

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: P438722

Luminaire Tested: **ISW-SA1E-740-U-T2**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438722
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISW-SA1E-740-U-T2
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 70 CRI, 4000K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7175 lumens
Efficiency: N/A
Efficacy: 123.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B1 - U0 - G2

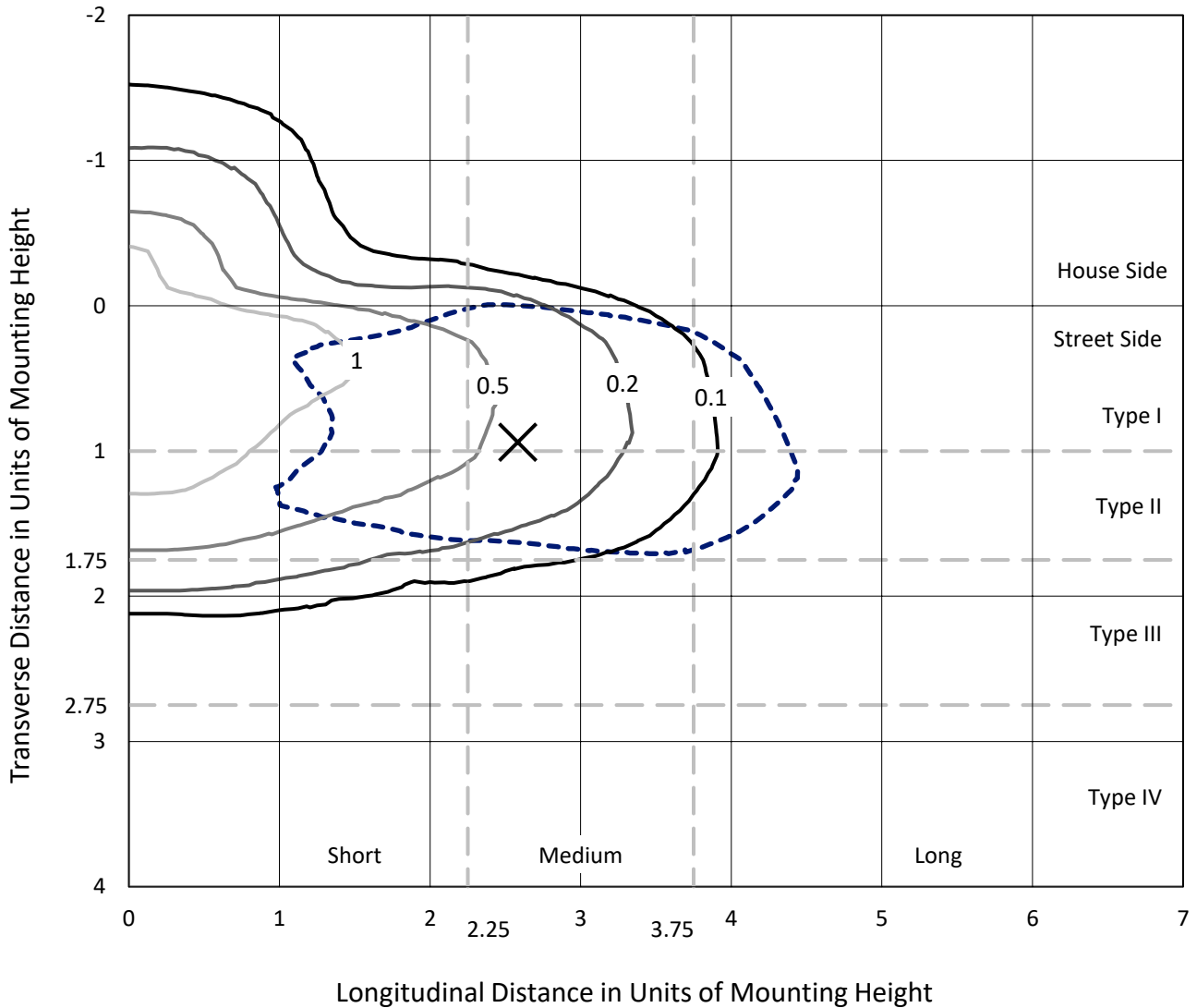
Input Watts (W): 58.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

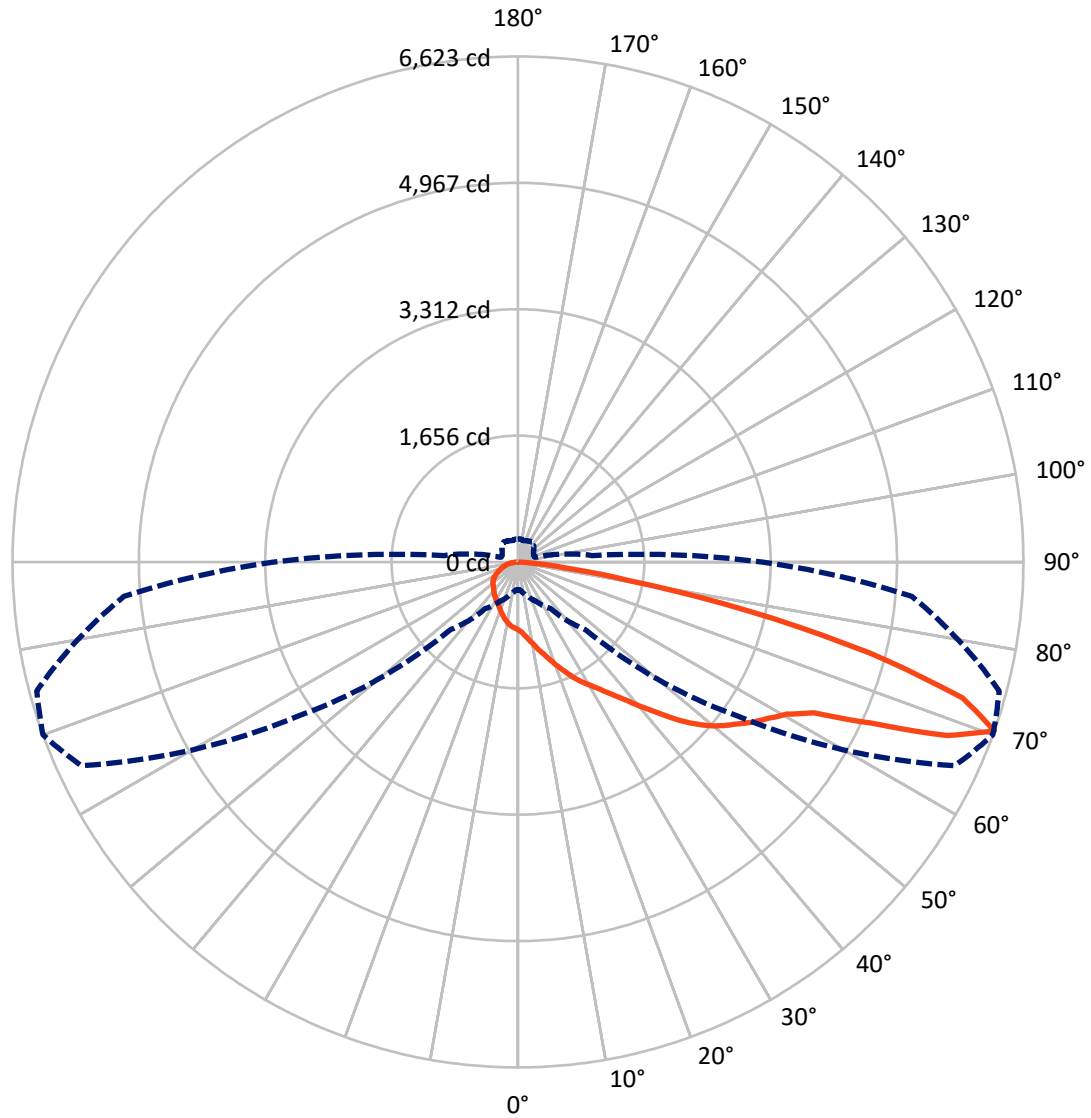
× Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



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

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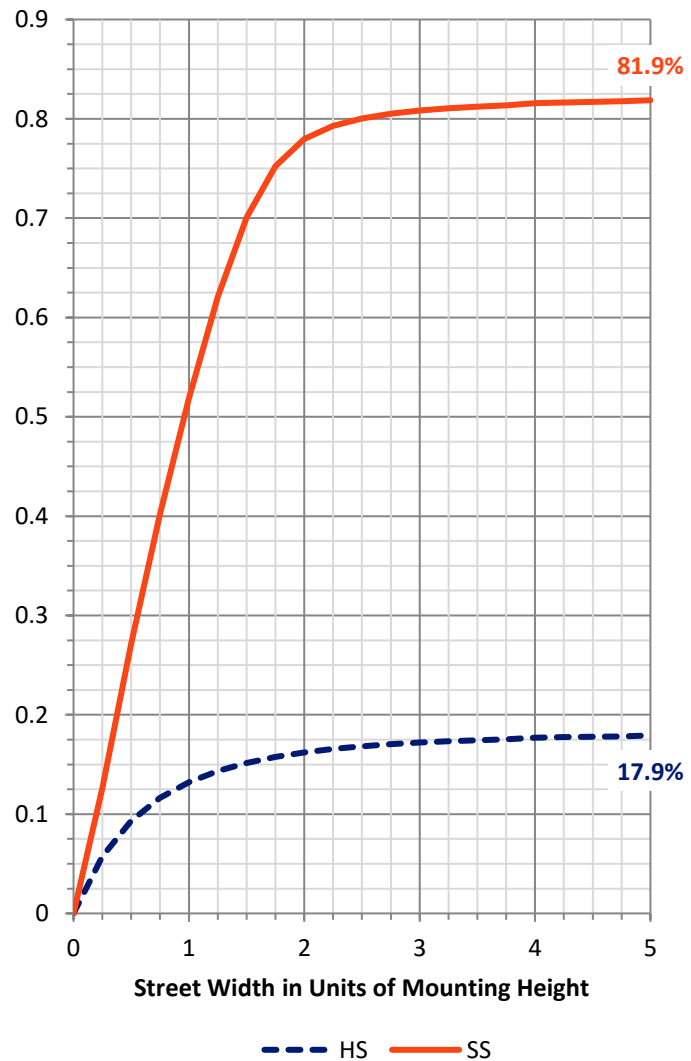
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1297.7 | 0.0 | 1297.7 |
| | % Fixture | 18.1 | 0.0 | 18.1 |
| Street Side | Lumens | 5877.3 | 0.0 | 5877.3 |
| | % Fixture | 81.9 | 0.0 | 81.9 |
| Total | Lumens | 7175.0 | 0.0 | 7175.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 89.3 | 1.2 |
| 10°-20° | 287.0 | 4.0 |
| 20°-30° | 502.1 | 7.0 |
| 30°-40° | 747.0 | 10.4 |
| 40°-50° | 1104.5 | 15.4 |
| 50°-60° | 1556.4 | 21.7 |
| 60°-70° | 1732.2 | 24.1 |
| 70°-80° | 1047.7 | 14.6 |
| 80°-90° | 108.8 | 1.5 |
