

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: P437185

Luminaire Tested: **ISC-SA1B-740-U-T3**

Issue Date: 12/9/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P437185  
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-SA1B-740-U-T3  
Description: IMPACT ELITE LED CYLINDER LUMINAIRE  
(1) 70 CRI, 4000K, 450mA LIGHTSQUARE WITH 16 LEDS AND TYPE III OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

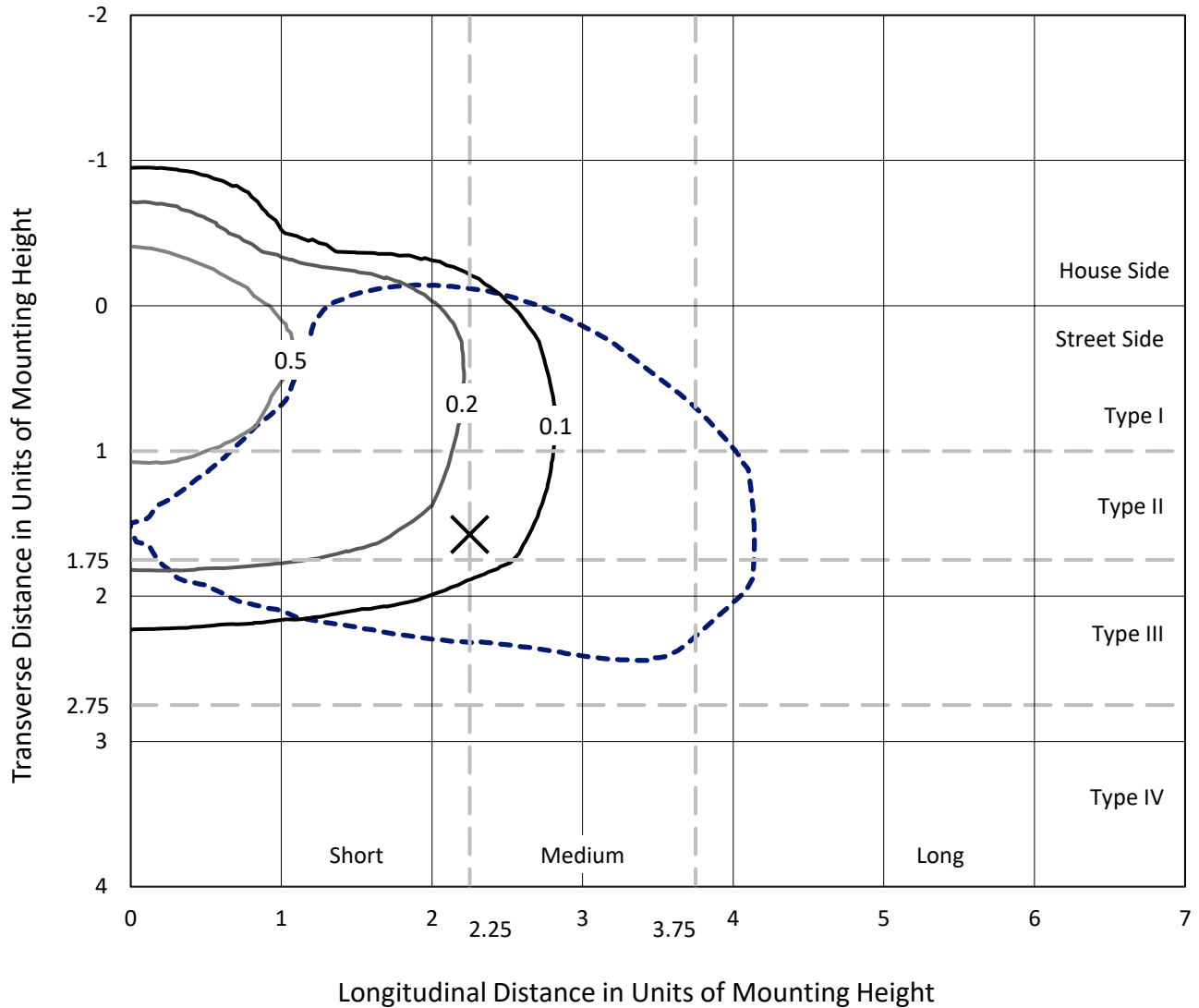
Lumens per Lamp: N/A  
Luminaire Lumens: 3470 lumens  
Efficiency: N/A  
Efficacy: 136.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 25.4  
Input Voltage (V): NR  
Input Current (Ain): 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

