

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P631790

Luminaire Tested: GWS-SA2B-735-U-T3R-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P631790
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA2B-735-U-T3R-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (32) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4269.1 lumens
Efficiency: N/A
Efficacy: 92.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G0

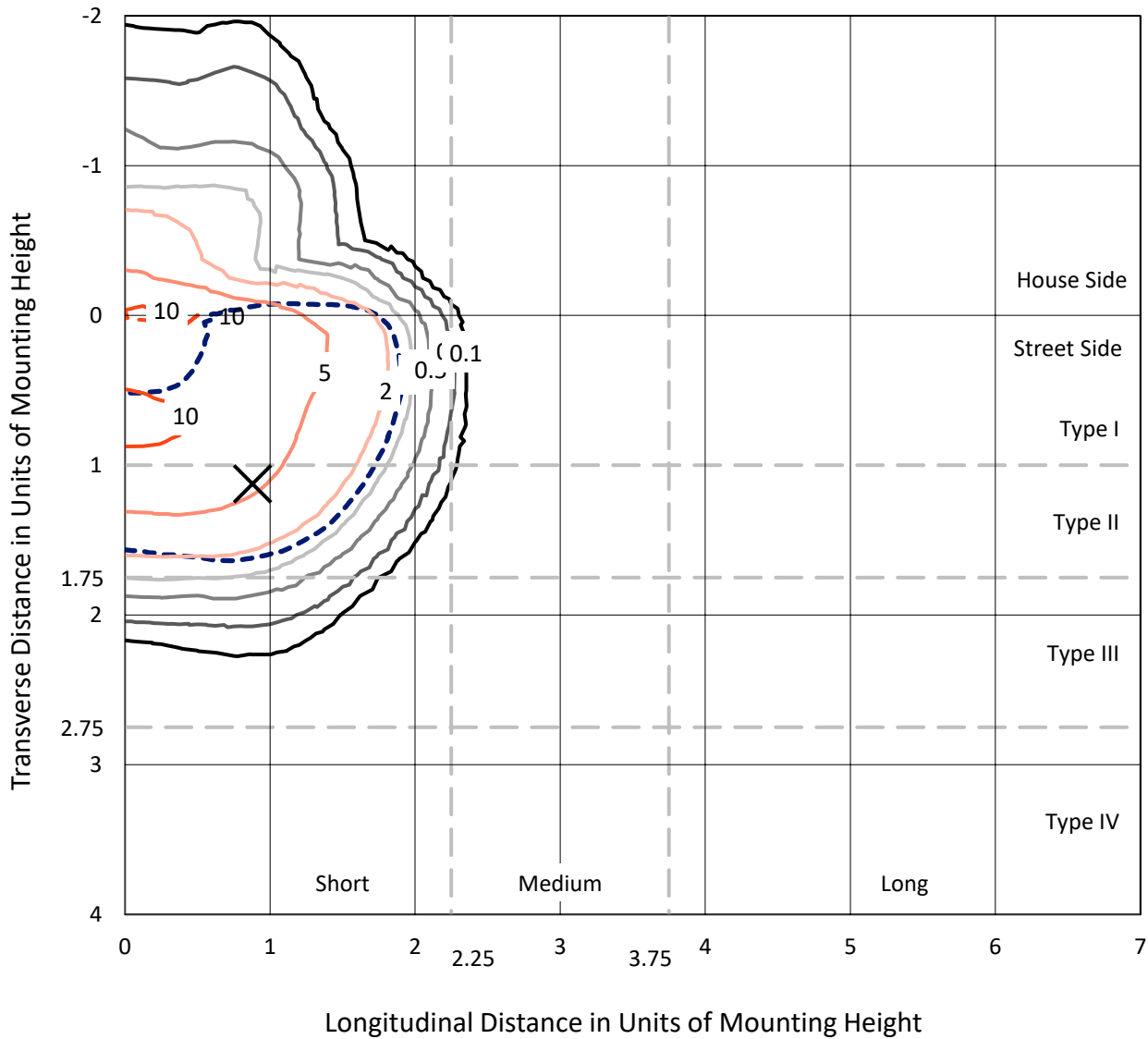
Input Watts (W): 46.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P631790
 CATALOG NUMBER: GWS-SA2B-735-U-T3R-W-GRSBK

