

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: P630858

Luminaire Tested: GWS-SA1E-740-U-T3R-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P630858
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-15)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1E-740-U-T3R-W
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS
Light Source: (16) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7703.3 lumens
Efficiency: N/A
Efficacy: 131.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G2

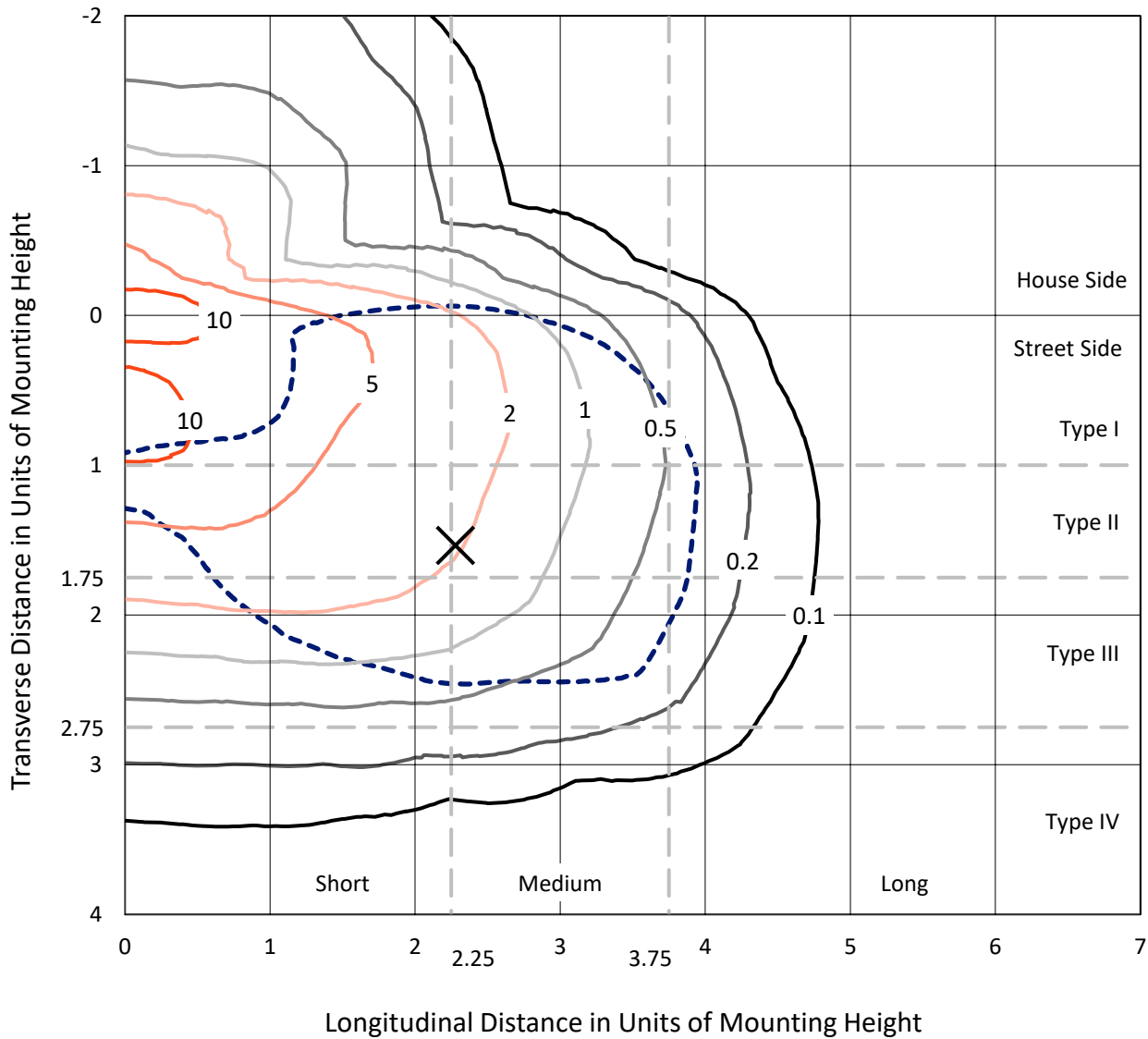
Input Watts (W): 58.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P630858
 CATALOG NUMBER: GWS-SA1E-740-U-T3R-W

