

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: P632748

Luminaire Tested: GWS-SA2D-735-U-RW-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P632748
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-49)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA2D-735-U-RW-W
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: (32) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11855 lumens
Efficiency: N/A
Efficacy: 144.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 82.1
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

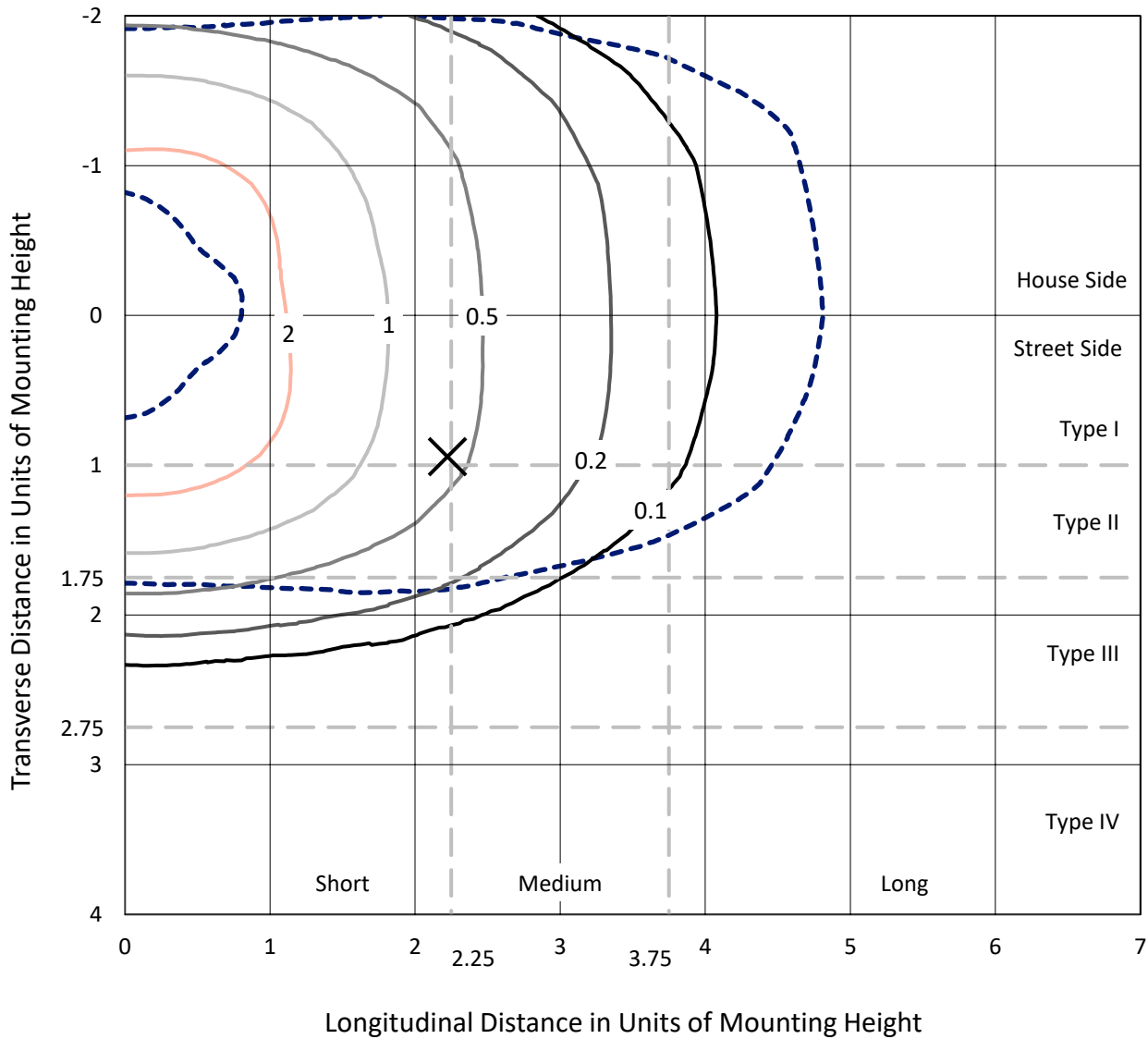


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CATALOG NUMBER: GWS-SA2D-735-U-RW-W

