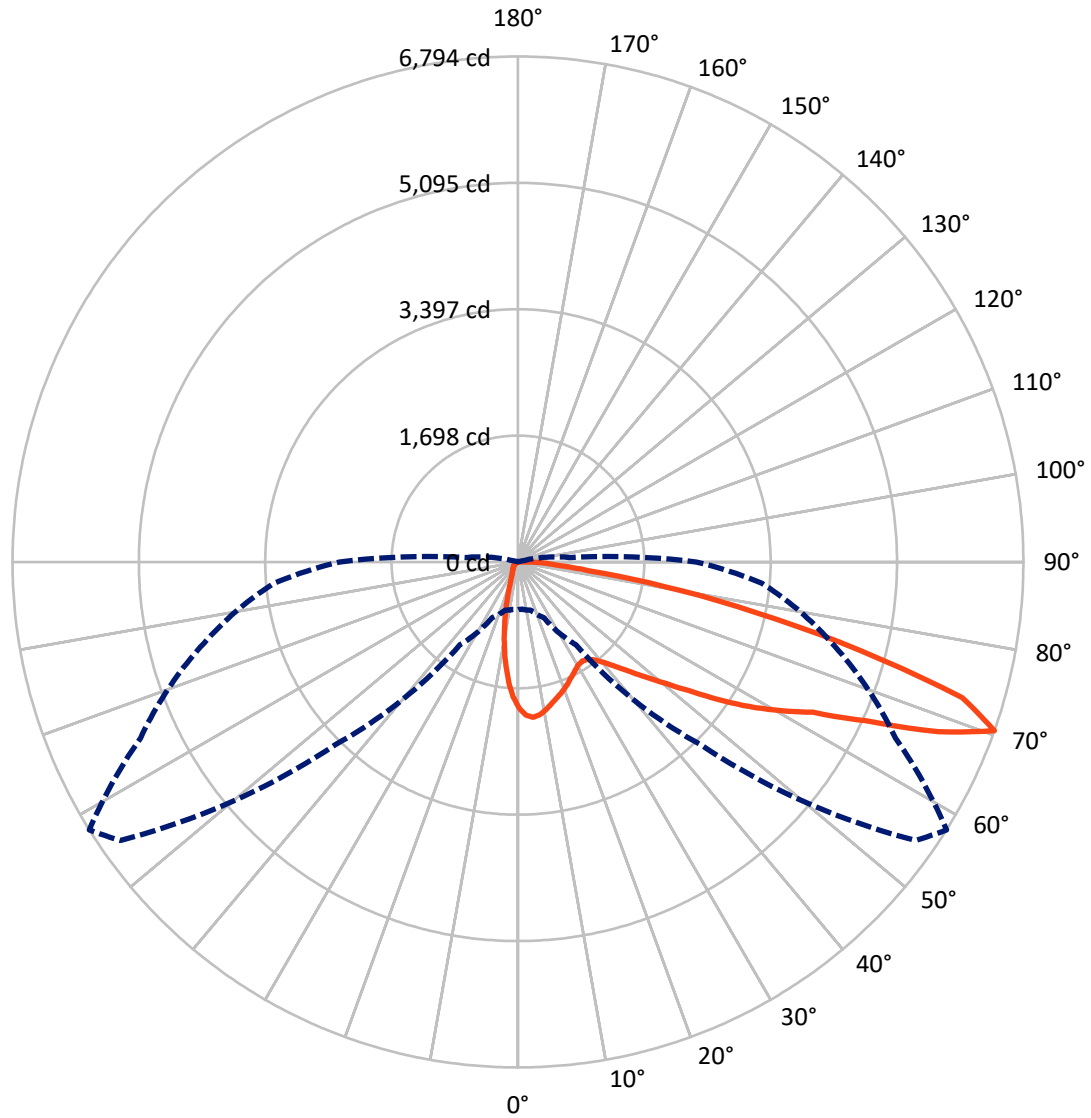
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.2 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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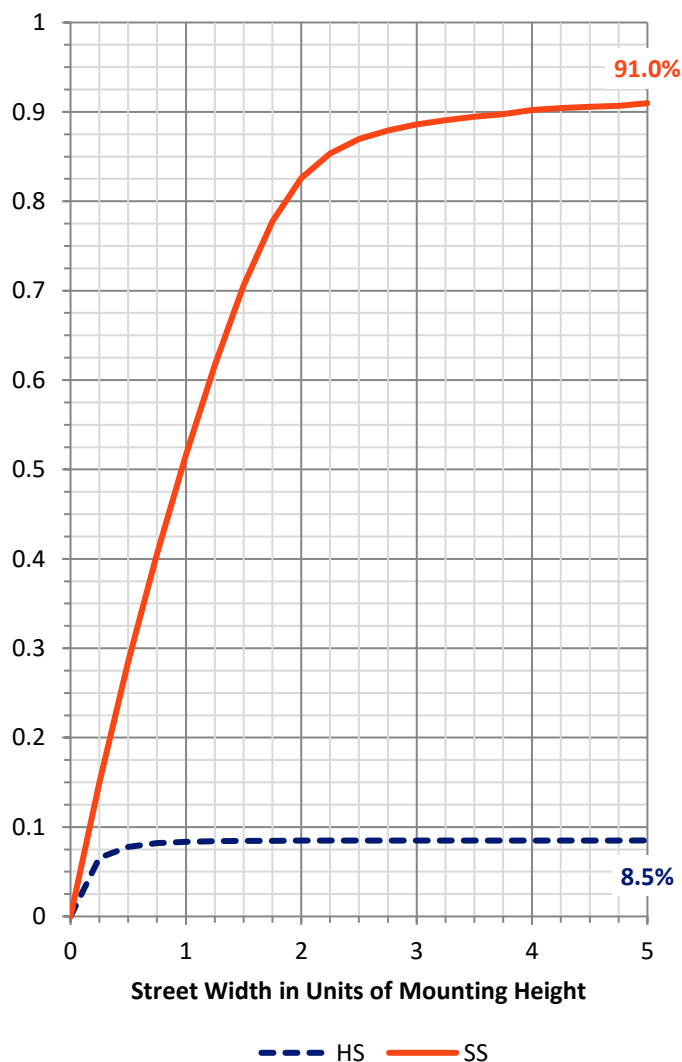
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 569.2    | 0.0    | 569.2  |
|                    | % Fixture | 8.6      | 0.0    | 8.6    |
| <b>Street Side</b> | Lumens    | 6081.7   | 0.0    | 6081.7 |
|                    | % Fixture | 91.4     | 0.0    | 91.4   |
| <b>Total</b>       | Lumens    | 6650.9   | 0.0    | 6650.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 160.7  | 2.4       |
| 10°-20°   | 337.2  | 5.1       |
| 20°-30°   | 443.3  | 6.7       |
| 30°-40°   | 587.1  | 8.8       |
| 40°-50°   | 877.5  | 13.2      |
| 50°-60°   | 1405.7 | 21.1      |
| 60°-70°   | 1771.9 | 26.6      |
| 70°-80°   | 955.8  | 14.4      |
| 80°-90°   | 111.9  | 1.7       |
| 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°    | 6650.9 | 100.0     |
| 0°-180°   | 6650.9 | 100.0     |

**Coefficient of Utilization**



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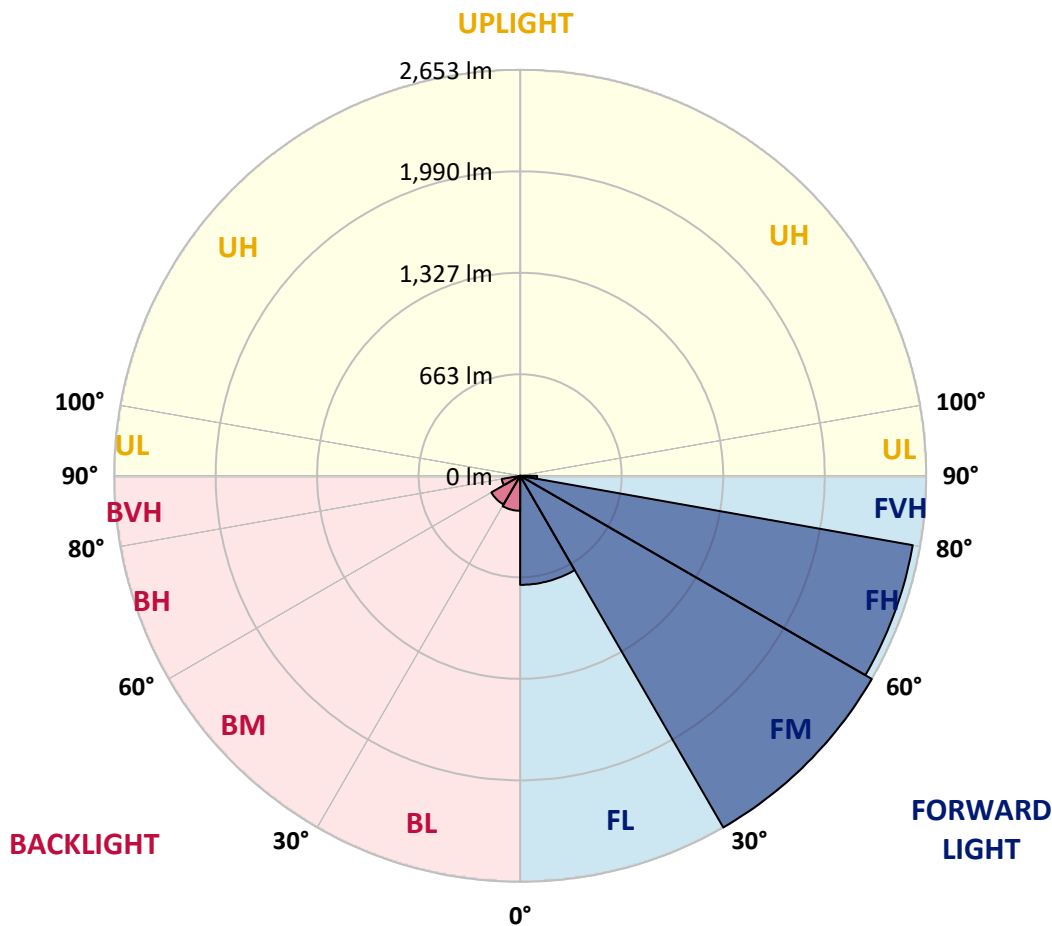
CATALOG NUMBER: GPC-SA1D-735-U-SL3-HSS

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 712.5  | 10.7      |                         |      |         |
| FM (30°-60°)   | 2653.2 | 39.9      |                         |      |         |
| FH (60°-80°)   | 2605.2 | 39.2      |                         |      | G2/5000 |
| FVH (80°-90°)  | 110.9  | 1.7       |                         |      | G2/225  |
| BL (0°-30°)    | 228.7  | 3.4       | B1/500                  |      |         |