| 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° | 7175.0 | 100.0 |
| 0°-180° | 7175.0 | 100.0 |

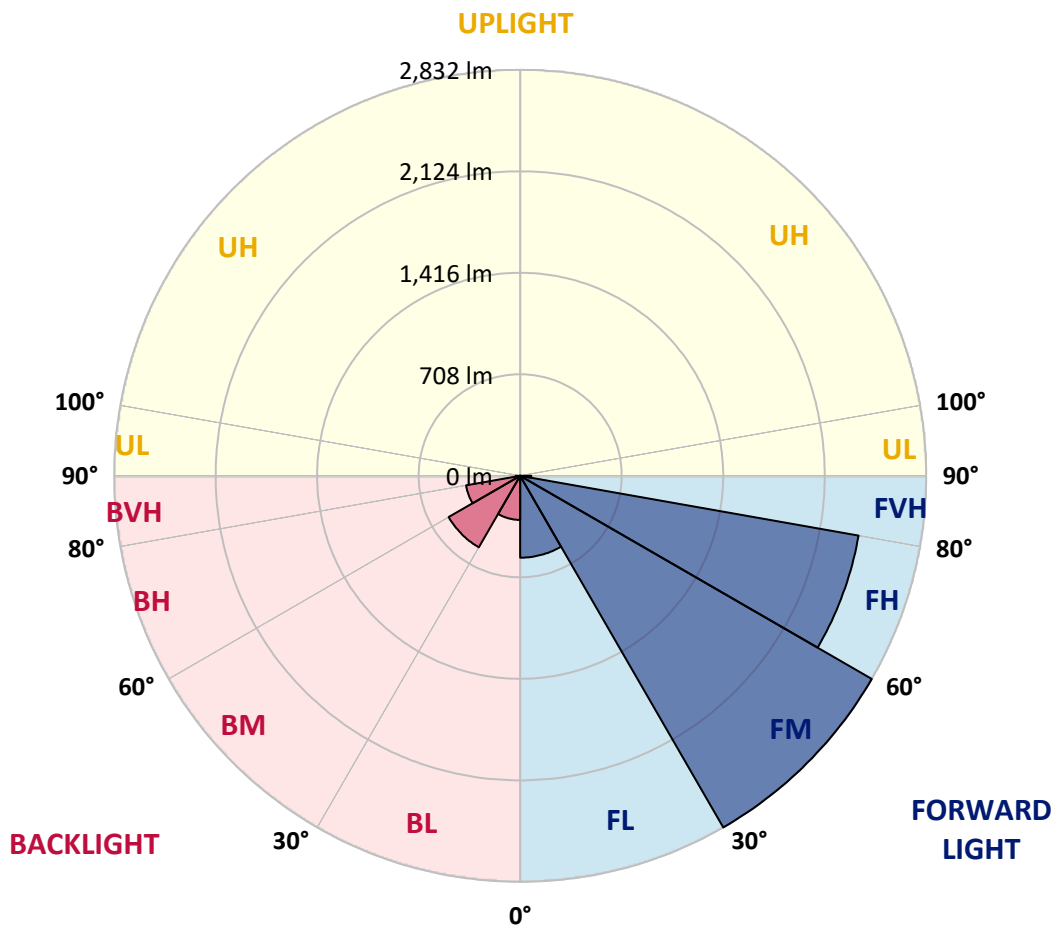


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 570.9 | 8.0 | | | |
| FM (30°-60°) | 2831.9 | 39.5 | | | |
| FH (60°-80°) | 2396.9 | 33.4 | | | G2/5000 |
| FVH (80°-90°) | 77.6 | 1.1 | | | G1/100 |
| BL (0°-30°) | 307.4 | 4.3 | B1/500 | | |
| BM (30°-60°) | 576.0 | 8.0 | B1/1000 | | |
| BH (60°-80°) | 383.1 | 5.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 31.2 | 0.4 | | | 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 II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 70° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 |
| 2.5° | 993.7 | 991.1 | 978.3 | 983.5 | 975.8 | 960.4 | 945.0 | 934.8 | 922.0 | 919.4 | 906.6 |
| 5° | 1096.2 | 1093.6 | 1085.9 | 1075.7 | 1060.3 | 1042.4 | 1014.2 | 988.6 | 968.1 | 950.2 | 927.1 |
| 7.5° | 1167.9 | 1162.7 | 1162.7 | 1157.6 | 1149.9 | 1129.4 | 1091.0 | 1057.7 | 1027.0 | 1004.0 | 952.7 |
| 10° | 1208.8 | 1208.8 | 1208.8 | 1219.1 | 1219.1 | 1203.7 | 1173.0 | 1126.9 | 1091.0 | 1062.9 | 988.6 |
| 12.5° | 1226.8 | 1226.8 | 1231.9 | 1247.3 | 1270.3 | 1270.3 | 1244.7 | 1208.8 | 1173.0 | 1124.3 | 1027.0 |
| 15° | 1239.6 | 1242.1 | 1249.8 | 1272.9 | 1306.2 | 1329.2 | 1329.2 | 1295.9 | 1247.3 | 1201.2 | 1075.7 |
