

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: P437869

Luminaire Tested: **ISC-SA1F-740-U-T3**

Issue Date: 12/9/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P437869  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/9/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: ISC-SA1F-740-U-T3  
Description: IMPACT ELITE LED CYLINDER LUMINAIRE  
(1) 70 CRI, 4000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND TYPE III OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7827 lumens  
Efficiency: N/A  
Efficacy: 118.6 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

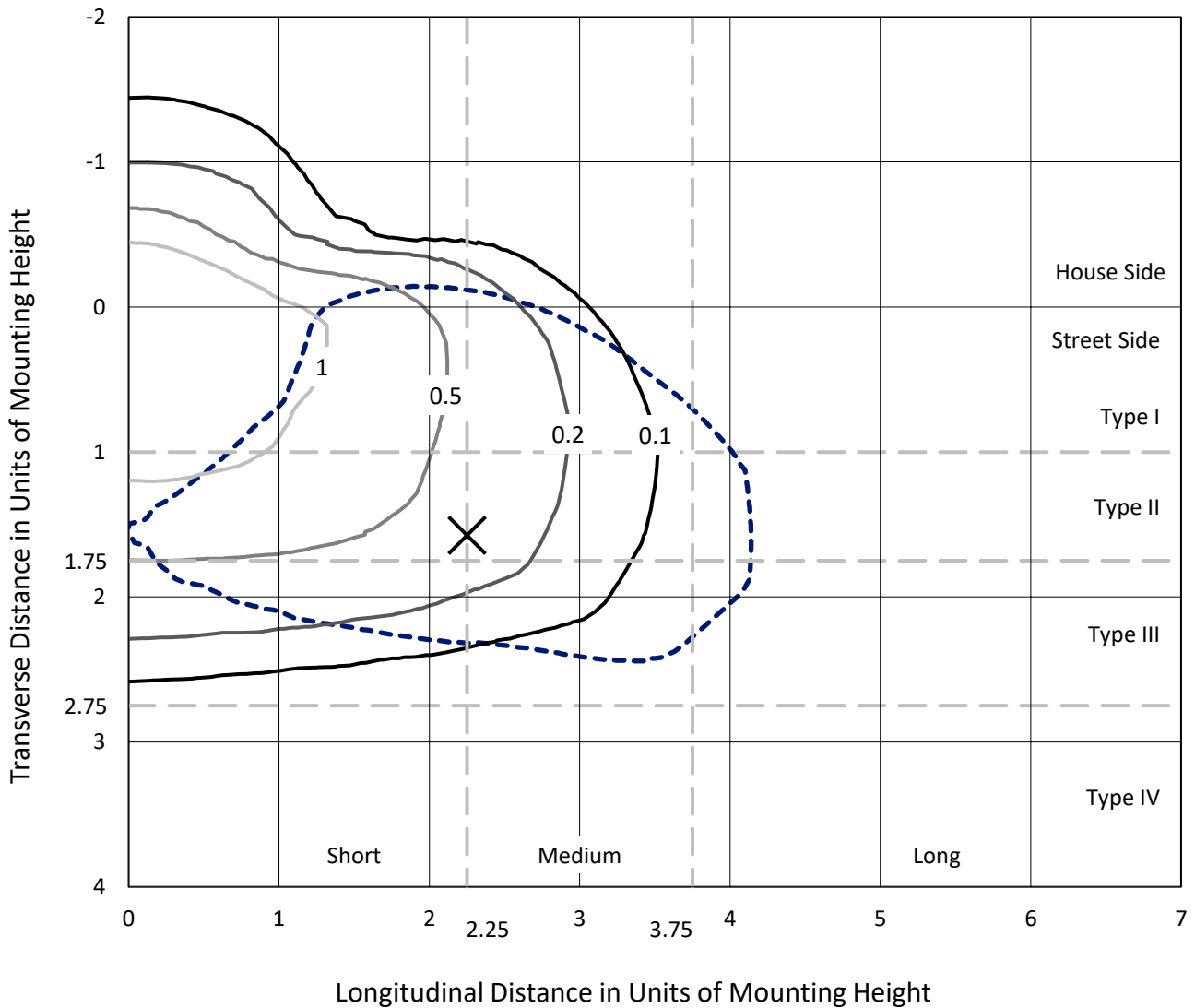
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P437869  
 CATALOG NUMBER: ISC-SA1F-740-U-T3