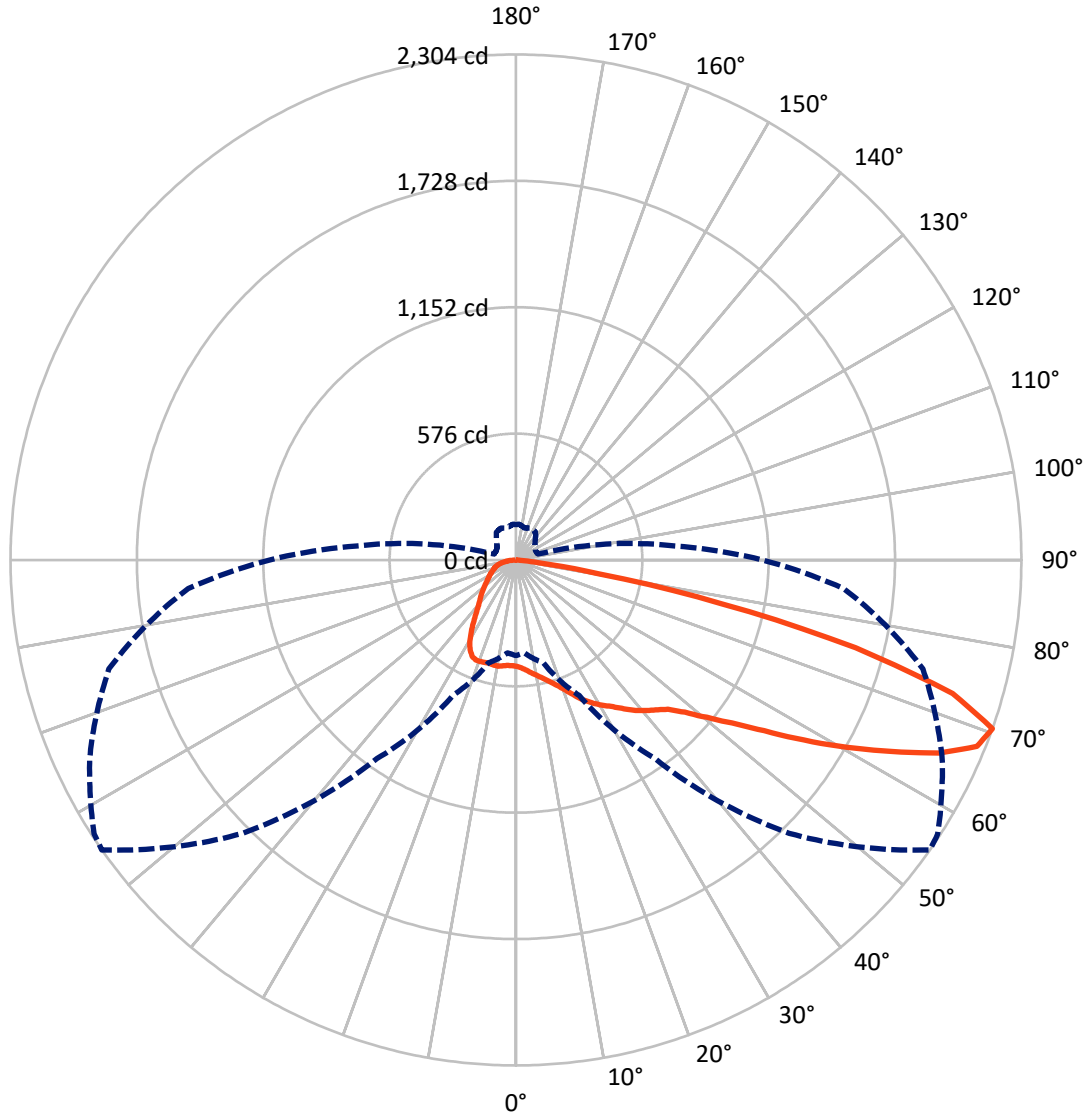
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.9 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



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

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 767.5    | 0.0    | 767.5  |
|                    | % Fixture | 22.1     | 0.0    | 22.1   |
| <b>Street Side</b> | Lumens    | 2702.5   | 0.0    | 2702.5 |
|                    | % Fixture | 77.9     | 0.0    | 77.9   |
| <b>Total</b>       | Lumens    | 3470.0   | 0.0    | 3470.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 47.7   | 1.4       |
| 10°-20°   | 151.9  | 4.4       |
| 20°-30°   | 264.2  | 7.6       |
| 30°-40°   | 372.4  | 10.7      |
| 40°-50°   | 493.5  | 14.2      |
| 50°-60°   | 719.0  | 20.7      |
| 60°-70°   | 897.3  | 25.9      |
| 70°-80°   | 477.9  | 13.8      |
| 80°-90°   | 46.0   | 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°    | 3470.0 | 100.0     |
| 0°-180°   | 3470.0 | 100.0     |