| 17.5° | 1252.4 | 1254.9 | 1270.3 | 1298.5 | 1336.9 | 1380.4 | 1406.0 | 1383.0 | 1339.5 | 1288.2 | 1121.8 |
| 20° | 1254.9 | 1252.4 | 1278.0 | 1316.4 | 1372.8 | 1424.0 | 1488.0 | 1493.1 | 1447.0 | 1372.8 | 1175.5 |
| 22.5° | 1280.6 | 1280.6 | 1290.8 | 1329.2 | 1390.7 | 1465.0 | 1562.3 | 1590.4 | 1549.5 | 1485.4 | 1242.1 |
| 25° | 1331.8 | 1342.0 | 1349.7 | 1362.5 | 1408.6 | 1498.2 | 1626.3 | 1705.7 | 1667.3 | 1595.6 | 1311.3 |
| 27.5° | 1426.5 | 1426.5 | 1434.2 | 1431.7 | 1447.0 | 1526.4 | 1692.9 | 1815.8 | 1777.4 | 1682.6 | 1354.8 |
| 30° | 1518.7 | 1513.6 | 1521.3 | 1521.3 | 1516.2 | 1559.7 | 1741.6 | 1918.3 | 1877.3 | 1785.1 | 1406.0 |
| 32.5° | 1639.1 | 1641.7 | 1636.5 | 1613.5 | 1605.8 | 1621.2 | 1780.0 | 2015.6 | 1992.5 | 1885.0 | 1452.1 |
| 35° | 1803.0 | 1805.6 | 1777.4 | 1728.7 | 1703.1 | 1705.7 | 1831.2 | 2130.8 | 2133.4 | 2020.7 | 1508.5 |
| 37.5° | 1946.4 | 1959.2 | 1956.7 | 1867.0 | 1823.5 | 1813.3 | 1908.0 | 2248.7 | 2294.8 | 2176.9 | 1595.6 |
| 40° | 2079.6 | 2097.5 | 2092.4 | 2018.2 | 1961.8 | 1936.2 | 2028.4 | 2384.4 | 2492.0 | 2371.6 | 1700.6 |
| 42.5° | 2176.9 | 2187.2 | 2192.3 | 2141.1 | 2089.9 | 2102.7 | 2153.9 | 2538.1 | 2707.1 | 2586.7 | 1841.4 |
| 45° | 2281.9 | 2287.1 | 2294.8 | 2266.6 | 2230.7 | 2292.2 | 2310.1 | 2704.5 | 2958.1 | 2863.3 | 2007.9 |