### Iso-Footcandle Lines of Horizontal Illumination

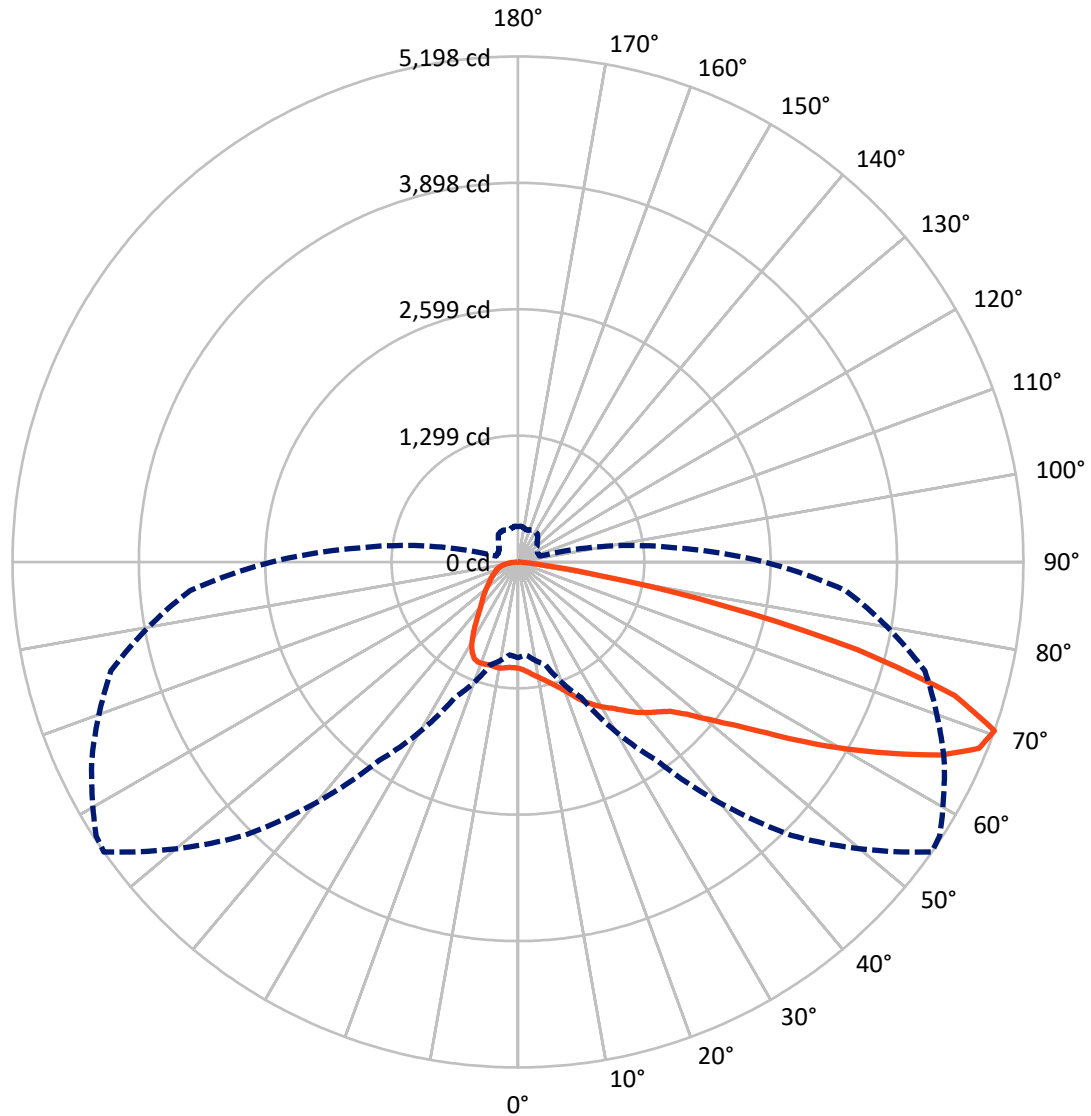
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 fc  
 Type III - Medium - N/A