Iso-Footcandle Lines of Horizontal Illumination

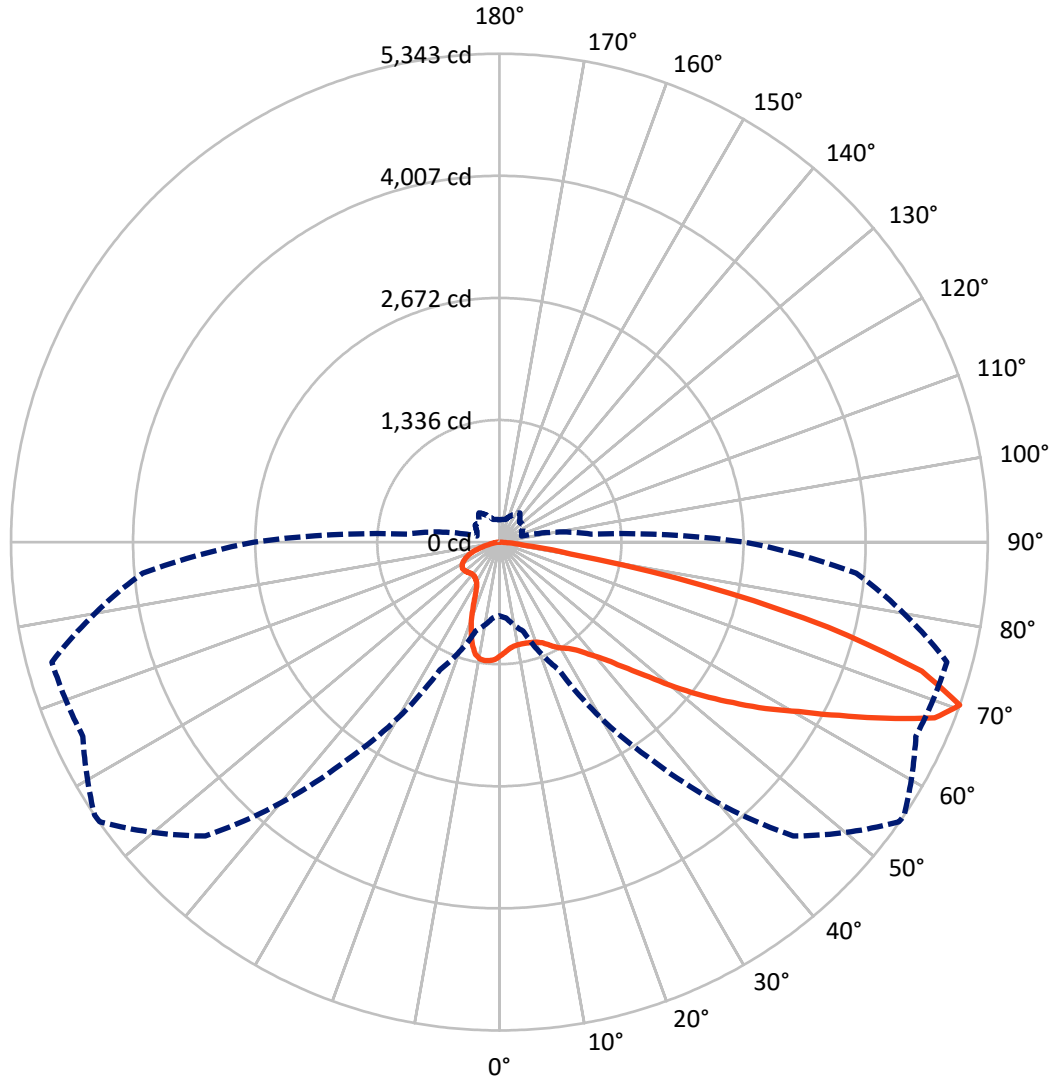
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.9 fc
 Type III - Medium - N/A

REPORT NUMBER: P630858
CATALOG NUMBER: GWS-SA1E-740-U-T3R-W

Luminous Intensity Polar Plot



— Vertical Plane Through 56-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