| 47.5° | 2389.5 | 2410.0 | 2417.7 | 2387.0 | 2363.9 | 2463.8 | 2479.1 | 2865.9 | 3180.9 | 3134.8 | 2174.4 |
| 50° | 2563.7 | 2584.2 | 2576.5 | 2540.6 | 2520.1 | 2597.0 | 2630.3 | 3011.9 | 3378.1 | 3408.8 | 2335.7 |
| 52.5° | 2789.0 | 2801.8 | 2835.1 | 2773.7 | 2727.6 | 2699.4 | 2755.7 | 3173.2 | 3536.9 | 3649.6 | 2507.3 |
| 55° | 2832.6 | 2850.5 | 2970.9 | 3027.2 | 3065.6 | 2853.1 | 2888.9 | 3316.6 | 3708.5 | 3877.5 | 2699.4 |
| 57.5° | 2653.3 | 2663.5 | 2858.2 | 3029.8 | 3306.4 | 3232.1 | 3078.4 | 3501.0 | 3867.3 | 4113.1 | 2894.0 |
| 60° | 2207.7 | 2246.1 | 2499.6 | 2801.8 | 3239.8 | 3618.8 | 3570.2 | 3739.2 | 4046.5 | 4348.8 | 3175.8 |
| 62.5° | 1439.3 | 1475.2 | 1744.1 | 2256.3 | 2873.6 | 3624.0 | 4274.5 | 4225.8 | 4351.3 | 4635.6 | 3529.2 |
| 65° | 735.0 | 747.8 | 980.9 | 1367.6 | 2071.9 | 3239.8 | 4697.1 | 5229.8 | 5086.4 | 5209.3 | 4295.0 |
| 67.5° | 489.2 | 499.4 | 604.4 | 788.8 | 1231.9 | 2243.5 | 4558.8 | 6244.0 | 6069.8 | 6136.4 | 5109.4 |
| 70° | 361.1 | 371.4 | 458.4 | 571.1 | 745.3 | 1257.5 | 3526.6 | 6315.7 | 6623.0 | 6528.3 | 5181.1 |
| 72.5° | 268.9 | 271.5 | 325.3 | 440.5 | 550.6 | 676.1 | 2084.7 | 5211.8 | 6087.7 | 6430.9 | 4814.9 |
| 75° | 204.9 | 204.9 | 233.1 | 325.3 | 430.3 | 435.4 | 1162.7 | 3849.3 | 4748.3 | 5378.3 | 4015.8 |
| 77.5° | 153.7 | 158.8 | 171.6 | 225.4 | 320.1 | 312.5 | 548.1 | 2548.3 | 3088.7 | 3506.2 | 2471.5 |