REPORT NUMBER: P437869  
CATALOG NUMBER: ISC-SA1F-740-U-T3

### Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

REPORT NUMBER: P437869

CATALOG NUMBER: ISC-SA1F-740-U-T3

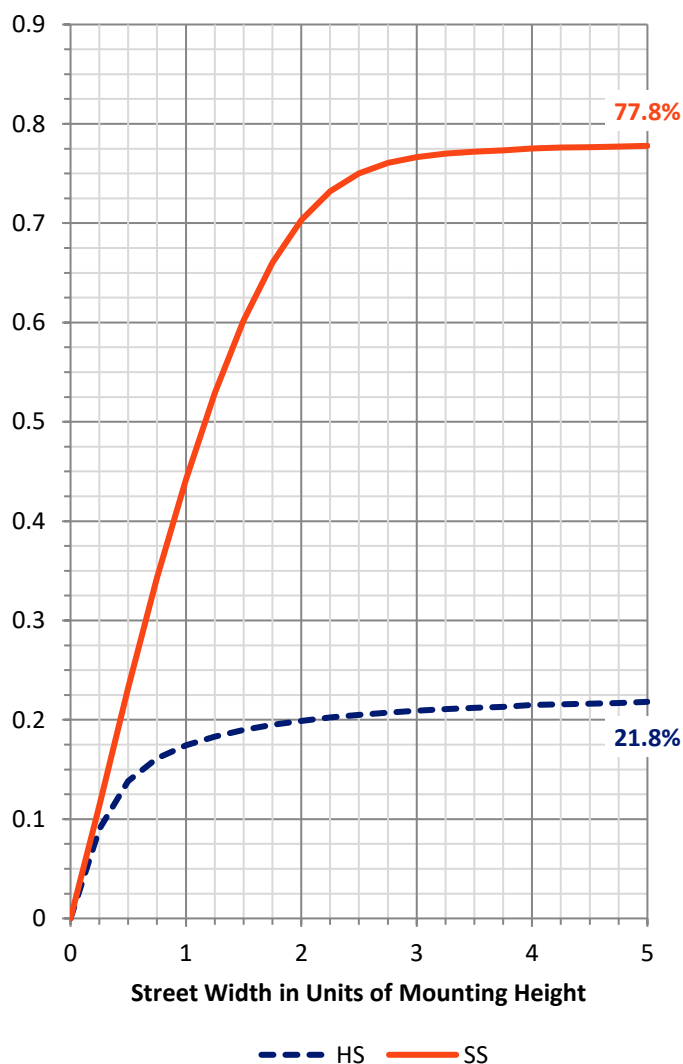
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1731.2   | 0.0    | 1731.2 |
|                    | % Fixture | 22.1     | 0.0    | 22.1   |
| <b>Street Side</b> | Lumens    | 6095.8   | 0.0    | 6095.8 |
|                    | % Fixture | 77.9     | 0.0    | 77.9   |
| <b>Total</b>       | Lumens    | 7827.0   | 0.0    | 7827.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 107.7  | 1.4       |
| 10°-20°   | 342.7  | 4.4       |
| 20°-30°   | 595.9  | 7.6       |
| 30°-40°   | 840.0  | 10.7      |
| 40°-50°   | 1113.2 | 14.2      |
| 50°-60°   | 1621.8 | 20.7      |
| 60°-70°   | 2023.9 | 25.9      |
| 70°-80°   | 1077.9 | 13.8      |
| 80°-90°   | 103.8  | 1.3       |
