

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: P385506

Luminaire Tested: **GPC-SA1A-740-U-T4FT-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P385506  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-17)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GPC-SA1A-740-U-T4FT-HSS  
Description: GALLEON PEDESTRIAN LUMINAIRE  
(1) 70 CRI, 4000K, 615mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV FORWARD  
THROW OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

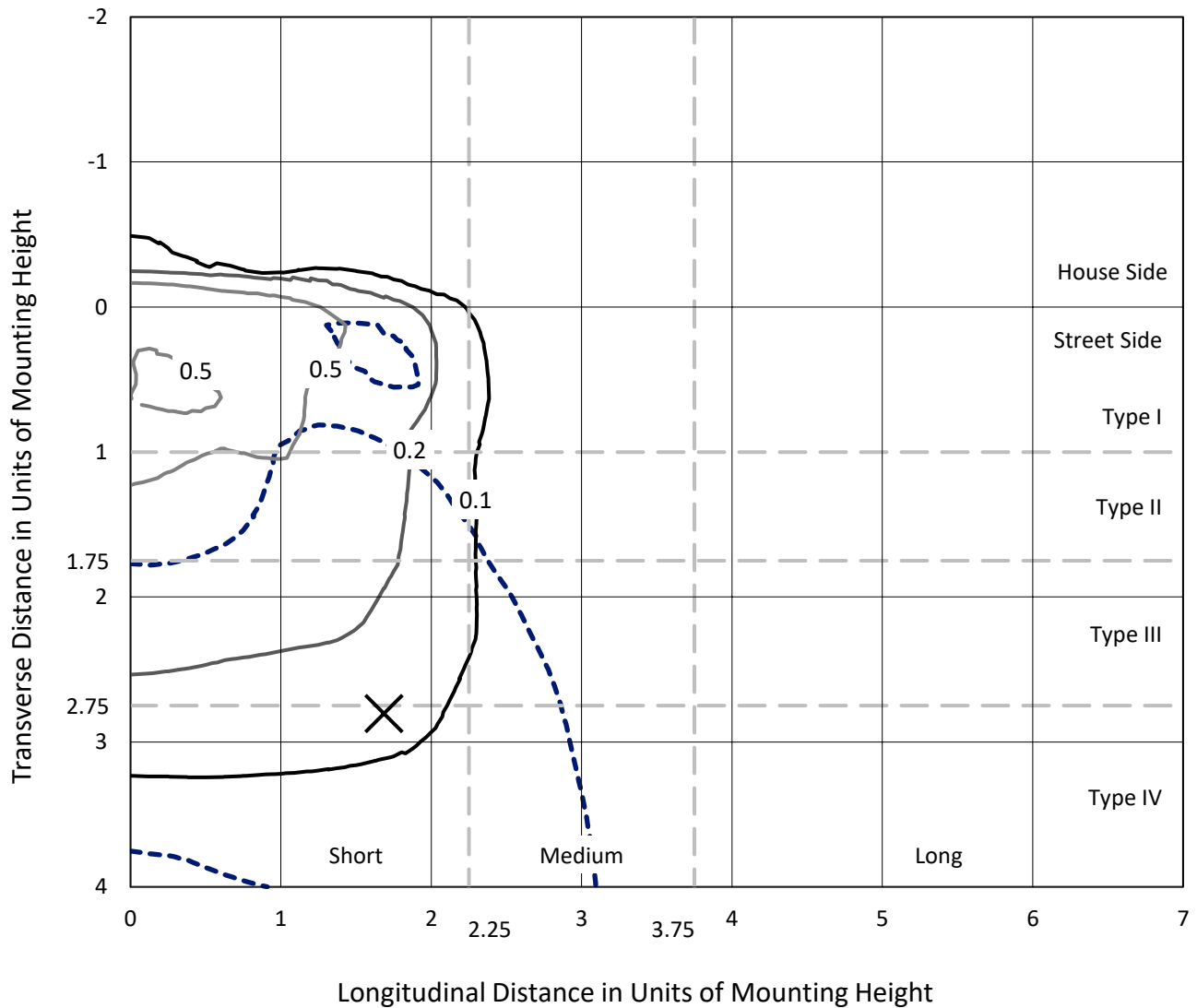
Lumens per Lamp: N/A  
Luminaire Lumens: 3535 lumens  
Efficiency: N/A  
Efficacy: 104.0 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
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

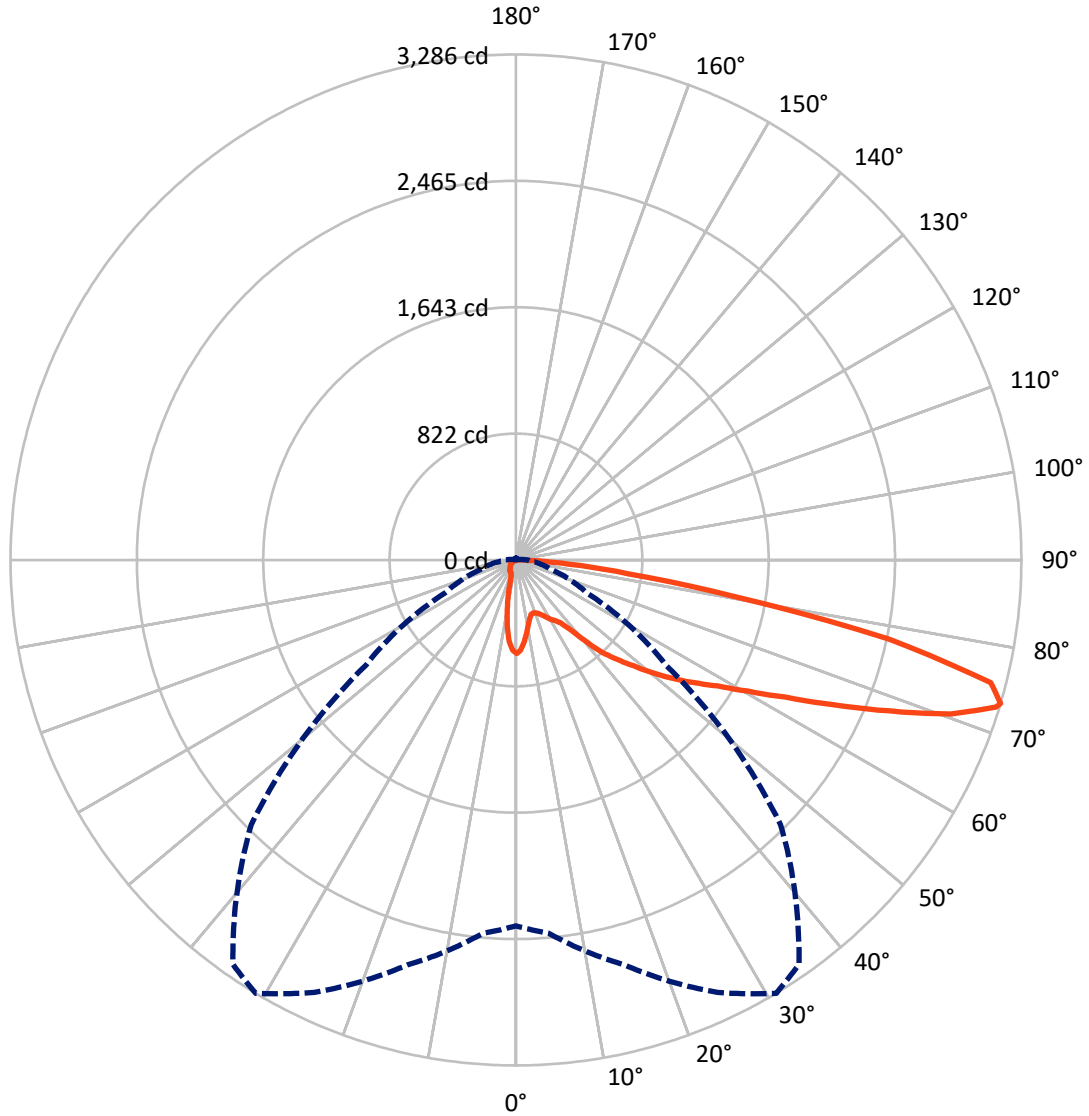
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 31-Deg Lateral      - - - Horizontal Cone Through 73-Deg Vertical

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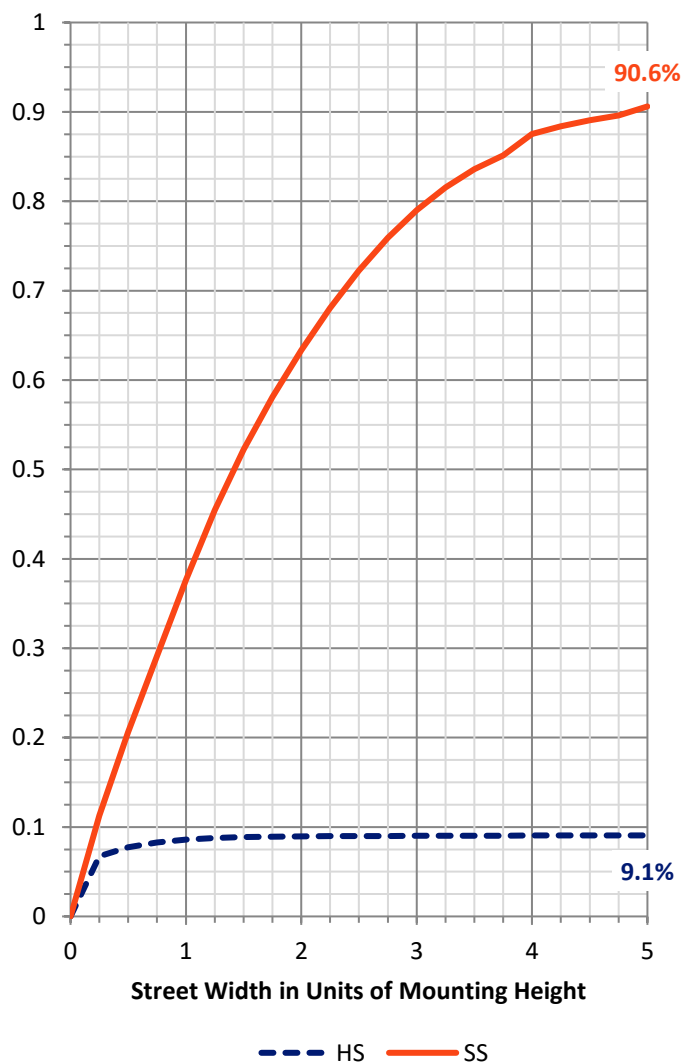
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 322.2    | 0.0    | 322.2  |
|                    | % Fixture | 9.1      | 0.0    | 9.1    |
| <b>Street Side</b> | Lumens    | 3212.8   | 0.0    | 3212.8 |
|                    | % Fixture | 90.9     | 0.0    | 90.9   |
| <b>Total</b>       | Lumens    | 3535.0   | 0.0    | 3535.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 50.4   | 1.4       |
| 10°-20°   | 109.5  | 3.1       |
| 20°-30°   | 164.1  | 4.6       |
| 30°-40°   | 261.0  | 7.4       |
| 40°-50°   | 466.1  | 13.2      |
| 50°-60°   | 723.3  | 20.5      |