| 80° | 110.1 | 112.7 | 120.4 | 138.3 | 212.6 | 202.3 | 276.6 | 1229.3 | 1472.6 | 1567.4 | 1009.1 |
| 82.5° | 69.1 | 69.1 | 84.5 | 84.5 | 120.4 | 125.5 | 125.5 | 496.9 | 594.2 | 665.9 | 338.1 |
| 85° | 12.8 | 12.8 | 25.6 | 33.3 | 38.4 | 43.5 | 38.4 | 125.5 | 171.6 | 202.3 | 115.2 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.6 | 2.6 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 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° | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 | 888.7 |
| 2.5° | 896.4 | 891.3 | 878.5 | 863.1 | 852.8 | 842.6 | 834.9 | 829.8 | 827.2 | 827.2 | 824.7 |
| 5° | 909.2 | 893.8 | 868.2 | 842.6 | 819.6 | 801.6 | 788.8 | 781.1 | 776.0 | 778.6 | 773.5 |
| 7.5° | 929.7 | 901.5 | 855.4 | 814.4 | 783.7 | 760.6 | 750.4 | 745.3 | 747.8 | 750.4 | 750.4 |
| 10° | 945.0 | 906.6 | 832.4 | 776.0 | 747.8 | 735.0 | 732.5 | 737.6 | 745.3 | 747.8 | 745.3 |
| 12.5° | 963.0 | 909.2 | 806.7 | 742.7 | 724.8 | 717.1 | 729.9 | 742.7 | 755.5 | 765.8 | 760.6 |
| 15° | 991.1 | 909.2 | 776.0 | 714.5 | 701.7 | 709.4 | 732.5 | 750.4 | 773.5 | 783.7 | 786.3 |
| 17.5° | 1011.6 | 901.5 | 737.6 | 683.8 | 681.3 | 701.7 | 735.0 | 765.8 | 788.8 | 806.7 | 806.7 |
| 20° | 1032.1 | 888.7 | 699.2 | 655.6 | 665.9 | 694.1 | 732.5 | 768.3 | 796.5 | 814.4 | 819.6 |