Iso-Footcandle Lines of Horizontal Illumination

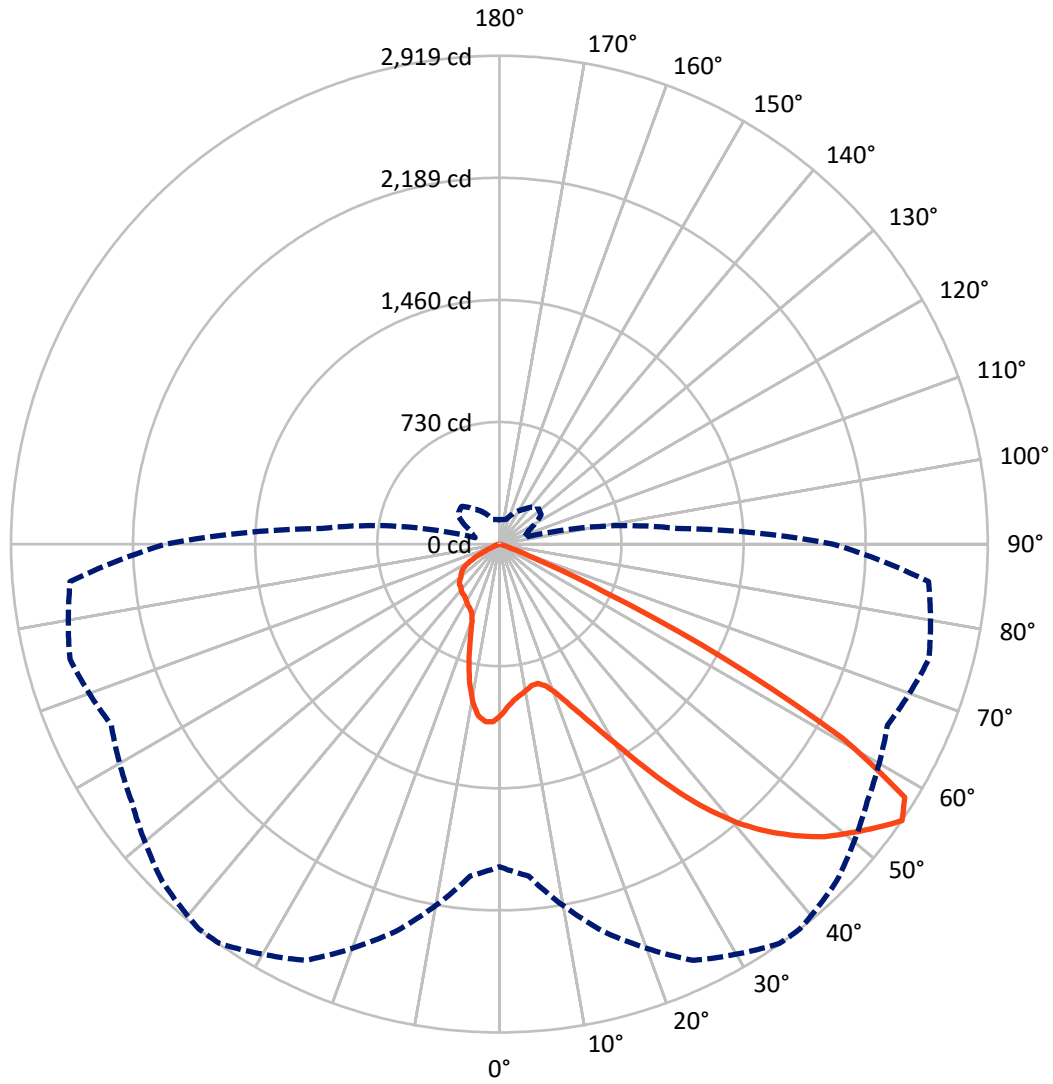
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.7 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 38-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 831.8 | 0.0 | 831.8 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| Street Side | Lumens | 3437.4 | 0.0 | 3437.4 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| Total | Lumens | 4269.1 | 0.0 | 4269.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 94.7 | 2.2 |
| 10°-20° | 254.8 | 6.0 |
| 20°-30° | 437.3 | 10.2 |
| 30°-40° | 725.3 | 17.0 |
| 40°-50° | 1066.3 | 25.0 |
| 50°-60° | 1245.9 | 29.2 |
| 60°-70° | 422.3 | 9.9 |
| 70°-80° | 21.6 | 0.5 |
| 80°-90° | 0.9 | 0.0 |
| 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° | 4269.1 | 100.0 |
| 0°-180° | 4269.1 | 100.0 |