| BM (30°-60°)   | 217.1  | 3.3       | B0/220                  |      |         |
| BH (60°-80°)   | 122.4  | 1.8       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 1.0    | 0.0       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 58°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 |
| 2.5°  | 2127.5 | 2122.3 | 2120.3 | 2117.0 | 2104.3 | 2091.8 | 2067.2 | 2060.4 | 2044.9 | 2008.0 | 1969.1 |
| 5°    | 2129.2 | 2128.9 | 2134.8 | 2133.4 | 2128.9 | 2123.1 | 2105.4 | 2096.3 | 2070.0 | 2017.4 | 1946.1 |
| 7.5°  | 2026.6 | 2031.8 | 2044.9 | 2055.4 | 2067.5 | 2083.3 | 2085.5 | 2076.6 | 2055.1 | 1998.4 | 1903.8 |
| 10°   | 1888.8 | 1897.2 | 1915.4 | 1936.2 | 1967.9 | 1999.5 | 2027.7 | 2026.6 | 2019.1 | 1963.2 | 1853.0 |
| 12.5° | 1750.8 | 1760.5 | 1781.6 | 1812.3 | 1857.4 | 1908.8 | 1959.1 | 1966.1 | 1978.5 | 1931.8 | 1805.9 |
| 15°   | 1630.0 | 1638.3 | 1659.1 | 1696.6 | 1752.5 | 1821.7 | 1895.5 | 1908.2 | 1940.3 | 1907.2 | 1766.6 |
| 17.5° | 1527.5 | 1532.6 | 1547.8 | 1589.6 | 1654.4 | 1738.2 | 1834.1 | 1859.0 | 1906.9 | 1887.8 | 1732.6 |
| 20°   | 1455.8 | 1456.6 | 1466.6 | 1495.9 | 1560.6 | 1654.4 | 1770.5 | 1806.2 | 1871.5 | 1871.2 | 1697.5 |
| 22.5° | 1420.4 | 1417.6 | 1419.5 | 1436.4 | 1484.0 | 1574.4 | 1706.9 | 1749.2 | 1839.6 | 1857.1 | 1661.8 |
| 25°   | 1413.8 | 1411.5 | 1406.0 | 1408.2 | 1437.0 | 1504.4 | 1642.7 | 1691.7 | 1811.7 | 1848.5 | 1630.9 |
| 27.5° | 1434.5 | 1436.7 | 1427.3 | 1417.4 | 1419.5 | 1459.1 | 1585.8 | 1642.4 | 1789.1 | 1848.5 | 1609.0 |
| 30°   | 1476.3 | 1477.4 | 1470.4 | 1457.5 | 1440.0 | 1446.4 | 1546.2 | 1602.9 | 1777.7 | 1861.2 | 1595.2 |