REPORT NUMBER: P630858

CATALOG NUMBER: GWS-SA1E-740-U-T3R-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1481.0 | 0.0 | 1481.0 |
| | % Fixture | 19.2 | 0.0 | 19.2 |
| Street Side | Lumens | 6222.3 | 0.0 | 6222.3 |
| | % Fixture | 80.8 | 0.0 | 80.8 |
| Total | Lumens | 7703.3 | 0.0 | 7703.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 115.1 | 1.5 |
| 10°-20° | 311.8 | 4.0 |
| 20°-30° | 515.4 | 6.7 |
| 30°-40° | 770.7 | 10.0 |
| 40°-50° | 1146.8 | 14.9 |
| 50°-60° | 1630.5 | 21.2 |
| 60°-70° | 2019.4 | 26.2 |
| 70°-80° | 1115.1 | 14.5 |
| 80°-90° | 78.5 | 1.0 |
| 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° | 7703.3 | 100.0 |
| 0°-180° | 7703.3 | 100.0 |

Coefficient of Utilization



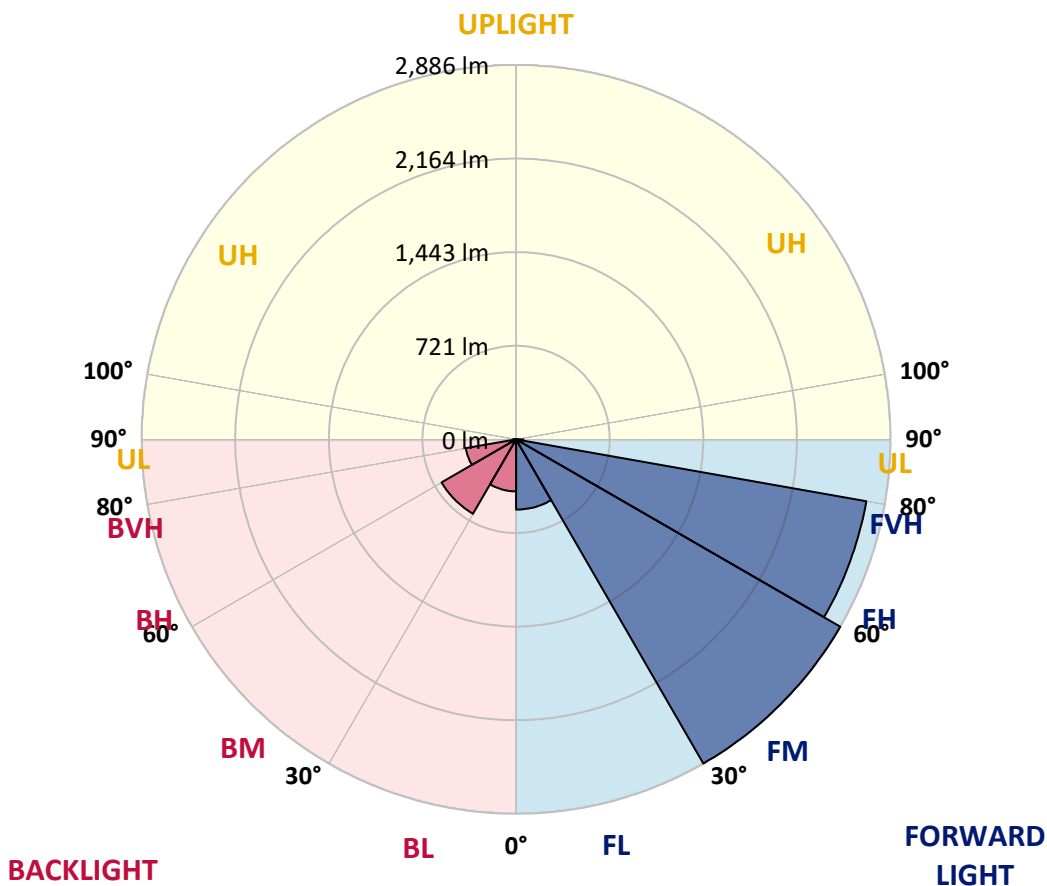
REPORT NUMBER: P630858

CATALOG NUMBER: GWS-SA1E-740-U-T3R-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 541.4 | 7.0 | | | |
| FM (30°-60°) | 2885.5 | 37.5 | | | |
| FH (60°-80°) | 2740.8 | 35.6 | | | G2/5000 |
| FVH (80°-90°) | 54.6 | 0.7 | | | G1/100 |
| BL (0°-30°) | 400.9 | 5.2 | B1/500 | | |
| BM (30°-60°) | 662.5 | 8.6 | B1/1000 | | |
| BH (60°-80°) | 393.6 | 5.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 24.0 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 56° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 |
| 2.5° | 1163.6 | 1157.1 | 1164.7 | 1168.5 | 1178.2 | 1192.4 | 1204.9 | 1205.4 | 1211.9 | 1227.7 | 1242.9 |
| 5° | 1110.9 | 1107.6 | 1109.8 | 1121.2 | 1131.5 | 1149.5 | 1168.5 | 1170.1 | 1188.6 | 1219.5 | 1249.9 |
| 7.5° | 1070.1 | 1065.8 | 1073.9 | 1088.6 | 1101.7 | 1121.7 | 1146.7 | 1148.9 | 1175.0 | 1221.7 | 1268.4 |
| 10° | 1011.5 | 1008.2 | 1023.4 | 1043.0 | 1071.2 | 1104.4 | 1137.5 | 1140.2 | 1174.4 | 1235.8 | 1301.0 |
| 12.5° | 985.9 | 985.9 | 992.5 | 1010.9 | 1041.9 | 1085.9 | 1135.9 | 1140.2 | 1183.1 | 1257.6 | 1342.8 |
| 15° | 1025.6 | 1028.3 | 1022.9 | 1021.8 | 1034.3 | 1076.1 | 1138.0 | 1144.6 | 1199.4 | 1279.8 | 1384.1 |
| 17.5° | 1105.5 | 1108.2 | 1094.0 | 1071.8 | 1059.3 | 1085.4 | 1146.2 | 1153.3 | 1216.8 | 1304.3 | 1428.7 |
| 20° | 1217.4 | 1220.6 | 1189.7 | 1155.4 | 1112.5 | 1112.0 | 1161.9 | 1168.5 | 1239.1 | 1330.9 | 1475.9 |