Coefficient of Utilization



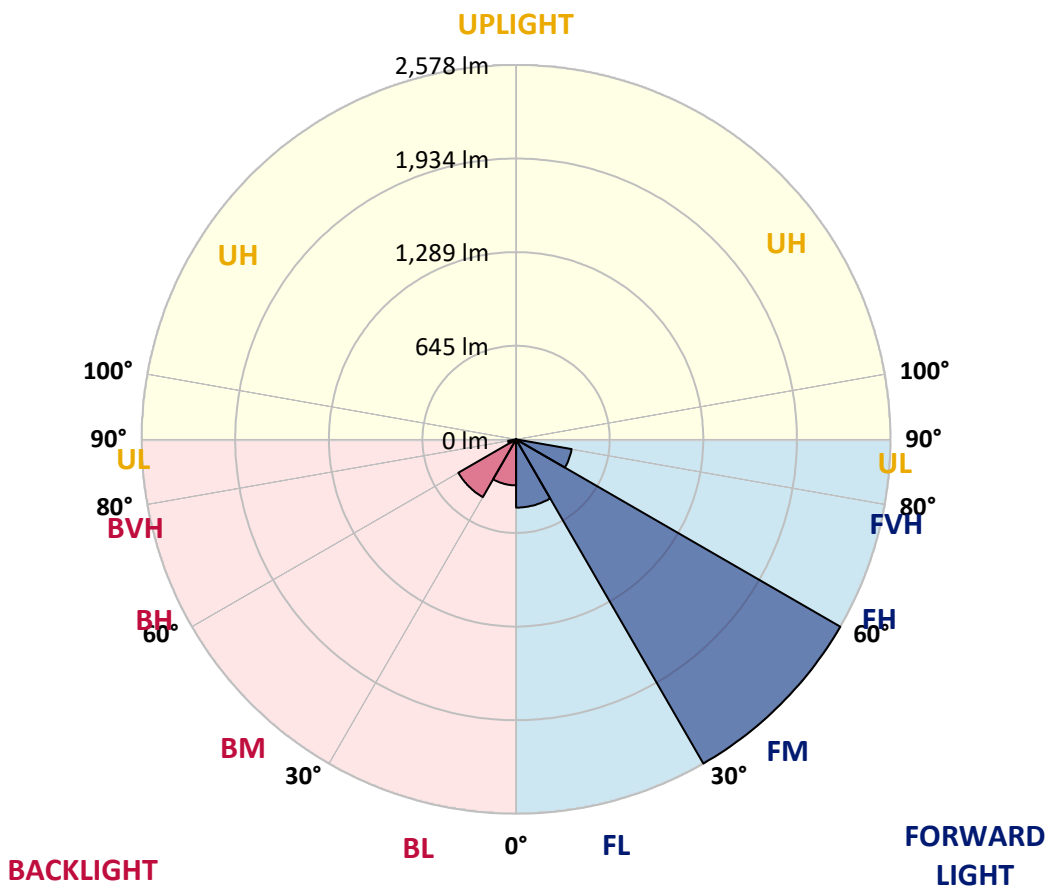
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 469.9 | 11.0 | | | |
| FM (30°-60°) | 2578.4 | 60.4 | | | |
| FH (60°-80°) | 388.6 | 9.1 | | | G0/660 |
| FVH (80°-90°) | 0.5 | 0.0 | | | G0/10 |
| BL (0°-30°) | 316.9 | 7.4 | B1/500 | | |
| BM (30°-60°) | 459.1 | 10.8 | B1/1000 | | |
| BH (60°-80°) | 55.4 | 1.3 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.4 | 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-G0
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 38° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 |
| 2.5° | 953.5 | 951.5 | 955.4 | 963.3 | 970.6 | 973.0 | 980.3 | 990.6 | 996.9 | 1012.1 | 1024.3 |
| 5° | 910.6 | 909.6 | 913.5 | 920.3 | 930.1 | 933.5 | 944.7 | 961.8 | 978.9 | 1005.2 | 1031.1 |
| 7.5° | 871.5 | 871.0 | 876.9 | 892.0 | 906.2 | 910.6 | 924.2 | 945.2 | 968.1 | 1008.6 | 1046.7 |
| 10° | 820.3 | 820.8 | 832.0 | 853.5 | 879.3 | 888.1 | 910.1 | 940.3 | 970.1 | 1022.3 | 1075.0 |
| 12.5° | 803.7 | 804.7 | 810.5 | 827.1 | 855.4 | 866.6 | 897.4 | 943.2 | 981.3 | 1041.8 | 1111.6 |
| 15° | 844.2 | 844.2 | 839.3 | 841.3 | 853.9 | 864.2 | 896.4 | 953.0 | 1000.3 | 1065.2 | 1147.7 |
| 17.5° | 922.8 | 919.8 | 907.6 | 891.0 | 886.6 | 890.1 | 915.9 | 974.0 | 1027.2 | 1092.6 | 1188.7 |
| 20° | 1029.1 | 1030.1 | 1006.2 | 971.5 | 943.7 | 943.2 | 958.9 | 1011.1 | 1065.7 | 1125.3 | 1233.1 |
| 22.5° | 1158.0 | 1154.1 | 1122.3 | 1075.0 | 1026.7 | 1022.8 | 1029.1 | 1067.7 | 1121.4 | 1177.0 | 1287.8 |
| 25° | 1307.3 | 1305.3 | 1260.4 | 1197.0 | 1133.1 | 1123.8 | 1123.8 | 1161.9 | 1200.9 | 1250.7 | 1353.1 |
| 27.5° | 1463.4 | 1463.4 | 1420.0 | 1346.8 | 1261.9 | 1245.3 | 1242.9 | 1287.8 | 1313.6 | 1323.4 | 1408.3 |
| 30° | 1624.0 | 1622.0 | 1579.1 | 1503.9 | 1413.2 | 1396.1 | 1389.3 | 1422.4 | 1441.0 | 1411.7 | 1477.1 |
| 32.5° | 1786.9 | 1790.4 | 1746.9 | 1677.2 | 1596.2 | 1584.9 | 1563.9 | 1563.9 | 1579.1 | 1538.1 | 1585.4 |
| 35° | 1962.1 | 1961.2 | 1927.0 | 1879.7 | 1810.4 | 1797.7 | 1763.0 | 1708.9 | 1731.8 | 1713.8 | 1735.2 |