| 22.5° | 1057.7 | 870.8 | 660.8 | 630.0 | 648.0 | 683.8 | 724.8 | 755.5 | 781.1 | 796.5 | 799.1 |
| 25° | 1075.7 | 840.0 | 622.3 | 609.5 | 637.7 | 671.0 | 701.7 | 722.2 | 735.0 | 745.3 | 745.3 |
| 27.5° | 1085.9 | 804.2 | 591.6 | 594.2 | 624.9 | 653.1 | 668.4 | 668.4 | 673.6 | 673.6 | 671.0 |
| 30° | 1073.1 | 765.8 | 568.6 | 578.8 | 607.0 | 627.5 | 632.6 | 622.3 | 607.0 | 591.6 | 586.5 |
| 32.5° | 1068.0 | 714.5 | 545.5 | 563.4 | 583.9 | 594.2 | 591.6 | 576.2 | 548.1 | 525.0 | 525.0 |
| 35° | 1057.7 | 665.9 | 525.0 | 545.5 | 558.3 | 560.9 | 555.8 | 532.7 | 507.1 | 486.6 | 484.0 |
| 37.5° | 1050.1 | 627.5 | 507.1 | 525.0 | 532.7 | 535.3 | 525.0 | 504.5 | 489.2 | 473.8 | 471.2 |
| 40° | 1073.1 | 594.2 | 489.2 | 502.0 | 507.1 | 507.1 | 496.9 | 481.5 | 489.2 | 486.6 | 486.6 |
| 42.5° | 1116.6 | 581.4 | 471.2 | 478.9 | 484.0 | 489.2 | 481.5 | 468.7 | 486.6 | 471.2 | 476.4 |
| 45° | 1180.7 | 581.4 | 458.4 | 461.0 | 466.1 | 478.9 | 476.4 | 458.4 | 461.0 | 425.1 | 417.5 |
| 47.5° | 1275.4 | 596.7 | 448.2 | 440.5 | 453.3 | 471.2 | 463.6 | 443.1 | 422.6 | 394.4 | 391.8 |
| 50° | 1383.0 | 627.5 | 437.9 | 420.0 | 440.5 | 461.0 | 453.3 | 427.7 | 404.7 | 389.3 | 386.7 |
| 52.5° | 1490.6 | 665.9 | 430.3 | 399.5 | 417.5 | 455.9 | 453.3 | 425.1 | 391.8 | 381.6 | 379.0 |
| 55° | 1623.7 | 701.7 | 417.5 | 376.5 | 399.5 | 450.8 | 450.8 | 409.8 | 384.2 | 381.6 | 379.0 |