| 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°    | 7827.0 | 100.0     |
| 0°-180°   | 7827.0 | 100.0     |

**Coefficient of Utilization**

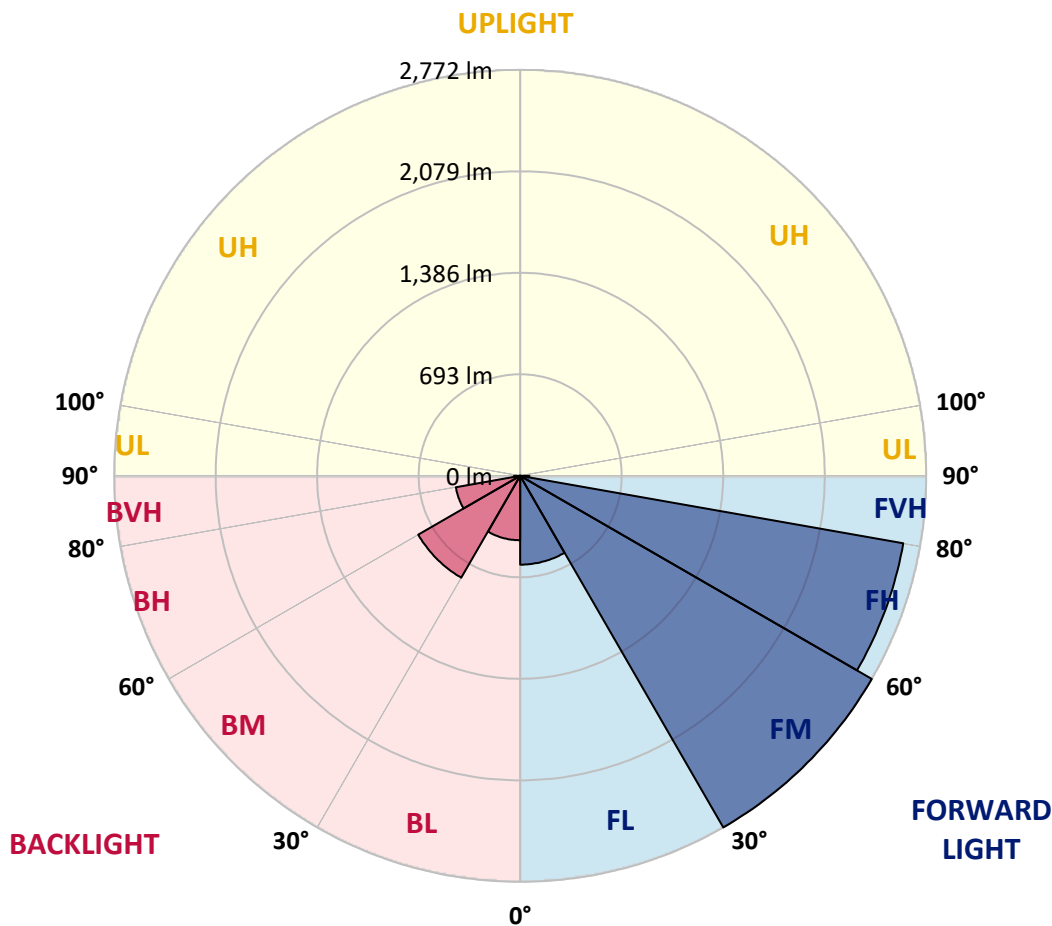


REPORT NUMBER: P437869  
 CATALOG NUMBER: ISC-SA1F-740-U-T3

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 606.3  | 7.7       |                         |      |         |
| FM (30°-60°)   | 2771.8 | 35.4      |                         |      |         |
| FH (60°-80°)   | 2655.7 | 33.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 62.0   | 0.8       |                         |      | G1/100  |
| BL (0°-30°)    | 440.0  | 5.6       | B1/500                  |      |         |
| BM (30°-60°)   | 803.3  | 10.3      | B1/1000                 |      |         |
| BH (60°-80°)   | 446.1  | 5.7       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 41.8   | 0.5       |                         |      | 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