| 37.5° | 2116.8 | 2124.1 | 2107.5 | 2072.4 | 2016.3 | 2003.6 | 1946.5 | 1848.4 | 1866.0 | 1894.3 | 1913.3 |
| 40° | 2273.9 | 2279.8 | 2296.4 | 2285.2 | 2214.4 | 2191.0 | 2089.5 | 1928.5 | 1948.0 | 2045.1 | 2099.7 |
| 42.5° | 2428.1 | 2431.1 | 2464.7 | 2483.3 | 2388.6 | 2347.6 | 2197.8 | 1977.3 | 1997.8 | 2163.2 | 2258.8 |
| 45° | 2526.2 | 2532.6 | 2588.2 | 2644.8 | 2542.3 | 2486.2 | 2292.0 | 2039.7 | 2048.5 | 2245.2 | 2376.4 |
| 47.5° | 2522.3 | 2537.0 | 2641.4 | 2744.3 | 2674.6 | 2614.1 | 2405.2 | 2139.8 | 2125.1 | 2322.3 | 2454.0 |
| 50° | 2443.8 | 2461.3 | 2611.1 | 2774.6 | 2769.7 | 2713.6 | 2531.1 | 2284.7 | 2238.8 | 2390.6 | 2463.8 |
| 52.5° | 2280.8 | 2331.5 | 2557.9 | 2778.5 | 2846.3 | 2818.0 | 2686.8 | 2479.9 | 2392.5 | 2488.7 | 2479.4 |
| 55° | 1928.5 | 1990.9 | 2396.4 | 2745.3 | 2915.6 | 2919.0 | 2850.2 | 2683.4 | 2559.4 | 2657.5 | 2575.5 |
| 57.5° | 1463.9 | 1513.7 | 1844.5 | 2443.8 | 2801.0 | 2857.1 | 2913.7 | 2790.7 | 2662.4 | 2772.7 | 2598.0 |
| 60° | 882.3 | 939.8 | 1155.0 | 1793.3 | 2262.2 | 2357.9 | 2579.9 | 2556.0 | 2401.3 | 2448.6 | 2130.5 |
| 62.5° | 357.7 | 387.9 | 533.4 | 988.1 | 1423.9 | 1513.2 | 1726.0 | 1762.1 | 1724.0 | 1675.7 | 1292.1 |
| 65° | 130.8 | 143.0 | 213.7 | 408.4 | 654.9 | 687.6 | 799.8 | 863.7 | 916.4 | 780.3 | 480.7 |
| 67.5° | 81.0 | 88.8 | 139.1 | 209.8 | 238.1 | 221.5 | 225.4 | 268.9 | 256.7 | 158.6 | 85.9 |
| 70° | 60.0 | 66.4 | 108.8 | 145.4 | 96.1 | 74.2 | 50.3 | 53.7 | 48.3 | 42.5 | 42.0 |
| 72.5° | 41.5 | 47.3 | 81.5 | 85.9 | 37.1 | 26.4 | 18.5 | 25.9 | 29.3 | 28.8 | 29.8 |
| 75° | 27.3 | 31.7 | 51.2 | 33.7 | 9.3 | 7.3 | 6.3 | 13.7 | 17.6 | 17.6 | 18.1 |
| 77.5° | 16.1 | 18.5 | 18.1 | 6.8 | 2.0 | 2.0 | 1.5 | 2.4 | 3.9 | 4.4 | 5.4 |
| 80° | 2.0 | 1.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 | 1.5 |
| 82.5° | 0.5 | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 |
| 85° | 0.0 | 0.0 | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 |
| 87.5° | 0.0 | 0.0 | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P631790