| 60°-70°   | 961.5  | 27.2      |
| 70°-80°   | 723.2  | 20.5      |
| 80°-90°   | 76.0   | 2.1       |
| 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°    | 3535.0 | 100.0     |
| 0°-180°   | 3535.0 | 100.0     |

**Coefficient of Utilization**

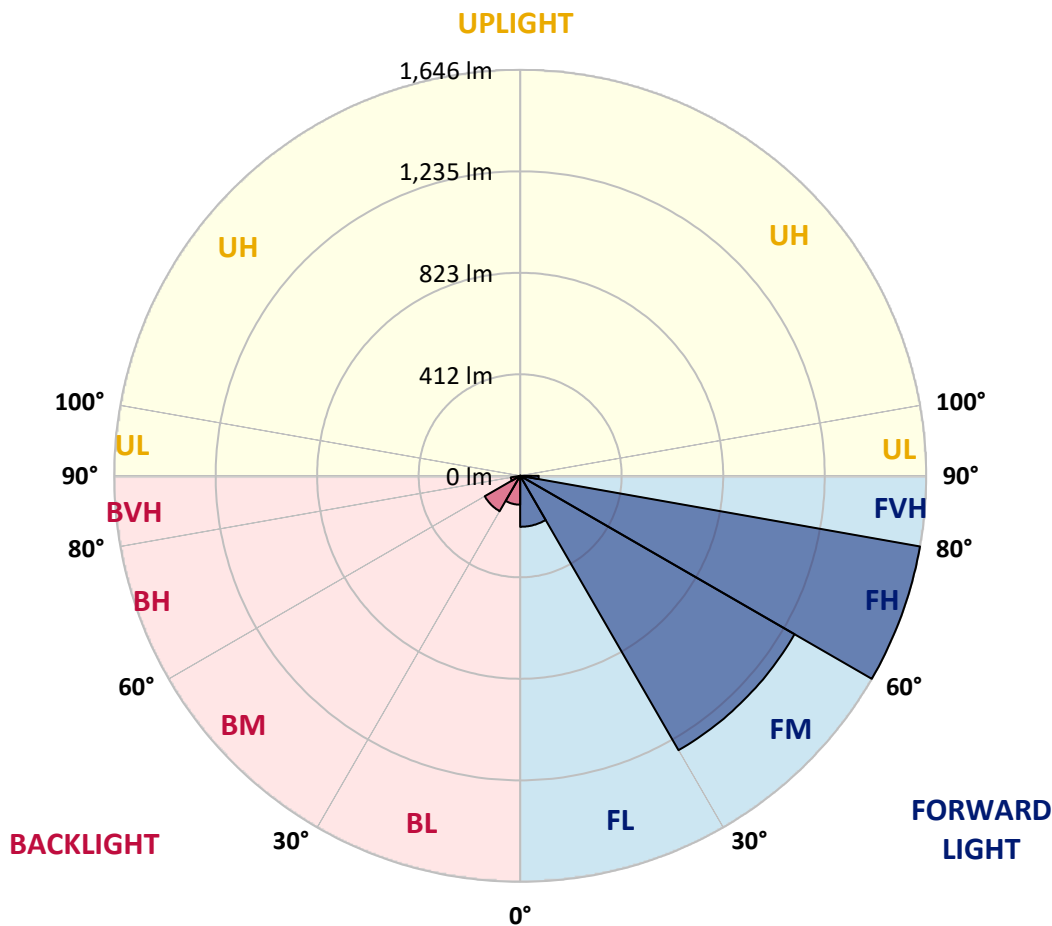


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 206.8  | 5.9       |                         |      |         |
| FM (30°-60°)   | 1284.5 | 36.3      |                         |      |         |
| FH (60°-80°)   | 1646.1 | 46.6      |                         |      | G1/1800 |
| FVH (80°-90°)  | 75.4   | 2.1       |                         |      | G1/100  |
| BL (0°-30°)    | 117.2  | 3.3       | B1/500                  |      |         |
| BM (30°-60°)   | 165.9  | 4.7       | B0/220                  |      |         |
| BH (60°-80°)   | 38.6   | 1.1       | B0/110                  |      | G0/110  |
| BVH (80°-90°)  | 0.6    | 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-G1**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 31°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  | 608.2  |
| 2.5°  | 576.4  | 578.8  | 581.4  | 581.9  | 586.2  | 586.4  | 592.6  | 597.3  | 602.0  | 606.5  | 608.0  |
| 5°    | 517.2  | 521.2  | 525.9  | 530.5  | 539.7  | 543.3  | 558.6  | 574.1  | 589.0  | 603.2  | 610.1  |
| 7.5°  | 454.1  | 458.6  | 465.1  | 476.7  | 486.9  | 494.0  | 518.1  | 545.8  | 573.4  | 599.6  | 614.6  |
| 10°   | 396.5  | 400.6  | 407.5  | 419.8  | 435.6  | 445.3  | 477.6  | 516.0  | 556.7  | 596.3  | 621.4  |