**Coefficient of Utilization**

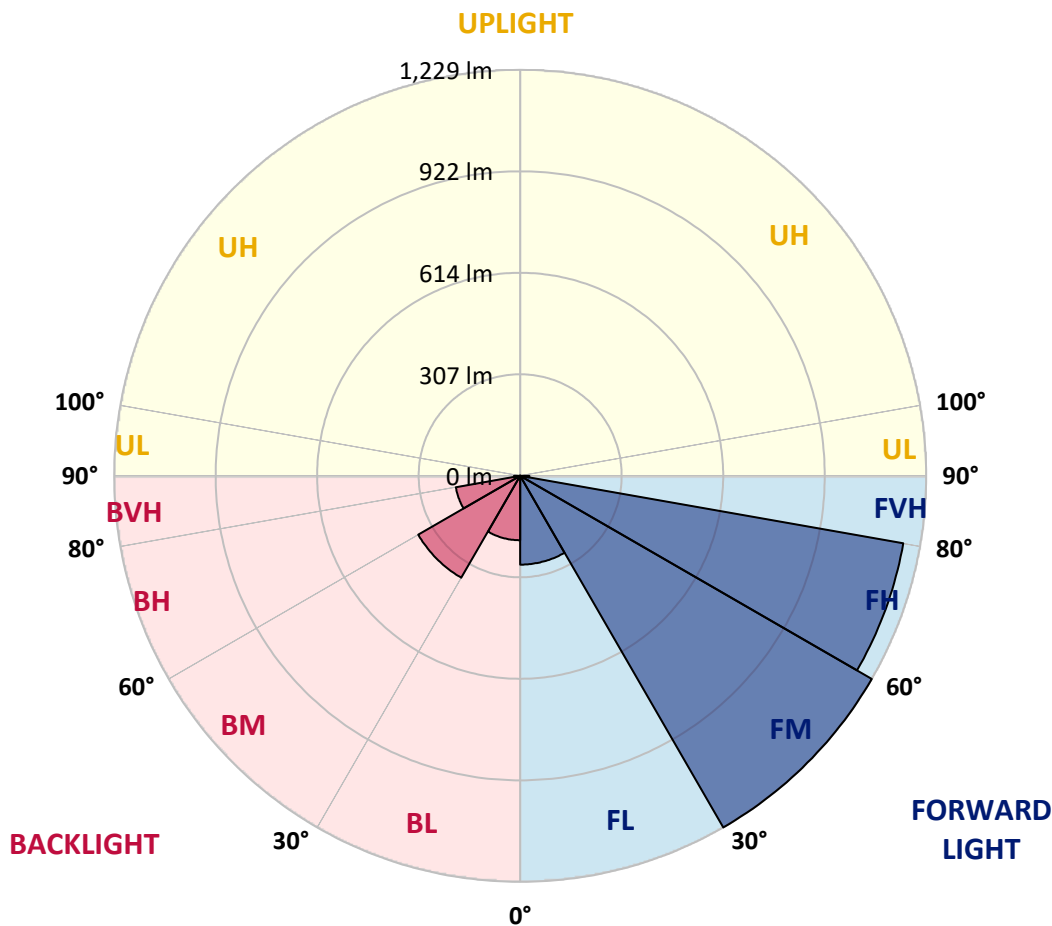


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 268.8  | 7.7       |                         |      |         |
| FM (30°-60°)   | 1228.8 | 35.4      |                         |      |         |
| FH (60°-80°)   | 1177.4 | 33.9      |                         |      | G1/1800 |
| FVH (80°-90°)  | 27.5   | 0.8       |                         |      | G1/100  |
| BL (0°-30°)    | 195.0  | 5.6       | B1/500                  |      |         |
| BM (30°-60°)   | 356.1  | 10.3      | B1/1000                 |      |         |
| BH (60°-80°)   | 197.8  | 5.7       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 18.6   | 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-G1**  
 Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 57°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  | 484.6  |
| 2.5°  | 500.8  | 499.6  | 499.6  | 498.3  | 497.1  | 495.8  | 493.3  | 490.8  | 490.8  | 488.3  | 488.3  |
| 5°    | 513.3  | 510.8  | 512.1  | 510.8  | 510.8  | 508.3  | 504.6  | 504.6  | 503.3  | 497.1  | 492.1  |
| 7.5°  | 525.8  | 524.6  | 524.6  | 525.8  | 524.6  | 522.1  | 520.8  | 519.6  | 514.6  | 507.1  | 499.6  |
| 10°   | 543.3  | 543.3  | 543.3  | 542.1  | 542.1  | 539.6  | 535.8  | 535.8  | 529.6  | 520.8  | 512.1  |
| 12.5° | 569.5  | 568.3  | 567.0  | 567.0  | 563.3  | 558.3  | 554.5  | 554.5  | 550.8  | 537.1  | 525.8  |
| 15°   | 599.5  | 595.8  | 593.3  | 593.3  | 588.3  | 579.5  | 575.8  | 577.0  | 573.3  | 557.0  | 540.8  |
| 17.5° | 629.5  | 629.5  | 627.0  | 620.7  | 614.5  | 608.2  | 599.5  | 602.0  | 598.3  | 582.0  | 560.8  |
| 20°   | 657.0  | 654.5  | 654.5  | 650.7  | 642.0  | 634.5  | 629.5  | 628.2  | 625.7  | 608.2  | 583.3  |
| 22.5° | 686.9  | 685.7  | 681.9  | 679.4  | 673.2  | 669.4  | 666.9  | 666.9  | 657.0  | 633.2  | 600.8  |
| 25°   | 723.2  | 721.9  | 721.9  | 711.9  | 706.9  | 700.7  | 704.4  | 700.7  | 695.7  | 660.7  | 619.5  |
| 27.5° | 759.4  | 759.4  | 758.1  | 753.1  | 739.4  | 735.6  | 738.1  | 735.6  | 734.4  | 686.9  | 637.0  |
| 30°   | 798.1  | 796.8  | 793.1  | 791.8  | 778.1  | 768.1  | 766.9  | 761.9  | 761.9  | 710.7  | 649.5  |