CATALOG NUMBER: GWS-SA2B-735-U-T3R-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 | 1023.8 |
| 2.5° | 1033.5 | 1030.1 | 1044.3 | 1054.5 | 1062.8 | 1066.7 | 1061.3 | 1060.8 | 1060.8 | 1050.1 | 1047.2 |
| 5° | 1045.7 | 1047.2 | 1067.2 | 1076.0 | 1077.4 | 1072.6 | 1060.4 | 1052.1 | 1047.2 | 1036.0 | 1029.6 |
| 7.5° | 1069.1 | 1074.0 | 1093.1 | 1091.6 | 1078.4 | 1056.0 | 1023.8 | 998.9 | 982.8 | 965.2 | 954.5 |
| 10° | 1102.8 | 1112.1 | 1123.8 | 1103.3 | 1061.3 | 1004.2 | 937.9 | 890.5 | 862.2 | 842.2 | 830.0 |
| 12.5° | 1143.8 | 1153.1 | 1149.2 | 1100.9 | 1013.5 | 911.5 | 826.1 | 757.8 | 725.1 | 707.1 | 694.4 |
| 15° | 1185.3 | 1191.1 | 1165.8 | 1071.6 | 929.1 | 792.0 | 696.8 | 629.0 | 589.0 | 574.3 | 563.6 |
| 17.5° | 1227.7 | 1226.3 | 1168.7 | 1014.0 | 816.4 | 657.3 | 563.6 | 517.2 | 506.0 | 503.6 | 502.6 |
| 20° | 1272.1 | 1259.0 | 1157.0 | 931.5 | 680.7 | 524.1 | 470.9 | 473.8 | 494.3 | 504.1 | 506.0 |
| 22.5° | 1322.9 | 1289.7 | 1127.7 | 819.8 | 542.1 | 436.7 | 442.1 | 470.9 | 498.7 | 511.9 | 513.8 |
| 25° | 1377.1 | 1318.0 | 1078.9 | 676.3 | 427.5 | 401.6 | 433.3 | 466.5 | 496.3 | 512.4 | 514.3 |
| 27.5° | 1412.7 | 1324.8 | 998.9 | 531.9 | 367.0 | 387.9 | 421.6 | 453.3 | 484.1 | 501.6 | 504.1 |
| 30° | 1451.2 | 1321.9 | 890.1 | 409.9 | 346.5 | 376.2 | 405.5 | 434.3 | 462.6 | 482.1 | 484.1 |
| 32.5° | 1507.8 | 1320.0 | 757.3 | 332.8 | 338.2 | 367.0 | 388.4 | 412.3 | 431.9 | 443.1 | 441.6 |
| 35° | 1582.0 | 1317.5 | 602.6 | 300.1 | 333.3 | 359.6 | 376.7 | 387.9 | 366.5 | 359.6 | 361.1 |
| 37.5° | 1677.2 | 1323.4 | 472.4 | 286.4 | 331.8 | 357.7 | 372.3 | 340.1 | 306.9 | 294.2 | 292.3 |
| 40° | 1782.6 | 1338.5 | 360.1 | 281.1 | 336.7 | 362.6 | 355.7 | 302.5 | 261.6 | 236.7 | 231.3 |