| 12.5° | 359.8  | 362.1  | 365.9  | 379.0  | 393.2  | 404.1  | 442.1  | 489.7  | 542.8  | 596.1  | 632.2  |
| 15°   | 353.1  | 353.7  | 350.6  | 356.5  | 367.6  | 378.1  | 416.7  | 468.4  | 532.3  | 598.9  | 646.4  |
| 17.5° | 363.8  | 363.4  | 353.1  | 352.4  | 361.2  | 369.8  | 404.3  | 453.7  | 524.8  | 605.3  | 664.8  |
| 20°   | 380.0  | 378.8  | 360.8  | 357.6  | 366.9  | 375.0  | 403.4  | 448.2  | 522.1  | 616.0  | 687.1  |
| 22.5° | 401.7  | 399.6  | 371.4  | 367.9  | 378.0  | 386.4  | 414.1  | 453.6  | 524.5  | 630.3  | 713.0  |
| 25°   | 428.5  | 425.4  | 389.6  | 385.7  | 396.0  | 404.4  | 433.3  | 469.0  | 531.7  | 647.8  | 745.9  |
| 27.5° | 458.7  | 454.3  | 418.6  | 408.8  | 420.3  | 429.2  | 458.9  | 492.5  | 543.2  | 666.3  | 786.2  |
| 30°   | 487.3  | 481.4  | 449.2  | 433.0  | 447.2  | 457.0  | 486.6  | 520.5  | 561.5  | 694.9  | 841.4  |
| 32.5° | 516.0  | 509.4  | 476.6  | 457.2  | 470.0  | 480.7  | 515.1  | 559.1  | 595.9  | 738.5  | 914.7  |
| 35°   | 582.1  | 575.2  | 534.9  | 502.9  | 502.7  | 508.7  | 555.1  | 611.8  | 641.4  | 799.2  | 1002.3 |
| 37.5° | 693.3  | 689.3  | 650.9  | 590.2  | 574.0  | 567.2  | 609.6  | 674.8  | 706.8  | 882.7  | 1101.0 |
| 40°   | 815.1  | 811.6  | 768.6  | 713.5  | 688.8  | 672.2  | 687.8  | 762.5  | 799.2  | 984.8  | 1201.9 |
| 42.5° | 952.6  | 936.2  | 859.4  | 842.9  | 820.8  | 808.2  | 794.2  | 870.6  | 912.7  | 1095.8 | 1301.9 |
| 45°   | 1077.5 | 1049.8 | 950.2  | 925.3  | 920.3  | 923.4  | 931.2  | 1015.9 | 1040.3 | 1227.8 | 1401.5 |