| 32.5° | 1522.5 | 1528.5 | 1527.7 | 1517.2 | 1492.3 | 1466.6 | 1536.8 | 1588.5 | 1776.9 | 1889.4 | 1593.8 |
| 35°   | 1579.7 | 1586.6 | 1598.2 | 1596.0 | 1570.0 | 1527.7 | 1568.9 | 1609.6 | 1793.2 | 1935.9 | 1608.7 |
| 37.5° | 1640.6 | 1651.1 | 1675.9 | 1687.8 | 1670.9 | 1623.1 | 1640.8 | 1669.9 | 1836.9 | 2011.1 | 1646.6 |
| 40°   | 1699.5 | 1711.3 | 1756.7 | 1803.4 | 1790.7 | 1741.4 | 1749.8 | 1773.0 | 1914.6 | 2119.3 | 1718.5 |
| 42.5° | 1757.2 | 1774.9 | 1841.6 | 1918.4 | 1933.6 | 1894.4 | 1898.8 | 1917.4 | 2029.9 | 2268.1 | 1836.0 |
| 45°   | 1826.4 | 1846.3 | 1945.0 | 2039.9 | 2080.6 | 2063.4 | 2082.2 | 2094.4 | 2180.6 | 2464.7 | 1994.5 |
| 47.5° | 1927.8 | 1950.8 | 2071.9 | 2180.1 | 2251.4 | 2262.5 | 2300.4 | 2308.4 | 2371.2 | 2693.6 | 2201.1 |
| 50°   | 2125.8 | 2132.2 | 2241.8 | 2339.9 | 2442.8 | 2509.2 | 2552.3 | 2558.4 | 2601.8 | 2944.0 | 2459.1 |
| 52.5° | 2375.1 | 2379.2 | 2441.1 | 2507.0 | 2623.9 | 2759.5 | 2860.5 | 2869.0 | 2878.1 | 3187.8 | 2713.8 |
| 55°   | 2622.6 | 2622.0 | 2663.0 | 2701.7 | 2835.6 | 3032.5 | 3251.4 | 3256.7 | 3191.2 | 3419.3 | 2908.6 |
| 57.5° | 2777.1 | 2792.1 | 2854.3 | 2904.1 | 3091.1 | 3343.6 | 3647.5 | 3666.8 | 3520.0 | 3590.8 | 3101.0 |
| 60°   | 2727.9 | 2735.1 | 2873.1 | 3057.4 | 3409.3 | 3785.8 | 4048.2 | 4053.2 | 3767.3 | 3762.0 | 3344.3 |
| 62.5° | 2324.2 | 2328.0 | 2544.8 | 2924.6 | 3570.6 | 4359.4 | 4531.6 | 4450.6 | 4051.5 | 3999.6 | 3635.5 |
| 65°   | 1592.9 | 1618.1 | 1799.2 | 2268.5 | 3274.4 | 4719.1 | 5280.0 | 5145.9 | 4484.9 | 4341.9 | 3898.9 |
| 67.5° | 938.1  | 932.8  | 1022.4 | 1368.1 | 2404.9 | 4480.2 | 6226.7 | 6093.4 | 5075.9 | 4571.2 | 3821.7 |