| 42.5° | 1888.4 | 1355.1 | 285.0 | 279.1 | 345.0 | 376.2 | 328.4 | 275.2 | 213.7 | 199.6 | 197.6 |
| 45° | 1967.0 | 1352.2 | 246.4 | 275.7 | 352.3 | 384.0 | 321.1 | 236.2 | 190.8 | 184.5 | 184.9 |
| 47.5° | 2006.5 | 1320.0 | 225.4 | 267.9 | 355.2 | 376.2 | 303.0 | 220.1 | 175.2 | 182.0 | 187.9 |
| 50° | 1985.6 | 1236.5 | 205.9 | 252.8 | 348.9 | 366.0 | 274.2 | 207.9 | 167.4 | 195.7 | 208.9 |
| 52.5° | 1960.2 | 1134.0 | 184.5 | 229.3 | 333.8 | 351.8 | 263.0 | 204.5 | 162.5 | 188.8 | 198.6 |
| 55° | 1993.8 | 1069.1 | 149.3 | 193.2 | 304.0 | 318.6 | 254.2 | 204.0 | 151.3 | 146.9 | 145.4 |
| 57.5° | 1946.5 | 939.8 | 106.9 | 139.1 | 233.3 | 252.3 | 247.9 | 200.6 | 134.2 | 133.7 | 135.7 |
| 60° | 1504.4 | 573.4 | 73.2 | 88.3 | 143.0 | 161.0 | 225.0 | 191.8 | 115.6 | 106.4 | 106.9 |
| 62.5° | 854.9 | 244.0 | 50.3 | 54.7 | 73.2 | 86.9 | 171.8 | 174.2 | 106.9 | 101.5 | 106.9 |
| 65° | 297.7 | 87.3 | 39.0 | 36.6 | 40.5 | 46.4 | 98.6 | 134.7 | 97.1 | 87.8 | 88.8 |
| 67.5° | 61.5 | 43.4 | 34.6 | 30.3 | 30.3 | 30.3 | 50.3 | 83.9 | 80.0 | 69.8 | 70.8 |
| 70° | 39.0 | 37.1 | 30.3 | 25.9 | 24.9 | 22.9 | 28.8 | 46.4 | 55.1 | 50.7 | 51.2 |
| 72.5° | 28.8 | 28.3 | 23.9 | 21.0 | 18.5 | 16.6 | 18.1 | 22.9 | 28.3 | 29.3 | 29.8 |
| 75° | 17.6 | 18.1 | 15.6 | 13.2 | 11.7 | 10.2 | 10.7 | 10.7 | 10.7 | 9.8 | 10.7 |
| 77.5° | 5.4 | 5.9 | 4.9 | 3.9 | 3.4 | 3.4 | 3.4 | 2.9 | 2.4 | 1.5 | 1.5 |
| 80° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 0.5 | 0.5 | 0.0 | 0.0 |
| 82.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 85° | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 0.5 | 0.5 | 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 |