REPORT NUMBER: P437869

CATALOG NUMBER: ISC-SA1F-740-U-T3

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 57°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 |
| 2.5°  | 1129.7 | 1126.9 | 1126.9 | 1124.1 | 1121.2 | 1118.4 | 1112.8 | 1107.2 | 1107.2 | 1101.5 | 1101.5 |
| 5°    | 1157.9 | 1152.2 | 1155.0 | 1152.2 | 1152.2 | 1146.6 | 1138.1 | 1138.1 | 1135.3 | 1121.2 | 1110.0 |
| 7.5°  | 1186.0 | 1183.2 | 1183.2 | 1186.0 | 1183.2 | 1177.6 | 1174.8 | 1172.0 | 1160.7 | 1143.8 | 1126.9 |
| 10°   | 1225.5 | 1225.5 | 1225.5 | 1222.7 | 1222.7 | 1217.0 | 1208.6 | 1208.6 | 1194.5 | 1174.8 | 1155.0 |
| 12.5° | 1284.6 | 1281.8 | 1279.0 | 1279.0 | 1270.6 | 1259.3 | 1250.8 | 1250.8 | 1242.4 | 1211.4 | 1186.0 |
| 15°   | 1352.3 | 1343.8 | 1338.2 | 1338.2 | 1326.9 | 1307.2 | 1298.7 | 1301.5 | 1293.1 | 1256.5 | 1219.8 |
| 17.5° | 1419.9 | 1419.9 | 1414.2 | 1400.1 | 1386.1 | 1372.0 | 1352.3 | 1357.9 | 1349.4 | 1312.8 | 1264.9 |
| 20°   | 1481.8 | 1476.2 | 1476.2 | 1467.8 | 1448.0 | 1431.1 | 1419.9 | 1417.0 | 1411.4 | 1372.0 | 1315.6 |
| 22.5° | 1549.5 | 1546.6 | 1538.2 | 1532.6 | 1518.5 | 1510.0 | 1504.4 | 1504.4 | 1481.8 | 1428.3 | 1355.1 |
| 25°   | 1631.2 | 1628.3 | 1628.3 | 1605.8 | 1594.5 | 1580.4 | 1588.9 | 1580.4 | 1569.2 | 1490.3 | 1397.3 |
| 27.5° | 1712.9 | 1712.9 | 1710.0 | 1698.8 | 1667.8 | 1659.3 | 1665.0 | 1659.3 | 1656.5 | 1549.5 | 1436.8 |
| 30°   | 1800.2 | 1797.4 | 1788.9 | 1786.1 | 1755.1 | 1732.6 | 1729.8 | 1718.5 | 1718.5 | 1603.0 | 1464.9 |
| 32.5° | 1873.4 | 1870.6 | 1876.3 | 1865.0 | 1845.3 | 1814.3 | 1794.6 | 1794.6 | 1774.8 | 1656.5 | 1498.7 |
| 35°   | 1941.0 | 1946.7 | 1946.7 | 1941.0 | 1924.1 | 1893.2 | 1873.4 | 1879.1 | 1850.9 | 1704.4 | 1541.0 |
| 37.5° | 2017.1 | 2011.5 | 2003.0 | 1997.4 | 1974.9 | 1960.8 | 1960.8 | 1966.4 | 1924.1 | 1755.1 | 1597.3 |
| 40°   | 2034.0 | 2048.1 | 2067.8 | 2045.3 | 2034.0 | 2031.2 | 2036.8 | 2022.7 | 1980.5 | 1834.0 | 1693.1 |
| 42.5° | 2067.8 | 2079.1 | 2115.7 | 2107.3 | 2098.8 | 2107.3 | 2107.3 | 2087.5 | 2067.8 | 1941.0 | 1822.7 |
| 45°   | 2152.3 | 2172.1 | 2200.2 | 2203.0 | 2200.2 | 2214.3 | 2189.0 | 2186.1 | 2183.3 | 2096.0 | 1997.4 |
| 47.5° | 2245.3 | 2267.8 | 2332.6 | 2324.2 | 2355.2 | 2383.3 | 2338.3 | 2335.5 | 2343.9 | 2301.6 | 2219.9 |
| 50°   | 2355.2 | 2377.7 | 2459.4 | 2490.4 | 2574.9 | 2625.6 | 2543.9 | 2507.3 | 2566.5 | 2563.6 | 2501.7 |
| 52.5° | 2481.9 | 2510.1 | 2566.5 | 2673.5 | 2817.2 | 2870.7 | 2783.4 | 2752.4 | 2822.8 | 2856.6 | 2800.3 |
| 55°   | 2569.3 | 2591.8 | 2679.2 | 2845.4 | 3079.2 | 3149.6 | 3098.9 | 3070.7 | 3146.8 | 3175.0 | 3115.8 |
| 57.5° | 2600.3 | 2605.9 | 2735.5 | 2997.5 | 3321.5 | 3501.8 | 3493.3 | 3473.6 | 3442.6 | 3513.0 | 3496.1 |
| 60°   | 2546.7 | 2577.7 | 2743.9 | 3065.1 | 3538.4 | 3879.3 | 3910.3 | 3865.2 | 3825.8 | 3842.7 | 3786.3 |
| 62.5° | 2476.3 | 2501.7 | 2676.3 | 3073.6 | 3684.9 | 4220.2 | 4335.7 | 4285.0 | 4186.4 | 4141.3 | 4008.9 |
| 65°   | 2228.4 | 2228.4 | 2400.2 | 2901.7 | 3659.5 | 4499.1 | 4783.6 | 4696.3 | 4516.0 | 4355.4 | 4000.4 |
| 67.5° | 1704.4 | 1696.0 | 1862.2 | 2383.3 | 3301.8 | 4527.2 | 5113.2 | 5068.1 | 4778.0 | 4437.1 | 3842.7 |
| 70°   | 983.2  | 957.8  | 1095.9 | 1538.2 | 2493.2 | 3975.1 | 5197.7 | 5172.4 | 4837.1 | 4332.8 | 3383.5 |
| 72.5° | 340.9  | 363.4  | 453.6  | 653.6  | 1372.0 | 2862.3 | 4696.3 | 4749.8 | 4555.4 | 3935.6 | 2718.6 |
| 75°   | 177.5  | 177.5  | 208.5  | 284.5  | 580.3  | 1476.2 | 3608.8 | 3775.0 | 3817.3 | 3293.3 | 1941.0 |
| 77.5° | 129.6  | 132.4  | 149.3  | 183.1  | 276.1  | 566.3  | 2166.4 | 2324.2 | 2642.5 | 2267.8 | 1121.2 |
| 80°   | 87.3   | 90.2   | 107.1  | 121.1  | 169.0  | 219.7  | 864.9  | 949.4  | 1310.0 | 1014.2 | 433.8  |
| 82.5° | 64.8   | 67.6   | 67.6   | 70.4   | 93.0   | 101.4  | 228.2  | 281.7  | 450.8  | 301.4  | 154.9  |
| 85°   | 14.1   | 14.1   | 28.2   | 28.2   | 28.2   | 28.2   | 50.7   | 56.3   | 84.5   | 90.2   | 50.7   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 2.8    | 2.8    | 5.6    | 5.6    | 5.6    | 8.5    | 8.5    |
| 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: P437869