| 70°   | 640.8  | 637.2  | 671.5  | 828.3  | 1357.6 | 3475.5 | 6524.5 | 6793.6 | 5597.8 | 4416.8 | 3289.1 |
| 72.5° | 457.4  | 459.4  | 510.0  | 643.6  | 852.3  | 2025.0 | 5610.7 | 6247.6 | 5434.3 | 3850.5 | 2500.1 |
| 75°   | 310.6  | 315.8  | 388.3  | 527.9  | 747.3  | 1030.1 | 3981.5 | 4749.3 | 4425.2 | 2798.5 | 1437.0 |
| 77.5° | 167.0  | 172.8  | 258.3  | 425.4  | 675.6  | 715.7  | 2561.2 | 3268.6 | 2779.7 | 1258.0 | 416.5  |
| 80°   | 69.7   | 73.0   | 120.9  | 309.2  | 583.8  | 628.6  | 1507.0 | 1982.0 | 1184.5 | 248.1  | 92.9   |
| 82.5° | 30.2   | 31.8   | 50.4   | 184.5  | 436.4  | 530.7  | 797.8  | 953.6  | 358.9  | 54.5   | 46.8   |
| 85°   | 5.8    | 6.1    | 20.8   | 97.6   | 278.5  | 299.5  | 517.1  | 506.9  | 161.2  | 23.5   | 34.0   |
| 87.5° | 0.0    | 0.0    | 5.0    | 30.7   | 81.8   | 163.2  | 315.5  | 311.7  | 54.8   | 11.4   | 12.7   |
| 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°    | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 | 1964.6 |
| 2.5°  | 1949.1 | 1930.1 | 1890.0 | 1840.5 | 1802.6 | 1760.8 | 1727.6 | 1685.6 | 1667.3 | 1668.2 | 1658.2 |
| 5°    | 1905.5 | 1866.2 | 1777.4 | 1665.5 | 1579.1 | 1490.1 | 1413.5 | 1337.1 | 1292.0 | 1277.4 | 1263.6 |
| 7.5°  | 1843.0 | 1780.7 | 1639.1 | 1466.6 | 1320.5 | 1177.8 | 1053.7 | 944.5  | 875.3  | 841.6  | 829.1  |
| 10°   | 1772.4 | 1685.1 | 1480.1 | 1252.8 | 1044.2 | 851.3  | 690.3  | 550.4  | 494.5  | 456.5  | 446.9  |
| 12.5° | 1710.4 | 1592.1 | 1324.7 | 1033.5 | 786.0  | 553.1  | 399.6  | 312.5  | 274.6  | 259.6  | 257.2  |
| 15°   | 1652.1 | 1505.3 | 1175.1 | 834.9  | 544.3  | 340.4  | 254.2  | 224.6  | 215.7  | 213.2  | 213.2  |