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-7
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/04/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-735-U-T2**
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

Spectral Parameters

CCT (K): 3388
 CIE u': 0.2371
 CIE v': 0.5177
 Duv: 0.0032
 CIE x: 0.4153
 CIE y: 0.4030
 CIE z: 0.1817
 Peak Wavelength (nm): 590
 Dominant Wavelength (nm): 580
 Purity: 45.7
 Rf: 76.9
 Rg: 94.4

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 | | |
| R1: | 68.9 | R9: | -34.6 |
| R2: | 81.1 | R10: | 57.8 |
| R3: | 93.1 | R11: | 68.6 |
| R4: | 71.6 | R12: | 53.9 |
| R5: | 69.4 | R13: | 70.9 |
| R6: | 75.0 | R14: | 96.2 |
| R7: | 79.5 | | |
| R8: | 46.4 | | |

Test Conditions

Stabilization Time: 81M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0/30%
 Sphere Temperature (°C): 24.1



REPORT NUMBER: SP1-2101-121-7

| 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 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

Photopic Flux vs. Wavelength

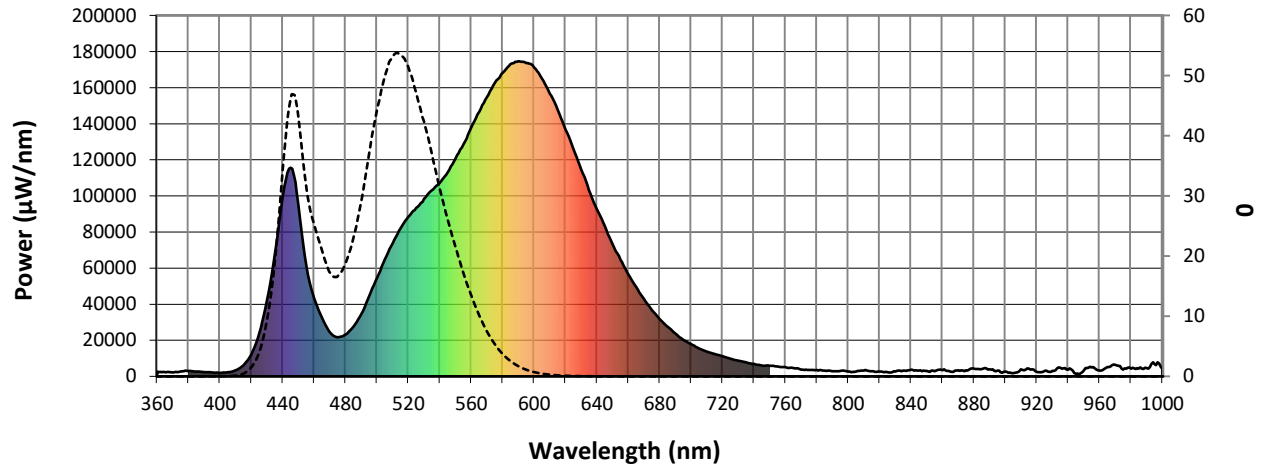


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| λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2672 | 0.0 | 490 | 34553 | 4.9 | 620 | 136720 | 35.6 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 8.0 | 625 | 126308 | 27.9 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 12.1 | 630 | 114625 | 20.7 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 18.1 | 635 | 103216 | 15.5 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 25.4 | 640 | 92605 | 11.1 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 33.9 | 645 | 83234 | 8.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 43.0 | 650 | 73263 | 5.4 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 50.1 | 655 | 64627 | 3.7 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 57.9 | 660 | 56614 | 2.4 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 64.0 | 665 | 49537 | 1.6 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.0 | 540 | 107316 | 69.9 | 670 | 42866 | 0.9 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.0 | 545 | 113101 | 75.3 | 675 | 36708 | 0.6 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 0.0 | 550 | 120690 | 82.0 | 680 | 31814 | 0.4 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 0.1 | 555 | 128583 | 87.8 | 685 | 27485 | 0.2 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 0.3 | 560 | 137796 | 93.6 | 690 | 23698 | 0.1 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 0.8 | 565 | 146577 | 97.5 | 695 | 20309 | 0.1 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 1.6 | 570 | 154581 | 100.5 | 700 | 17890 | 0.1 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 2.4 | 575 | 162633 | 101.2 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 2.5 | 580 | 168101 | 99.9 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 2.1 | 585 | 173145 | 96.2 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 1.8 | 590 | 174675 | 90.3 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 1.7 | 595 | 173724 | 82.3 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 1.5 | 600 | 171241 | 73.8 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 1.7 | 605 | 165134 | 64.0 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 2.2 | 610 | 156652 | 53.8 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 3.3 | 615 | 147879 | 44.6 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Scotopic Flux vs. Wavelength



Scotopic Lumens: 12126

S/P: 1.36