| 47.5° | 1151.9 | 1130.1 | 1053.6 | 1029.8 | 1028.4 | 1049.0 | 1107.8 | 1180.1 | 1167.5 | 1342.9 | 1489.2 |
| 50°   | 1222.6 | 1202.9 | 1139.4 | 1145.3 | 1151.7 | 1179.7 | 1308.3 | 1348.9 | 1283.5 | 1447.2 | 1569.6 |
| 52.5° | 1279.9 | 1249.8 | 1216.6 | 1249.6 | 1281.1 | 1326.3 | 1515.1 | 1500.4 | 1365.9 | 1530.2 | 1638.5 |
| 55°   | 1312.9 | 1299.3 | 1315.4 | 1348.6 | 1407.7 | 1481.1 | 1710.4 | 1626.5 | 1426.1 | 1606.0 | 1684.3 |
| 57.5° | 1434.0 | 1407.2 | 1439.2 | 1467.9 | 1545.1 | 1647.7 | 1877.7 | 1720.5 | 1469.5 | 1652.8 | 1694.9 |
| 60°   | 1580.5 | 1558.9 | 1577.8 | 1625.5 | 1729.6 | 1850.2 | 2034.1 | 1797.1 | 1492.1 | 1682.9 | 1667.5 |
| 62.5° | 1813.7 | 1785.2 | 1773.4 | 1826.9 | 1964.9 | 2096.5 | 2152.8 | 1850.2 | 1487.1 | 1669.6 | 1573.8 |
| 65°   | 2126.1 | 2096.5 | 2044.0 | 2092.4 | 2268.0 | 2360.9 | 2285.4 | 1861.5 | 1452.5 | 1561.9 | 1336.8 |
| 67.5° | 2446.1 | 2424.7 | 2379.7 | 2461.4 | 2619.8 | 2649.7 | 2425.7 | 1834.1 | 1341.1 | 1266.4 | 944.5  |
| 70°   | 2657.5 | 2648.4 | 2677.6 | 2858.2 | 2999.5 | 2990.9 | 2554.4 | 1687.3 | 1045.3 | 778.8  | 467.2  |
| 72.5° | 2505.1 | 2549.1 | 2764.9 | 3092.4 | 3265.0 | 3194.5 | 2488.3 | 1295.6 | 597.5  | 299.6  | 135.1  |
| 73°   | 2378.8 | 2435.1 | 2725.7 | 3101.2 | 3286.0 | 3208.6 | 2432.8 | 1189.2 | 509.3  | 236.5  | 102.4  |
| 75°   | 1654.9 | 1723.9 | 2256.5 | 2888.3 | 3188.1 | 3057.1 | 2027.9 | 727.9  | 235.9  | 104.8  | 41.3   |
| 77.5° | 803.5  | 854.5  | 1242.5 | 2086.9 | 2479.3 | 2388.5 | 1262.4 | 271.2  | 106.6  | 65.6   | 19.0   |
| 80°   | 300.0  | 333.5  | 539.4  | 1062.1 | 1432.8 | 1470.3 | 555.3  | 102.6  | 70.9   | 52.8   | 9.7    |