| 32.5° | 830.6  | 829.3  | 831.8  | 826.8  | 818.1  | 804.3  | 795.6  | 795.6  | 786.8  | 734.4  | 664.5  |
| 35°   | 860.5  | 863.0  | 863.0  | 860.5  | 853.0  | 839.3  | 830.6  | 833.1  | 820.6  | 755.6  | 683.2  |
| 37.5° | 894.3  | 891.8  | 888.0  | 885.5  | 875.5  | 869.3  | 869.3  | 871.8  | 853.0  | 778.1  | 708.2  |
| 40°   | 901.8  | 908.0  | 916.7  | 906.8  | 901.8  | 900.5  | 903.0  | 896.8  | 878.0  | 813.1  | 750.6  |
| 42.5° | 916.7  | 921.7  | 938.0  | 934.2  | 930.5  | 934.2  | 934.2  | 925.5  | 916.7  | 860.5  | 808.1  |
| 45°   | 954.2  | 963.0  | 975.4  | 976.7  | 975.4  | 981.7  | 970.4  | 969.2  | 967.9  | 929.2  | 885.5  |
| 47.5° | 995.4  | 1005.4 | 1034.1 | 1030.4 | 1044.1 | 1056.6 | 1036.6 | 1035.4 | 1039.1 | 1020.4 | 984.2  |
| 50°   | 1044.1 | 1054.1 | 1090.3 | 1104.1 | 1141.6 | 1164.0 | 1127.8 | 1111.6 | 1137.8 | 1136.6 | 1109.1 |
| 52.5° | 1100.3 | 1112.8 | 1137.8 | 1185.3 | 1249.0 | 1272.7 | 1234.0 | 1220.2 | 1251.5 | 1266.5 | 1241.5 |
| 55°   | 1139.1 | 1149.0 | 1187.8 | 1261.5 | 1365.1 | 1396.3 | 1373.9 | 1361.4 | 1395.1 | 1407.6 | 1381.4 |
| 57.5° | 1152.8 | 1155.3 | 1212.7 | 1328.9 | 1472.5 | 1552.5 | 1548.7 | 1540.0 | 1526.2 | 1557.5 | 1550.0 |
| 60°   | 1129.1 | 1142.8 | 1216.5 | 1358.9 | 1568.7 | 1719.8 | 1733.6 | 1713.6 | 1696.1 | 1703.6 | 1678.6 |
| 62.5° | 1097.8 | 1109.1 | 1186.5 | 1362.6 | 1633.6 | 1871.0 | 1922.2 | 1899.7 | 1856.0 | 1836.0 | 1777.3 |
| 65°   | 987.9  | 987.9  | 1064.1 | 1286.4 | 1622.4 | 1994.6 | 2120.7 | 2082.0 | 2002.1 | 1930.9 | 1773.5 |
| 67.5° | 755.6  | 751.9  | 825.6  | 1056.6 | 1463.8 | 2007.1 | 2266.9 | 2246.9 | 2118.2 | 1967.1 | 1703.6 |
| 70°   | 435.9  | 424.6  | 485.8  | 681.9  | 1105.3 | 1762.3 | 2304.3 | 2293.1 | 2144.5 | 1920.9 | 1500.0 |
| 72.5° | 151.1  | 161.1  | 201.1  | 289.8  | 608.2  | 1269.0 | 2082.0 | 2105.8 | 2019.6 | 1744.8 | 1205.3 |
| 75°   | 78.7   | 78.7   | 92.4   | 126.1  | 257.3  | 654.5  | 1599.9 | 1673.6 | 1692.4 | 1460.0 | 860.5  |
| 77.5° | 57.5   | 58.7   | 66.2   | 81.2   | 122.4  | 251.0  | 960.5  | 1030.4 | 1171.5 | 1005.4 | 497.1  |