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 2672 | 0.0 | 490 | 34553 | 53.2 | 620 | 136720 | 1.7 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 71.7 | 625 | 126308 | 1.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 91.4 | 630 | 114625 | 0.6 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 110.0 | 635 | 103216 | 0.4 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 125.1 | 640 | 92605 | 0.2 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 135.7 | 645 | 83234 | 0.1 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 140.8 | 650 | 73263 | 0.1 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 139.6 | 655 | 64627 | 0.1 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 135.7 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.1 | 535 | 103269 | 128.7 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.2 | 540 | 107316 | 118.6 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.6 | 545 | 113101 | 108.4 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 2.0 | 550 | 120690 | 98.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 5.9 | 555 | 128583 | 87.9 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 14.3 | 560 | 137796 | 77.0 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 30.5 | 565 | 146577 | 65.8 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 55.5 | 570 | 154581 | 54.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 77.4 | 575 | 162633 | 44.3 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 73.6 | 580 | 168101 | 34.6 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 53.7 | 585 | 173145 | 26.5 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 41.9 | 590 | 174675 | 19.5 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 34.3 | 595 | 173724 | 13.9 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 27.9 | 600 | 171241 | 9.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 27.1 | 605 | 165134 | 6.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 31.3 | 610 | 156652 | 4.2 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 40.0 | 615 | 147879 | 2.7 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: 4490.7 M/P: 0.5

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2672 | 0.0 | 490 | 34553 | 28.8 | 620 | 136720 | 0.1 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 36.6 | 625 | 126308 | 0.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 43.9 | 630 | 114625 | 0.0 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 49.6 | 635 | 103216 | 0.0 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 53.0 | 640 | 92605 | 0.0 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 53.5 | 645 | 83234 | 0.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 51.6 | 650 | 73263 | 0.0 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 47.3 | 655 | 64627 | 0.0 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 42.5 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 37.2 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.1 | 540 | 107316 | 31.4 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.4 | 545 | 113101 | 26.3 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 1.4 | 550 | 120690 | 21.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 3.7 | 555 | 128583 | 17.3 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 8.9 | 560 | 137796 | 13.6 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 18.2 | 565 | 146577 | 10.3 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 33.2 | 570 | 154581 | 7.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 45.6 | 575 | 162633 | 5.4 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 43.8 | 580 | 168101 | 3.8 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 32.2 | 585 | 173145 | 2.6 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 25.6 | 590 | 174675 | 1.7 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 21.2 | 595 | 173724 | 1.1 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 17.4 | 600 | 171241 | 0.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 16.6 | 605 | 165134 | 0.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 18.6 | 610 | 156652 | 0.3 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 22.7 | 615 | 147879 | 0.2 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

Summary

$R_f = 76.9$
 $R_g = 94.4$
 $CIE R_a = 73.1$
 $R_g = -34.6$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)