| 17.5° | 1597.1 | 1422.6 | 1028.8 | 639.4  | 360.1  | 238.7  | 210.4  | 203.8  | 201.0  | 200.7  | 201.0  |
| 20°   | 1539.6 | 1340.0 | 885.0  | 468.5  | 251.4  | 202.2  | 194.5  | 190.8  | 190.0  | 190.0  | 190.0  |
| 22.5° | 1484.5 | 1257.2 | 745.0  | 334.6  | 201.6  | 184.5  | 180.6  | 178.1  | 177.3  | 177.0  | 176.4  |
| 25°   | 1431.7 | 1178.7 | 608.4  | 236.4  | 177.0  | 169.0  | 165.6  | 162.3  | 159.9  | 158.5  | 157.6  |
| 27.5° | 1388.3 | 1108.7 | 481.3  | 189.8  | 159.9  | 152.9  | 148.8  | 143.8  | 137.7  | 135.0  | 133.9  |
| 30°   | 1353.8 | 1044.8 | 370.9  | 160.2  | 143.8  | 136.9  | 130.6  | 121.9  | 113.1  | 108.4  | 108.1  |
| 32.5° | 1326.6 | 982.0  | 281.5  | 141.6  | 129.4  | 120.9  | 111.7  | 101.0  | 90.7   | 85.5   | 85.2   |
| 35°   | 1313.4 | 926.7  | 215.1  | 128.0  | 116.7  | 106.0  | 94.6   | 82.7   | 72.7   | 67.7   | 67.2   |
| 37.5° | 1322.2 | 880.0  | 167.9  | 116.7  | 106.0  | 93.5   | 80.2   | 67.7   | 58.9   | 54.5   | 54.2   |
| 40°   | 1354.6 | 850.2  | 136.3  | 107.0  | 96.8   | 81.5   | 67.2   | 55.6   | 48.1   | 44.5   | 44.2   |
| 42.5° | 1423.5 | 839.1  | 116.4  | 99.0   | 87.9   | 70.5   | 55.9   | 45.9   | 39.0   | 36.5   | 36.0   |
| 45°   | 1538.4 | 855.4  | 102.9  | 91.3   | 78.8   | 60.0   | 46.2   | 37.6   | 31.6   | 29.6   | 29.3   |
| 47.5° | 1691.7 | 898.2  | 93.2   | 83.8   | 70.5   | 50.6   | 38.4   | 30.4   | 25.7   | 23.8   | 23.5   |
| 50°   | 1889.1 | 966.3  | 85.2   | 76.4   | 62.8   | 42.8   | 31.8   | 24.0   | 19.9   | 18.5   | 18.5   |
| 52.5° | 2104.1 | 1047.3 | 78.0   | 69.4   | 55.0   | 35.7   | 25.7   | 18.5   | 15.8   | 14.1   | 14.1   |