| 80°   | 38.7   | 40.0   | 47.5   | 53.7   | 74.9   | 97.4   | 383.4  | 420.9  | 580.8  | 449.6  | 192.3  |
| 82.5° | 28.7   | 30.0   | 30.0   | 31.2   | 41.2   | 45.0   | 101.2  | 124.9  | 199.8  | 133.6  | 68.7   |
| 85°   | 6.2    | 6.2    | 12.5   | 12.5   | 12.5   | 12.5   | 22.5   | 25.0   | 37.5   | 40.0   | 22.5   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 1.2    | 1.2    | 2.5    | 2.5    | 2.5    | 3.7    | 3.7    |
| 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°    | 484.6  | 484.6  | 484.6 | 484.6 | 484.6 | 484.6 | 484.6 | 484.6 | 484.6 | 484.6 | 484.6 |
| 2.5°  | 487.1  | 485.8  | 484.6 | 483.4 | 482.1 | 480.9 | 479.6 | 480.9 | 480.9 | 483.4 | 484.6 |
| 5°    | 490.8  | 487.1  | 485.8 | 483.4 | 482.1 | 482.1 | 482.1 | 483.4 | 484.6 | 485.8 | 487.1 |
| 7.5°  | 497.1  | 495.8  | 492.1 | 487.1 | 485.8 | 485.8 | 483.4 | 483.4 | 483.4 | 485.8 | 485.8 |
| 10°   | 508.3  | 504.6  | 499.6 | 494.6 | 490.8 | 483.4 | 477.1 | 472.1 | 474.6 | 478.4 | 478.4 |
| 12.5° | 520.8  | 514.6  | 508.3 | 499.6 | 489.6 | 477.1 | 470.9 | 472.1 | 472.1 | 475.9 | 477.1 |
| 15°   | 537.1  | 532.1  | 518.3 | 503.3 | 485.8 | 475.9 | 473.4 | 470.9 | 470.9 | 473.4 | 475.9 |
| 17.5° | 554.5  | 545.8  | 528.3 | 505.8 | 488.3 | 477.1 | 472.1 | 462.1 | 457.1 | 455.9 | 458.4 |
| 20°   | 570.8  | 560.8  | 537.1 | 508.3 | 490.8 | 475.9 | 458.4 | 442.1 | 429.6 | 427.1 | 424.6 |
| 22.5° | 584.5  | 572.0  | 543.3 | 513.3 | 490.8 | 463.4 | 433.4 | 409.7 | 392.2 | 387.2 | 389.7 |
| 25°   | 599.5  | 580.8  | 550.8 | 518.3 | 482.1 | 438.4 | 397.2 | 368.4 | 351.0 | 343.5 | 343.5 |
| 27.5° | 612.0  | 593.3  | 558.3 | 514.6 | 459.6 | 404.7 | 357.2 | 328.5 | 314.7 | 307.2 | 306.0 |
| 30°   | 623.2  | 603.3  | 573.3 | 503.3 | 427.1 | 358.5 | 317.2 | 297.3 | 288.5 | 279.8 | 281.0 |
| 32.5° | 638.2  | 620.7  | 584.5 | 479.6 | 383.4 | 316.0 | 284.8 | 274.8 | 266.0 | 259.8 | 262.3 |
| 35°   | 659.5  | 649.5  | 588.3 | 449.6 | 338.5 | 286.0 | 264.8 | 253.5 | 246.0 | 237.3 | 237.3 |
| 37.5° | 689.4  | 680.7  | 575.8 | 404.7 | 298.5 | 263.5 | 248.5 | 233.6 | 221.1 | 211.1 | 208.6 |
| 40°   | 725.6  | 713.2  | 554.5 | 354.7 | 267.3 | 248.5 | 234.8 | 216.1 | 198.6 | 184.8 | 182.3 |