| 22.5° | 1348.3 | 1350.4 | 1311.3 | 1257.0 | 1191.3 | 1161.4 | 1189.1 | 1195.6 | 1267.9 | 1367.8 | 1527.0 |
| 25° | 1499.8 | 1506.3 | 1459.1 | 1380.3 | 1291.2 | 1229.3 | 1234.2 | 1241.8 | 1319.5 | 1417.3 | 1587.3 |
| 27.5° | 1661.7 | 1669.9 | 1615.5 | 1528.6 | 1405.9 | 1304.3 | 1292.3 | 1298.8 | 1374.3 | 1447.7 | 1619.3 |
| 30° | 1827.4 | 1833.4 | 1779.0 | 1679.6 | 1529.2 | 1389.0 | 1341.2 | 1345.0 | 1398.2 | 1462.3 | 1651.9 |
| 32.5° | 2011.5 | 2006.7 | 1954.5 | 1839.9 | 1671.5 | 1490.6 | 1386.8 | 1385.8 | 1424.9 | 1491.7 | 1698.6 |
| 35° | 2184.3 | 2191.4 | 2135.9 | 2009.4 | 1827.9 | 1616.1 | 1455.3 | 1450.9 | 1481.4 | 1539.5 | 1764.4 |
| 37.5° | 2393.4 | 2391.3 | 2325.0 | 2188.1 | 1984.9 | 1736.1 | 1551.4 | 1543.8 | 1554.7 | 1613.9 | 1856.2 |
| 40° | 2542.8 | 2558.0 | 2515.1 | 2387.5 | 2168.5 | 1883.9 | 1663.9 | 1647.0 | 1649.8 | 1705.7 | 1979.0 |
| 42.5° | 2665.0 | 2679.2 | 2683.5 | 2602.0 | 2378.8 | 2066.4 | 1804.0 | 1787.2 | 1788.8 | 1868.1 | 2130.0 |
| 45° | 2759.0 | 2778.0 | 2839.4 | 2815.5 | 2615.6 | 2277.2 | 1993.6 | 1976.2 | 1977.3 | 2065.3 | 2312.5 |
| 47.5° | 2797.6 | 2818.2 | 2942.6 | 2999.7 | 2867.1 | 2529.2 | 2229.4 | 2203.8 | 2207.6 | 2304.9 | 2521.1 |
| 50° | 2785.1 | 2812.8 | 2981.2 | 3141.4 | 3077.9 | 2785.6 | 2511.3 | 2493.4 | 2478.7 | 2620.0 | 2747.6 |
| 52.5° | 2677.5 | 2708.0 | 2977.4 | 3231.6 | 3250.1 | 3027.9 | 2802.5 | 2792.2 | 2788.9 | 2954.6 | 3000.7 |
| 55° | 2360.8 | 2411.9 | 2846.5 | 3255.5 | 3384.8 | 3256.1 | 3118.1 | 3100.7 | 3117.5 | 3313.1 | 3256.6 |
| 57.5° | 2185.4 | 2223.4 | 2590.1 | 3228.9 | 3495.1 | 3473.4 | 3433.2 | 3434.8 | 3453.8 | 3702.6 | 3566.8 |
| 60° | 2085.4 | 2130.0 | 2447.8 | 3156.1 | 3601.0 | 3737.4 | 3762.9 | 3762.9 | 3797.1 | 4122.5 | 3881.9 |
| 62.5° | 1952.9 | 1998.0 | 2314.7 | 3016.0 | 3698.8 | 4048.1 | 4177.4 | 4175.7 | 4189.3 | 4572.8 | 4189.9 |
| 65° | 1684.0 | 1725.8 | 2047.4 | 2794.9 | 3746.6 | 4390.3 | 4648.3 | 4643.4 | 4616.3 | 4973.7 | 4393.6 |
| 67.5° | 1222.8 | 1262.4 | 1568.3 | 2374.4 | 3574.4 | 4666.3 | 5133.4 | 5135.6 | 4973.2 | 5226.3 | 4404.4 |
| 70° | 806.1 | 833.3 | 1008.2 | 1542.2 | 2906.8 | 4547.3 | 5336.6 | 5343.1 | 5028.0 | 5068.8 | 3919.9 |