| 82.5° | 78.5   | 87.5   | 198.9  | 473.6  | 734.3  | 768.6  | 175.1  | 51.7   | 51.9   | 43.4   | 5.9    |
| 85°   | 25.1   | 28.7   | 62.1   | 212.6  | 346.0  | 303.8  | 45.7   | 25.1   | 37.7   | 32.3   | 3.3    |
| 87.5° | 3.1    | 4.0    | 19.7   | 50.0   | 76.3   | 42.4   | 7.1    | 7.4    | 16.1   | 18.0   | 1.9    |
| 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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 CATALOG NUMBER: GPC-SA1A-740-U-T4FT-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 608.2  | 608.2 | 608.2 | 608.2 | 608.2 | 608.2 | 608.2 | 608.2 | 608.2 | 608.2 | 608.2 |
| 2.5°  | 609.6  | 608.7 | 608.9 | 604.4 | 601.5 | 595.6 | 589.5 | 586.8 | 583.8 | 582.6 | 583.8 |
| 5°    | 612.7  | 611.1 | 606.6 | 592.8 | 578.1 | 559.1 | 541.3 | 527.8 | 510.8 | 506.1 | 511.0 |
| 7.5°  | 617.5  | 614.4 | 601.3 | 573.1 | 540.4 | 504.1 | 463.2 | 433.5 | 409.1 | 393.4 | 399.1 |
| 10°   | 624.6  | 618.8 | 592.3 | 544.4 | 485.9 | 421.6 | 363.6 | 318.5 | 286.5 | 273.3 | 272.8 |
| 12.5° | 636.6  | 625.5 | 581.2 | 507.0 | 419.3 | 333.5 | 257.6 | 208.6 | 182.7 | 165.9 | 165.5 |
| 15°   | 649.7  | 633.5 | 567.2 | 462.2 | 341.8 | 238.9 | 165.9 | 128.7 | 111.9 | 106.6 | 105.9 |
| 17.5° | 665.8  | 642.6 | 549.0 | 407.0 | 260.7 | 158.3 | 108.3 | 97.6  | 96.9  | 96.4  | 96.4  |
| 20°   | 686.0  | 653.5 | 525.7 | 343.9 | 184.9 | 105.7 | 92.0  | 92.7  | 93.1  | 92.4  | 92.5  |
| 22.5° | 709.6  | 664.6 | 497.8 | 276.1 | 125.1 | 88.4  | 88.0  | 88.9  | 89.3  | 88.9  | 89.1  |