Iso-Footcandle Lines of Horizontal Illumination

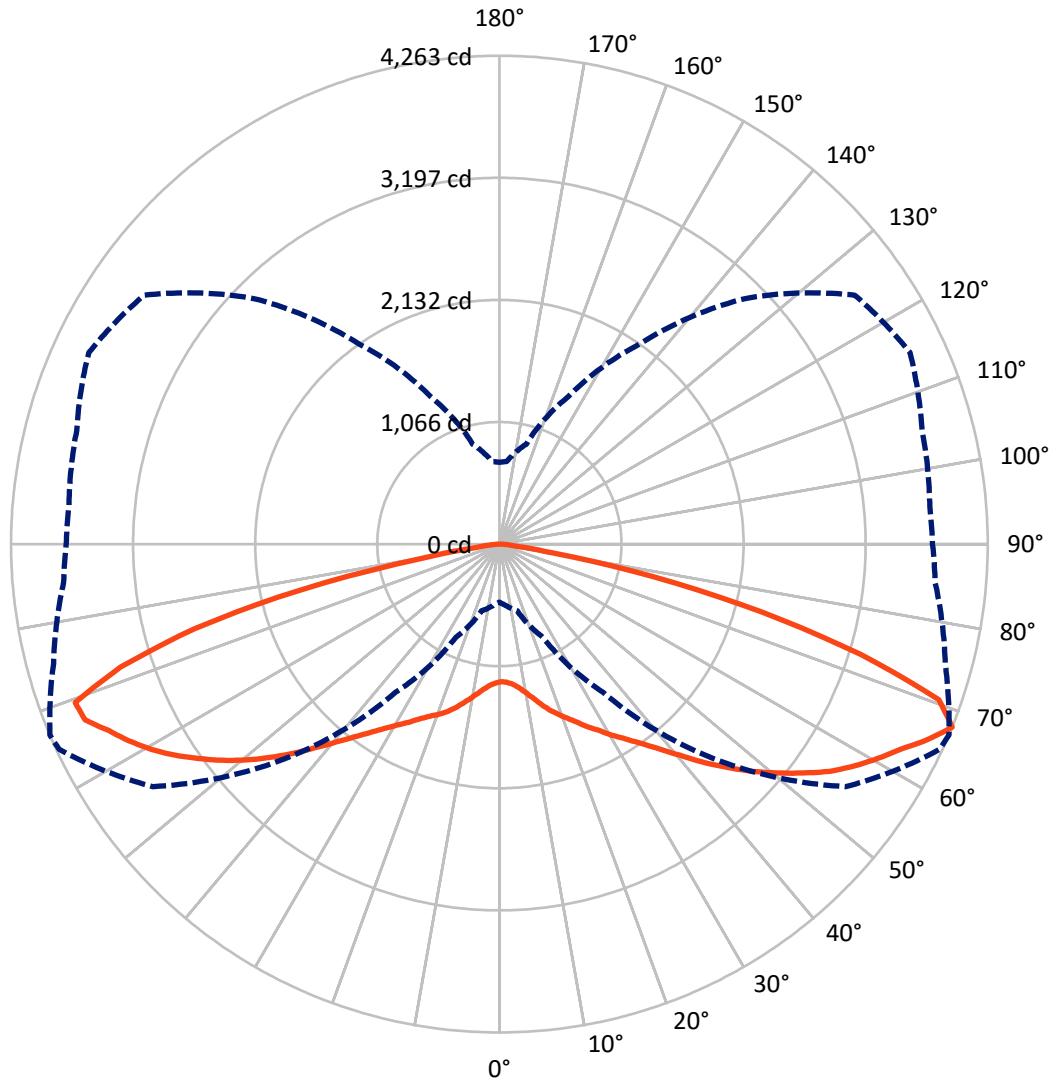
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.5 fc
 Type III - Short - N/A