CATALOG NUMBER: ISC-SA1F-740-U-T3

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 |
| 2.5°  | 1098.7 | 1095.9 | 1093.1 | 1090.3 | 1087.4 | 1084.6 | 1081.8 | 1084.6 | 1084.6 | 1090.3 | 1093.1 |
| 5°    | 1107.2 | 1098.7 | 1095.9 | 1090.3 | 1087.4 | 1087.4 | 1087.4 | 1090.3 | 1093.1 | 1095.9 | 1098.7 |
| 7.5°  | 1121.2 | 1118.4 | 1110.0 | 1098.7 | 1095.9 | 1095.9 | 1090.3 | 1090.3 | 1090.3 | 1095.9 | 1095.9 |
| 10°   | 1146.6 | 1138.1 | 1126.9 | 1115.6 | 1107.2 | 1090.3 | 1076.2 | 1064.9 | 1070.5 | 1079.0 | 1079.0 |
| 12.5° | 1174.8 | 1160.7 | 1146.6 | 1126.9 | 1104.3 | 1076.2 | 1062.1 | 1064.9 | 1064.9 | 1073.4 | 1076.2 |
| 15°   | 1211.4 | 1200.1 | 1169.1 | 1135.3 | 1095.9 | 1073.4 | 1067.7 | 1062.1 | 1062.1 | 1067.7 | 1073.4 |
| 17.5° | 1250.8 | 1231.1 | 1191.7 | 1141.0 | 1101.5 | 1076.2 | 1064.9 | 1042.4 | 1031.1 | 1028.3 | 1033.9 |
| 20°   | 1287.5 | 1264.9 | 1211.4 | 1146.6 | 1107.2 | 1073.4 | 1033.9 | 997.3  | 969.1  | 963.5  | 957.8  |
| 22.5° | 1318.4 | 1290.3 | 1225.5 | 1157.9 | 1107.2 | 1045.2 | 977.6  | 924.0  | 884.6  | 873.3  | 879.0  |
| 25°   | 1352.3 | 1310.0 | 1242.4 | 1169.1 | 1087.4 | 988.8  | 895.9  | 831.1  | 791.6  | 774.7  | 774.7  |
| 27.5° | 1380.4 | 1338.2 | 1259.3 | 1160.7 | 1036.7 | 912.8  | 805.7  | 740.9  | 709.9  | 693.0  | 690.2  |
| 30°   | 1405.8 | 1360.7 | 1293.1 | 1135.3 | 963.5  | 808.5  | 715.6  | 670.5  | 650.8  | 631.1  | 633.9  |
| 32.5° | 1439.6 | 1400.1 | 1318.4 | 1081.8 | 864.9  | 712.8  | 642.3  | 619.8  | 600.1  | 586.0  | 591.6  |
| 35°   | 1487.5 | 1464.9 | 1326.9 | 1014.2 | 763.5  | 645.1  | 597.2  | 571.9  | 555.0  | 535.3  | 535.3  |
| 37.5° | 1555.1 | 1535.4 | 1298.7 | 912.8  | 673.3  | 594.4  | 560.6  | 526.8  | 498.6  | 476.1  | 470.5  |
| 40°   | 1636.8 | 1608.6 | 1250.8 | 800.1  | 602.9  | 560.6  | 529.6  | 487.4  | 447.9  | 416.9  | 411.3  |
| 42.5° | 1766.4 | 1684.7 | 1180.4 | 684.6  | 552.2  | 532.4  | 490.2  | 436.7  | 397.2  | 374.7  | 369.1  |
| 45°   | 1904.4 | 1772.0 | 1079.0 | 586.0  | 512.7  | 498.6  | 450.8  | 397.2  | 369.1  | 352.1  | 349.3  |
| 47.5° | 2079.1 | 1867.8 | 983.2  | 512.7  | 467.7  | 464.8  | 408.5  | 374.7  | 352.1  | 340.9  | 338.1  |
| 50°   | 2310.1 | 1988.9 | 887.4  | 456.4  | 428.2  | 419.8  | 388.8  | 360.6  | 343.7  | 335.2  | 332.4  |
| 52.5° | 2577.7 | 2129.8 | 811.4  | 414.1  | 391.6  | 386.0  | 377.5  | 355.0  | 343.7  | 335.2  | 332.4  |
| 55°   | 2831.3 | 2276.3 | 729.7  | 374.7  | 360.6  | 366.2  | 371.9  | 355.0  | 346.5  | 340.9  | 335.2  |
| 57.5° | 3110.2 | 2400.2 | 636.7  | 343.7  | 335.2  | 349.3  | 366.2  | 357.8  | 352.1  | 343.7  | 340.9  |
| 60°   | 3282.0 | 2487.6 | 512.7  | 315.5  | 315.5  | 335.2  | 357.8  | 352.1  | 340.9  | 340.9  | 340.9  |
| 62.5° | 3358.1 | 2473.5 | 405.7  | 287.4  | 293.0  | 318.3  | 343.7  | 338.1  | 329.6  | 343.7  | 343.7  |
| 65°   | 3259.5 | 2312.9 | 329.6  | 262.0  | 270.5  | 295.8  | 329.6  | 329.6  | 329.6  | 352.1  | 352.1  |
| 67.5° | 3003.1 | 2070.6 | 270.5  | 239.5  | 247.9  | 278.9  | 329.6  | 349.3  | 346.5  | 371.9  | 371.9  |
| 70°   | 2535.5 | 1642.4 | 233.8  | 222.6  | 233.8  | 278.9  | 349.3  | 360.6  | 340.9  | 369.1  | 363.4  |
| 72.5° | 1932.6 | 1146.6 | 208.5  | 205.7  | 219.7  | 270.5  | 352.1  | 346.5  | 321.2  | 329.6  | 321.2  |
| 75°   | 1270.6 | 695.8  | 183.1  | 188.8  | 194.4  | 239.5  | 335.2  | 324.0  | 293.0  | 287.4  | 281.7  |
| 77.5° | 698.7  | 349.3  | 160.6  | 169.0  | 169.0  | 202.8  | 304.3  | 278.9  | 253.5  | 239.5  | 233.8  |
| 80°   | 278.9  | 177.5  | 140.9  | 149.3  | 138.0  | 163.4  | 228.2  | 216.9  | 194.4  | 183.1  | 177.5  |
| 82.5° | 126.8  | 98.6   | 118.3  | 124.0  | 104.2  | 121.1  | 169.0  | 163.4  | 146.5  | 126.8  | 121.1  |
| 85°   | 47.9   | 56.3   | 90.2   | 84.5   | 73.2   | 70.4   | 95.8   | 87.3   | 70.4   | 56.3   | 56.3   |
| 87.5° | 5.6    | 11.3   | 22.5   | 31.0   | 16.9   | 11.3   | 5.6    | 2.8    | 2.8    | 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: SP1-2101-121-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1  
 Measurement Geometry: 4π  
 Issue Date: 03/05/2021  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**  
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