| 42.5° | 783.1  | 746.9  | 523.3 | 303.5 | 244.8 | 236.1 | 217.3 | 193.6 | 176.1 | 166.1 | 163.6 |
| 45°   | 844.3  | 785.6  | 478.4 | 259.8 | 227.3 | 221.1 | 199.8 | 176.1 | 163.6 | 156.1 | 154.9 |
| 47.5° | 921.7  | 828.1  | 435.9 | 227.3 | 207.3 | 206.1 | 181.1 | 166.1 | 156.1 | 151.1 | 149.9 |
| 50°   | 1024.2 | 881.8  | 393.4 | 202.3 | 189.8 | 186.1 | 172.4 | 159.9 | 152.4 | 148.6 | 147.4 |
| 52.5° | 1142.8 | 944.2  | 359.7 | 183.6 | 173.6 | 171.1 | 167.4 | 157.4 | 152.4 | 148.6 | 147.4 |
| 55°   | 1255.2 | 1009.2 | 323.5 | 166.1 | 159.9 | 162.4 | 164.9 | 157.4 | 153.6 | 151.1 | 148.6 |
| 57.5° | 1378.9 | 1064.1 | 282.3 | 152.4 | 148.6 | 154.9 | 162.4 | 158.6 | 156.1 | 152.4 | 151.1 |
| 60°   | 1455.0 | 1102.8 | 227.3 | 139.9 | 139.9 | 148.6 | 158.6 | 156.1 | 151.1 | 151.1 | 151.1 |
| 62.5° | 1488.8 | 1096.6 | 179.9 | 127.4 | 129.9 | 141.1 | 152.4 | 149.9 | 146.1 | 152.4 | 152.4 |
| 65°   | 1445.1 | 1025.4 | 146.1 | 116.2 | 119.9 | 131.1 | 146.1 | 146.1 | 146.1 | 156.1 | 156.1 |
| 67.5° | 1331.4 | 918.0  | 119.9 | 106.2 | 109.9 | 123.6 | 146.1 | 154.9 | 153.6 | 164.9 | 164.9 |
| 70°   | 1124.1 | 728.1  | 103.7 | 98.7  | 103.7 | 123.6 | 154.9 | 159.9 | 151.1 | 163.6 | 161.1 |
| 72.5° | 856.8  | 508.3  | 92.4  | 91.2  | 97.4  | 119.9 | 156.1 | 153.6 | 142.4 | 146.1 | 142.4 |
| 75°   | 563.3  | 308.5  | 81.2  | 83.7  | 86.2  | 106.2 | 148.6 | 143.6 | 129.9 | 127.4 | 124.9 |
| 77.5° | 309.7  | 154.9  | 71.2  | 74.9  | 74.9  | 89.9  | 134.9 | 123.6 | 112.4 | 106.2 | 103.7 |
| 80°   | 123.6  | 78.7   | 62.4  | 66.2  | 61.2  | 72.4  | 101.2 | 96.2  | 86.2  | 81.2  | 78.7  |
| 82.5° | 56.2   | 43.7   | 52.5  | 55.0  | 46.2  | 53.7  | 74.9  | 72.4  | 64.9  | 56.2  | 53.7  |
| 85°   | 21.2   | 25.0   | 40.0  | 37.5  | 32.5  | 31.2  | 42.5  | 38.7  | 31.2  | 25.0  | 25.0  |
| 87.5° | 2.5    | 5.0    | 10.0  | 13.7  | 7.5   | 5.0   | 2.5   | 1.2   | 1.2   | 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



CCT = 3905K  
 CIE x = 0.3841  
 CIE y = 0.3774  
 Duv = -0.0008

Point lies inside the ANSI 4000K 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    | 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)