| 72.5° | 503.0 | 522.0 | 629.6 | 919.7 | 1717.7 | 3599.4 | 4815.1 | 4833.0 | 4523.4 | 4454.4 | 3220.8 |
| 75° | 334.1 | 347.1 | 418.8 | 536.2 | 794.7 | 1948.0 | 3660.2 | 3717.8 | 3625.5 | 3491.8 | 2244.0 |
| 77.5° | 201.0 | 211.9 | 266.7 | 340.6 | 352.0 | 761.1 | 2136.5 | 2285.3 | 2298.4 | 1823.0 | 939.8 |
| 80° | 91.8 | 104.3 | 147.2 | 194.5 | 187.4 | 265.1 | 753.4 | 788.2 | 930.0 | 579.1 | 296.6 |
| 82.5° | 54.3 | 59.8 | 97.8 | 96.7 | 79.9 | 128.7 | 271.1 | 278.1 | 236.3 | 211.9 | 126.6 |
| 85° | 21.7 | 25.5 | 41.3 | 36.4 | 29.3 | 41.8 | 102.1 | 107.0 | 102.7 | 92.3 | 46.7 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.1 | 9.2 | 9.8 | 14.1 | 25.5 | 14.1 |
| 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: P630858
 CATALOG NUMBER: GWS-SA1E-740-U-T3R-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 | 1243.4 |
| 2.5° | 1252.7 | 1249.4 | 1265.7 | 1278.2 | 1283.6 | 1289.1 | 1284.2 | 1282.5 | 1282.5 | 1271.7 | 1266.2 |
| 5° | 1266.2 | 1267.9 | 1290.1 | 1300.5 | 1300.5 | 1296.1 | 1283.1 | 1273.9 | 1270.6 | 1256.5 | 1252.7 |
| 7.5° | 1291.8 | 1298.8 | 1319.5 | 1318.9 | 1303.7 | 1279.8 | 1247.2 | 1222.2 | 1199.4 | 1189.7 | 1183.7 |
| 10° | 1333.6 | 1342.8 | 1357.0 | 1334.1 | 1291.8 | 1228.8 | 1159.8 | 1105.5 | 1072.9 | 1046.8 | 1046.8 |
| 12.5° | 1381.4 | 1390.1 | 1387.4 | 1334.7 | 1247.2 | 1129.4 | 1029.9 | 967.5 | 921.8 | 897.9 | 897.9 |
| 15° | 1429.2 | 1436.3 | 1406.9 | 1309.7 | 1154.3 | 997.4 | 888.7 | 813.7 | 774.1 | 751.8 | 751.8 |
| 17.5° | 1477.6 | 1477.0 | 1415.1 | 1252.1 | 1033.2 | 851.2 | 744.8 | 686.6 | 673.0 | 669.2 | 668.7 |
| 20° | 1524.3 | 1511.8 | 1404.8 | 1156.0 | 892.5 | 704.0 | 636.7 | 640.5 | 660.6 | 669.2 | 670.3 |
| 22.5° | 1577.0 | 1546.0 | 1374.3 | 1033.2 | 732.8 | 601.9 | 606.2 | 637.7 | 667.1 | 680.1 | 681.7 |
| 25° | 1630.7 | 1575.3 | 1323.3 | 889.3 | 599.2 | 564.4 | 598.1 | 633.4 | 666.5 | 683.4 | 685.0 |
| 27.5° | 1652.5 | 1575.3 | 1236.4 | 722.5 | 528.0 | 548.7 | 585.6 | 619.8 | 654.6 | 674.1 | 677.9 |
| 30° | 1670.4 | 1561.8 | 1114.7 | 572.0 | 498.7 | 533.4 | 565.5 | 597.0 | 631.2 | 655.1 | 659.5 |
| 32.5° | 1695.4 | 1549.8 | 967.5 | 480.7 | 485.1 | 518.8 | 541.0 | 567.7 | 598.6 | 614.4 | 612.8 |