**Spectral Parameters**

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



**Test Conditions**

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

REPORT NUMBER: SP1-2101-121-2

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

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

**Photopic Flux vs. Wavelength**



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2304          | 0.0           | 490    | 19043         | 2.7           | 620    | 97577         | 25.4          | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 4.8           | 625    | 90158         | 19.9          | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 8.0           | 630    | 82240         | 14.9          | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 13.3          | 635    | 74361         | 11.2          | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 20.2          | 640    | 66994         | 8.0           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 28.5          | 645    | 60405         | 5.8           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 37.4          | 650    | 53806         | 3.9           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 44.9          | 655    | 47610         | 2.7           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 52.6          | 660    | 42018         | 1.8           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.0           | 535    | 94097         | 58.4          | 665    | 36742         | 1.2           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.0           | 540    | 96845         | 63.1          | 670    | 32105         | 0.7           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.0           | 545    | 100829        | 67.1          | 675    | 27946         | 0.5           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 0.1           | 550    | 105648        | 71.8          | 680    | 24146         | 0.3           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 0.2           | 555    | 110017        | 75.1          | 685    | 21191         | 0.2           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 0.5           | 560    | 114586        | 77.9          | 690    | 18544         | 0.1           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 1.2           | 565    | 118987        | 79.1          | 695    | 16058         | 0.1           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 2.1           | 570    | 122326        | 79.5          | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 2.9           | 575    | 125968        | 78.4          | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 2.7           | 580    | 127613        | 75.8          | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 2.0           | 585    | 129466        | 71.9          | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 1.5           | 590    | 128813        | 66.6          | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 1.3           | 595    | 126387        | 59.9          | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 1.0           | 600    | 123477        | 53.2          | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 1.1           | 605    | 118718        | 46.0          | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 1.2           | 610    | 112091        | 38.5          | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 1.7           | 615    | 105039        | 31.7          | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2304          | 0.0           | 490    | 19043         | 29.3          | 620    | 97577         | 1.2           | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 43.0          | 625    | 90158         | 0.8           | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 60.8          | 630    | 82240         | 0.5           | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 81.1          | 635    | 74361         | 0.3           | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 99.6          | 640    | 66994         | 0.2           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 113.9         | 645    | 60405         | 0.1           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 122.6         | 650    | 53806         | 0.1           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 125.0         | 655    | 47610         | 0.0           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 123.1         | 660    | 42018         | 0.0           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.1           | 535    | 94097         | 117.3         | 665    | 36742         | 0.0           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.2           | 540    | 96845         | 107.0         | 670    | 32105         | 0.0           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.9           | 545    | 100829        | 96.7          | 675    | 27946         | 0.0           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 3.0           | 550    | 105648        | 86.4          | 680    | 24146         | 0.0           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 9.3           | 555    | 110017        | 75.2          | 685    | 21191         | 0.0           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 23.0          | 560    | 114586        | 64.0          | 690    | 18544         | 0.0           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 45.7          | 565    | 118987        | 53.4          | 695    | 16058         | 0.0           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 75.5          | 570    | 122326        | 43.2          | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 93.8          | 575    | 125968        | 34.3          | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 79.3          | 580    | 127613        | 26.3          | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 51.3          | 585    | 129466        | 19.8          | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 35.6          | 590    | 128813        | 14.3          | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 26.0          | 595    | 126387        | 10.1          | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 19.3          | 600    | 123477        | 7.0           | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 16.8          | 605    | 118718        | 4.7           | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 17.7          | 610    | 112091        | 3.0           | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 21.4          | 615    | 105039        | 1.9           | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