| 25°   | 736.9  | 677.4 | 463.9 | 205.0 | 90.3  | 83.9  | 84.8  | 86.0  | 86.8  | 86.8  | 86.8  |
| 27.5° | 770.8  | 693.0 | 423.1 | 143.1 | 78.0  | 79.2  | 81.6  | 83.9  | 85.1  | 85.5  | 85.5  |
| 30°   | 814.9  | 712.3 | 374.2 | 98.1  | 70.9  | 73.0  | 77.5  | 81.8  | 84.1  | 84.4  | 84.6  |
| 32.5° | 870.6  | 734.1 | 317.4 | 72.5  | 64.9  | 66.4  | 71.3  | 78.5  | 82.9  | 83.6  | 83.6  |
| 35°   | 934.4  | 759.4 | 256.4 | 63.1  | 60.5  | 61.1  | 64.9  | 73.2  | 80.8  | 82.7  | 82.9  |
| 37.5° | 1004.3 | 784.3 | 195.0 | 59.0  | 56.9  | 56.9  | 59.7  | 66.8  | 75.8  | 81.6  | 82.3  |
| 40°   | 1069.5 | 799.3 | 136.7 | 55.7  | 53.6  | 53.6  | 56.0  | 61.2  | 69.7  | 78.5  | 80.4  |
| 42.5° | 1129.7 | 804.5 | 95.1  | 52.6  | 50.5  | 51.0  | 53.1  | 57.3  | 63.7  | 72.5  | 74.2  |
| 45°   | 1191.7 | 803.7 | 69.4  | 49.0  | 47.4  | 49.0  | 50.5  | 53.6  | 58.3  | 63.3  | 63.7  |
| 47.5° | 1238.4 | 796.4 | 55.0  | 45.5  | 44.5  | 46.5  | 47.9  | 50.0  | 52.6  | 52.2  | 52.2  |
| 50°   | 1282.1 | 778.8 | 44.3  | 40.8  | 41.5  | 43.9  | 44.6  | 45.3  | 45.5  | 42.2  | 41.9  |
| 52.5° | 1315.4 | 751.3 | 35.5  | 35.8  | 38.6  | 41.0  | 40.3  | 39.3  | 37.5  | 33.6  | 32.9  |
| 55°   | 1326.4 | 698.3 | 27.9  | 29.6  | 34.3  | 37.4  | 34.8  | 32.5  | 29.2  | 25.9  | 25.3  |
| 57.5° | 1306.4 | 630.0 | 22.7  | 23.0  | 28.9  | 31.5  | 28.5  | 25.9  | 22.3  | 19.5  | 19.0  |
| 60°   | 1263.8 | 554.1 | 18.7  | 17.3  | 22.3  | 24.6  | 22.7  | 20.1  | 16.8  | 14.7  | 14.5  |
| 62.5° | 1179.4 | 473.1 | 15.4  | 13.5  | 17.0  | 18.9  | 17.6  | 15.7  | 13.0  | 11.6  | 11.4  |