| 35° | 1724.7 | 1531.3 | 789.8 | 437.3 | 473.7 | 506.3 | 522.0 | 537.8 | 523.7 | 523.1 | 524.8 |
| 37.5° | 1766.6 | 1515.0 | 635.0 | 417.7 | 466.1 | 497.6 | 510.6 | 476.9 | 457.4 | 449.2 | 446.0 |
| 40° | 1826.8 | 1508.5 | 500.8 | 406.3 | 465.0 | 497.0 | 487.8 | 435.7 | 409.0 | 380.8 | 380.3 |
| 42.5° | 1902.9 | 1503.6 | 413.9 | 400.9 | 468.8 | 509.5 | 456.3 | 408.5 | 353.6 | 341.1 | 340.1 |
| 45° | 2000.7 | 1496.0 | 370.5 | 399.8 | 478.0 | 519.3 | 453.0 | 371.0 | 333.5 | 328.1 | 328.1 |
| 47.5° | 2118.6 | 1484.1 | 350.9 | 399.8 | 488.4 | 515.0 | 443.3 | 362.9 | 324.3 | 330.3 | 334.1 |
| 50° | 2253.8 | 1468.9 | 340.6 | 398.7 | 498.7 | 515.0 | 422.6 | 361.2 | 322.1 | 353.1 | 365.6 |
| 52.5° | 2398.3 | 1451.5 | 333.5 | 394.4 | 505.7 | 515.5 | 423.7 | 366.7 | 324.3 | 358.5 | 368.8 |
| 55° | 2558.0 | 1448.8 | 323.8 | 385.1 | 507.9 | 501.4 | 426.4 | 378.6 | 327.6 | 324.8 | 325.4 |
| 57.5° | 2759.6 | 1481.4 | 316.7 | 371.6 | 499.2 | 472.6 | 431.9 | 387.3 | 323.8 | 324.3 | 328.1 |
| 60° | 2970.3 | 1542.7 | 322.7 | 358.5 | 481.3 | 445.4 | 435.7 | 383.0 | 305.3 | 296.6 | 297.7 |
| 62.5° | 3149.6 | 1589.5 | 327.6 | 352.5 | 455.2 | 421.5 | 431.9 | 373.2 | 295.0 | 292.8 | 297.7 |
| 65° | 3224.6 | 1550.9 | 315.6 | 340.1 | 417.2 | 392.2 | 423.7 | 360.7 | 286.3 | 278.1 | 278.7 |
| 67.5° | 3141.4 | 1370.0 | 292.3 | 312.4 | 374.3 | 354.7 | 410.7 | 344.4 | 274.3 | 264.5 | 262.4 |
| 70° | 2683.5 | 1006.6 | 252.1 | 268.4 | 322.1 | 310.7 | 390.6 | 323.2 | 255.3 | 248.3 | 243.4 |
| 72.5° | 2162.6 | 712.7 | 209.1 | 213.5 | 252.6 | 261.8 | 355.8 | 296.6 | 233.6 | 213.5 | 206.4 |
| 75° | 1505.3 | 447.6 | 174.4 | 170.0 | 182.5 | 199.9 | 277.6 | 246.1 | 201.5 | 180.3 | 173.8 |
| 77.5° | 647.5 | 229.8 | 136.3 | 134.2 | 121.7 | 138.5 | 212.9 | 205.3 | 168.9 | 144.5 | 140.7 |
| 80° | 216.7 | 133.1 | 98.3 | 94.5 | 80.9 | 97.2 | 149.9 | 164.1 | 132.5 | 107.0 | 100.5 |
| 82.5° | 108.6 | 77.1 | 62.5 | 56.5 | 54.3 | 61.4 | 88.5 | 102.1 | 91.8 | 73.9 | 62.5 |
| 85° | 53.2 | 44.0 | 34.2 | 33.7 | 28.2 | 26.6 | 36.9 | 43.5 | 41.3 | 30.4 | 28.8 |
| 87.5° | 19.6 | 17.4 | 10.9 | 8.7 | 5.4 | 3.8 | 2.2 | 2.2 | 1.6 | 1.6 | 1.6 |
| 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