REPORT NUMBER: P632748
CATALOG NUMBER: GWS-SA2D-735-U-RW-W

Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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CATALOG NUMBER: GWS-SA2D-735-U-RW-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5862.1 | 0.0 | 5862.1 |
| | % Fixture | 49.4 | 0.0 | 49.4 |
| Street Side | Lumens | 5992.9 | 0.0 | 5992.9 |
| | % Fixture | 50.6 | 0.0 | 50.6 |
| Total | Lumens | 11855.0 | 0.0 | 11855.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 117.8 | 1.0 |
| 10°-20° | 397.9 | 3.4 |
| 20°-30° | 780.6 | 6.6 |
| 30°-40° | 1330.0 | 11.2 |
| 40°-50° | 2135.6 | 18.0 |
| 50°-60° | 2901.9 | 24.5 |
| 60°-70° | 2775.9 | 23.4 |
| 70°-80° | 1319.7 | 11.1 |
| 80°-90° | 95.6 | 0.8 |
| 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° | 11855.0 | 100.0 |
| 0°-180° | 11855.0 | 100.0 |

Coefficient of Utilization



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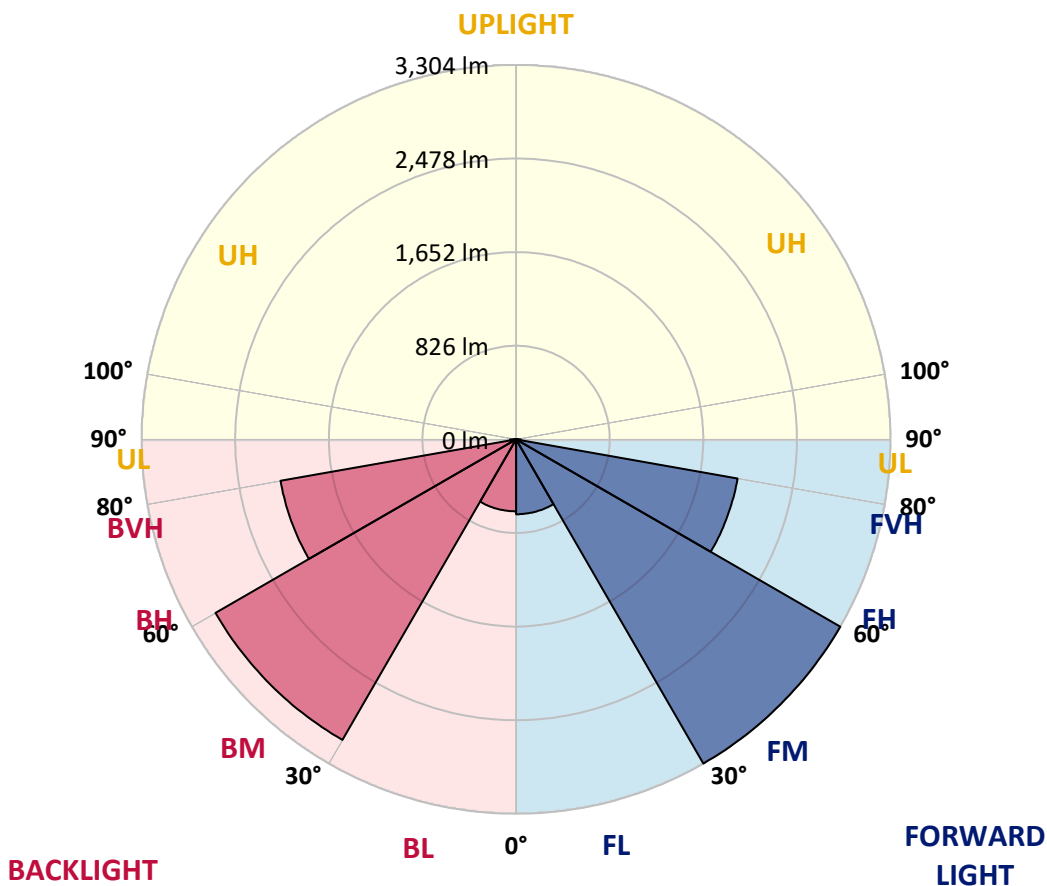
CATALOG NUMBER: GWS-SA2D-735-U-RW-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 661.0 | 5.6 | | | |
| FM (30°-60°) | 3304.1 | 27.9 | | | |
| FH (60°-80°) | 1984.8 | 16.7 | | | G2/5000 |
| FVH (80°-90°) | 43.0 | 0.4 | | | G1/100 |
| BL (0°-30°) | 635.3 | 5.4 | B2/1000 | | |
| BM (30°-60°) | 3063.4 | 25.8 | B3/5000 | | |
| BH (60°-80°) | 2110.8 | 17.8 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 52.7 | 0.4 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 |