REPORT NUMBER: SP1-2101-121-2

**Melanopic Flux vs. Wavelength**



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

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2304          | 0.0           | 490    | 19043         | 15.8          | 620    | 97577         | 0.1           | 750    | 4830          | 0.0           | 880    | 3505          | 0.0           |
| 365    | 2150          | 0.0           | 495    | 26606         | 22.0          | 625    | 90158         | 0.0           | 755    | 4664          | 0.0           | 885    | 2991          | 0.0           |
| 370    | 2146          | 0.0           | 500    | 36376         | 29.2          | 630    | 82240         | 0.0           | 760    | 4006          | 0.0           | 890    | 2327          | 0.0           |
| 375    | 2332          | 0.0           | 505    | 47714         | 36.6          | 635    | 74361         | 0.0           | 765    | 3715          | 0.0           | 895    | 2775          | 0.0           |
| 380    | 2527          | 0.0           | 510    | 58741         | 42.2          | 640    | 66994         | 0.0           | 770    | 3696          | 0.0           | 900    | 2141          | 0.0           |
| 385    | 2304          | 0.0           | 515    | 68716         | 44.9          | 645    | 60405         | 0.0           | 775    | 3117          | 0.0           | 905    | 2421          | 0.0           |
| 390    | 2064          | 0.0           | 520    | 77136         | 44.9          | 650    | 53806         | 0.0           | 780    | 3062          | 0.0           | 910    | 2200          | 0.0           |
| 395    | 1856          | 0.0           | 525    | 83567         | 42.4          | 655    | 47610         | 0.0           | 785    | 2907          | 0.0           | 915    | 2716          | 0.0           |
| 400    | 1856          | 0.0           | 530    | 89283         | 38.6          | 660    | 42018         | 0.0           | 790    | 2655          | 0.0           | 920    | 2656          | 0.0           |
| 405    | 2374          | 0.0           | 535    | 94097         | 33.9          | 665    | 36742         | 0.0           | 795    | 2467          | 0.0           | 925    | 2671          | 0.0           |
| 410    | 4084          | 0.2           | 540    | 96845         | 28.3          | 670    | 32105         | 0.0           | 800    | 2609          | 0.0           | 930    | 3292          | 0.0           |
| 415    | 8543          | 0.6           | 545    | 100829        | 23.4          | 675    | 27946         | 0.0           | 805    | 2293          | 0.0           | 935    | 3188          | 0.0           |
| 420    | 18394         | 2.1           | 550    | 105648        | 19.0          | 680    | 24146         | 0.0           | 810    | 2188          | 0.0           | 940    | 1997          | 0.0           |
| 425    | 37987         | 5.9           | 555    | 110017        | 14.8          | 685    | 21191         | 0.0           | 815    | 2386          | 0.0           | 945    | 2623          | 0.0           |
| 430    | 67605         | 14.3          | 560    | 114586        | 11.3          | 690    | 18544         | 0.0           | 820    | 2712          | 0.0           | 950    | 2969          | 0.0           |
| 435    | 102160        | 27.3          | 565    | 118987        | 8.4           | 695    | 16058         | 0.0           | 825    | 2473          | 0.0           | 955    | 2277          | 0.0           |
| 440    | 135103        | 45.1          | 570    | 122326        | 6.0           | 700    | 14133         | 0.0           | 830    | 1969          | 0.0           | 960    | 4267          | 0.0           |
| 445    | 140126        | 55.3          | 575    | 125968        | 4.2           | 705    | 12309         | 0.0           | 835    | 1917          | 0.0           | 965    | 2034          | 0.0           |
| 450    | 102339        | 47.2          | 580    | 127613        | 2.9           | 710    | 11142         | 0.0           | 840    | 2248          | 0.0           | 970    | 3586          | 0.0           |
| 455    | 58751         | 30.8          | 585    | 129466        | 1.9           | 715    | 10143         | 0.0           | 845    | 2266          | 0.0           | 975    | 2505          | 0.0           |
| 460    | 36892         | 21.7          | 590    | 128813        | 1.3           | 720    | 9072          | 0.0           | 850    | 2558          | 0.0           | 980    | 2666          | 0.0           |
| 465    | 24637         | 16.1          | 595    | 126387        | 0.8           | 725    | 8130          | 0.0           | 855    | 2767          | 0.0           | 985    | 2934          | 0.0           |
| 470    | 16738         | 12.0          | 600    | 123477        | 0.5           | 730    | 7149          | 0.0           | 860    | 2826          | 0.0           | 990    | 4120          | 0.0           |
| 475    | 13456         | 10.3          | 605    | 118718        | 0.3           | 735    | 6311          | 0.0           | 865    | 2385          | 0.0           | 995    | 3858          | 0.0           |
| 480    | 13081         | 10.5          | 610    | 112091        | 0.2           | 740    | 5711          | 0.0           | 870    | 3194          | 0.0           | 1000   | 3405          | 0.0           |
| 485    | 14734         | 12.1          | 615    | 105039        | 0.1           | 745    | 5111          | 0.0           | 875    | 3189          | 0.0           |        |               |               |

**Summary**

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



**Color Vector Graphics**





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

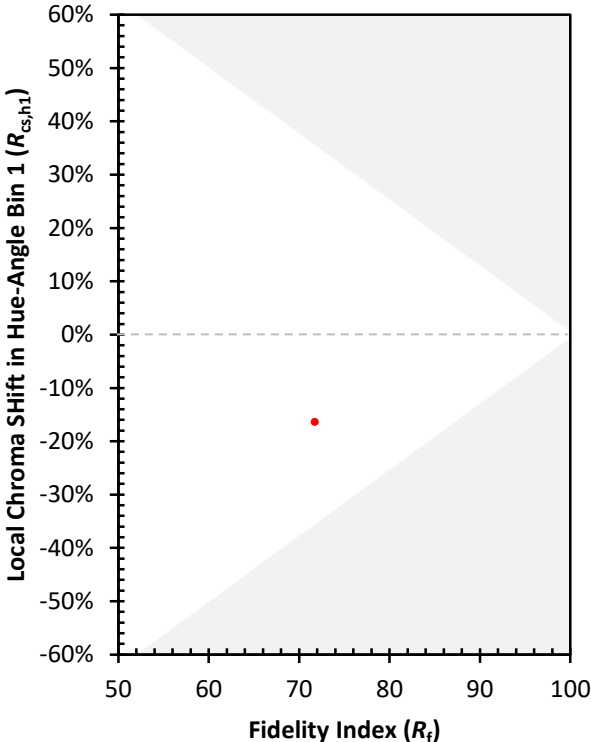
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54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



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)