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

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



Test Conditions

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

REPORT NUMBER: SP1-2101-121-2

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

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

Photopic Flux vs. Wavelength



#####

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

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

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

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

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

Summary

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



Color Vector Graphics

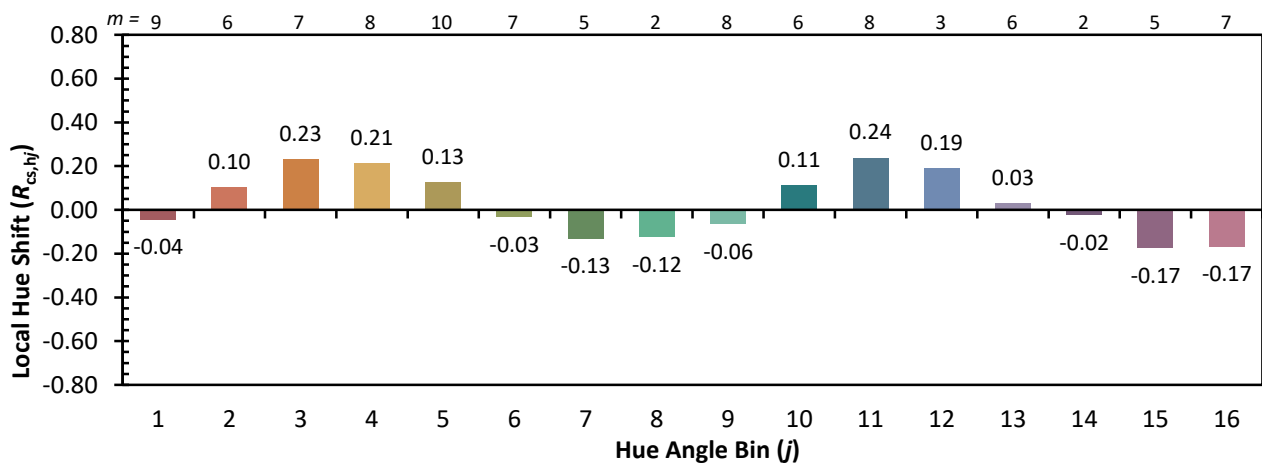


Individual Sample Fidelity Index ($R_{f,i}$)

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



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)