| 65°   | 1001.9 | 378.5 | 12.5  | 10.9  | 13.1  | 14.7  | 13.7  | 12.3  | 10.2  | 9.2   | 9.0   |
| 67.5° | 699.4  | 255.8 | 10.2  | 9.0   | 10.4  | 11.6  | 10.7  | 10.0  | 8.1   | 8.0   | 8.1   |
| 70°   | 337.3  | 123.3 | 8.5   | 7.3   | 8.1   | 9.0   | 8.6   | 8.1   | 7.8   | 9.0   | 10.4  |
| 72.5° | 96.7   | 41.3  | 6.7   | 6.1   | 6.6   | 7.1   | 7.4   | 7.3   | 8.5   | 10.9  | 12.6  |
| 73°   | 74.4   | 33.4  | 6.4   | 5.7   | 6.2   | 6.9   | 7.3   | 7.1   | 8.6   | 11.1  | 12.6  |
| 75°   | 31.8   | 16.1  | 4.8   | 4.7   | 5.2   | 6.1   | 6.4   | 6.4   | 8.6   | 11.2  | 12.1  |
| 77.5° | 14.4   | 8.6   | 3.1   | 3.6   | 4.5   | 4.8   | 5.4   | 5.4   | 6.9   | 8.6   | 8.6   |
| 80°   | 8.1    | 4.7   | 2.4   | 2.8   | 3.3   | 3.3   | 3.3   | 2.9   | 3.1   | 3.5   | 3.8   |
| 82.5° | 5.2    | 3.1   | 1.9   | 2.2   | 2.1   | 1.7   | 1.4   | 1.4   | 1.2   | 1.4   | 1.7   |
| 85°   | 2.9    | 1.7   | 1.7   | 1.4   | 0.9   | 0.7   | 0.9   | 0.7   | 0.2   | 0.0   | 0.2   |
| 87.5° | 1.7    | 1.0   | 0.5   | 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: SP1-2101-121-2  
 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

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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 4000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



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| 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           |        |               |               |

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**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)