| 57.5° | 1774.8 | 747.8 | 397.0 | 345.7 | 376.5 | 435.4 | 432.8 | 399.5 | 379.0 | 373.9 | 376.5 |
| 60° | 1969.5 | 804.2 | 366.2 | 317.6 | 356.0 | 412.3 | 417.5 | 389.3 | 368.8 | 366.2 | 366.2 |
| 62.5° | 2299.9 | 909.2 | 330.4 | 292.0 | 330.4 | 381.6 | 394.4 | 371.4 | 356.0 | 358.6 | 361.1 |
| 65° | 2935.0 | 1106.4 | 289.4 | 268.9 | 304.8 | 348.3 | 373.9 | 353.4 | 338.1 | 348.3 | 348.3 |
| 67.5° | 3406.3 | 1193.5 | 256.1 | 245.9 | 279.2 | 322.7 | 350.9 | 332.9 | 317.6 | 330.4 | 330.4 |
| 70° | 3201.4 | 970.7 | 230.5 | 225.4 | 251.0 | 294.5 | 320.1 | 304.8 | 289.4 | 302.2 | 299.6 |
| 72.5° | 2842.8 | 770.9 | 202.3 | 202.3 | 222.8 | 261.2 | 289.4 | 274.0 | 253.5 | 258.7 | 256.1 |
| 75° | 2489.4 | 714.5 | 176.7 | 176.7 | 194.6 | 225.4 | 248.4 | 240.7 | 220.3 | 217.7 | 212.6 |
| 77.5° | 1436.8 | 476.4 | 148.5 | 151.1 | 158.8 | 187.0 | 210.0 | 187.0 | 171.6 | 169.0 | 166.5 |
| 80° | 566.0 | 233.1 | 120.4 | 117.8 | 117.8 | 140.9 | 151.1 | 140.9 | 128.1 | 125.5 | 120.4 |
| 82.5° | 204.9 | 117.8 | 92.2 | 82.0 | 84.5 | 102.4 | 117.8 | 110.1 | 99.9 | 79.4 | 74.3 |
| 85° | 79.4 | 58.9 | 61.5 | 48.7 | 53.8 | 53.8 | 61.5 | 51.2 | 35.9 | 25.6 | 25.6 |
| 87.5° | 5.1 | 5.1 | 5.1 | 5.1 | 2.6 | 2.6 | 0.0 | 0.0 | 2.6 | 2.6 | 2.6 |
| 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



#####

| 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)