| 55°   | 2281.6 | 1118.1 | 70.3   | 64.2   | 45.7   | 29.6   | 19.6   | 14.1   | 11.6   | 10.8   | 10.8   |
| 57.5° | 2458.9 | 1193.6 | 61.4   | 55.0   | 36.5   | 24.0   | 14.9   | 10.5   | 8.5    | 8.0    | 8.0    |
| 60°   | 2688.6 | 1285.9 | 52.8   | 44.8   | 28.7   | 18.2   | 11.1   | 7.4    | 6.4    | 6.1    | 6.1    |
| 62.5° | 2941.4 | 1340.1 | 45.1   | 36.0   | 22.4   | 13.5   | 8.0    | 5.0    | 4.7    | 4.7    | 4.4    |
| 65°   | 3096.1 | 1263.6 | 37.9   | 28.7   | 17.4   | 10.2   | 5.3    | 3.6    | 4.1    | 3.9    | 3.3    |
| 67.5° | 2898.9 | 989.3  | 31.0   | 22.4   | 13.5   | 7.7    | 3.3    | 2.4    | 4.4    | 3.6    | 2.7    |
| 70°   | 2400.2 | 692.5  | 24.0   | 15.8   | 10.8   | 6.7    | 2.3    | 1.7    | 4.7    | 3.6    | 2.3    |
| 72.5° | 1796.2 | 463.5  | 19.1   | 10.5   | 8.0    | 5.8    | 2.0    | 0.8    | 4.1    | 3.0    | 2.0    |
| 75°   | 981.5  | 186.7  | 15.2   | 6.7    | 5.0    | 4.1    | 1.4    | 0.6    | 2.7    | 2.3    | 1.4    |
| 77.5° | 258.3  | 49.2   | 11.1   | 4.4    | 2.7    | 1.7    | 0.8    | 0.3    | 1.4    | 1.1    | 0.6    |
| 80°   | 65.9   | 19.1   | 7.2    | 3.0    | 2.0    | 0.8    | 0.0    | 0.0    | 0.3    | 0.0    | 0.0    |
| 82.5° | 35.1   | 8.0    | 4.4    | 2.3    | 1.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 26.6   | 5.3    | 2.4    | 1.4    | 0.3    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 10.2   | 1.7    | 0.8    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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



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

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)