| 2.5° | 1175.6 | 1177.3 | 1179.7 | 1184.7 | 1189.7 | 1197.1 | 1204.5 | 1203.7 | 1207.0 | 1209.5 | 1211.9 |
| 5° | 1169.0 | 1170.7 | 1174.8 | 1181.4 | 1188.8 | 1201.2 | 1216.9 | 1223.5 | 1228.5 | 1237.5 | 1245.8 |
| 7.5° | 1183.0 | 1186.4 | 1192.1 | 1201.2 | 1212.8 | 1228.5 | 1249.9 | 1261.5 | 1268.9 | 1285.4 | 1299.5 |
| 10° | 1202.0 | 1206.2 | 1217.7 | 1235.1 | 1252.4 | 1276.3 | 1303.6 | 1320.9 | 1325.9 | 1347.3 | 1373.8 |
| 12.5° | 1220.2 | 1225.2 | 1244.1 | 1275.5 | 1306.9 | 1339.1 | 1371.3 | 1392.7 | 1394.4 | 1423.3 | 1453.0 |
| 15° | 1249.1 | 1253.2 | 1278.8 | 1319.3 | 1367.2 | 1411.7 | 1451.4 | 1466.2 | 1472.8 | 1493.5 | 1530.6 |
| 17.5° | 1312.7 | 1317.6 | 1350.6 | 1394.4 | 1444.8 | 1491.8 | 1531.4 | 1543.8 | 1543.8 | 1561.2 | 1591.7 |
| 20° | 1381.2 | 1386.1 | 1429.9 | 1486.0 | 1547.1 | 1595.0 | 1625.6 | 1614.0 | 1609.9 | 1614.8 | 1636.3 |
| 22.5° | 1458.0 | 1467.0 | 1509.1 | 1574.4 | 1649.5 | 1708.1 | 1723.8 | 1689.1 | 1677.6 | 1666.0 | 1671.0 |
| 25° | 1556.2 | 1566.9 | 1608.2 | 1677.6 | 1751.0 | 1813.0 | 1822.0 | 1768.4 | 1761.8 | 1721.3 | 1706.5 |
| 27.5° | 1669.3 | 1677.6 | 1728.8 | 1797.3 | 1865.8 | 1917.8 | 1927.7 | 1861.7 | 1839.4 | 1783.2 | 1748.6 |
| 30° | 1815.4 | 1822.9 | 1867.4 | 1935.1 | 1994.6 | 2030.9 | 2043.3 | 1952.5 | 1935.1 | 1849.3 | 1795.6 |
| 32.5° | 1974.8 | 1978.1 | 2023.5 | 2088.7 | 2141.5 | 2176.2 | 2158.9 | 2053.2 | 2027.6 | 1931.0 | 1857.5 |
| 35° | 2157.2 | 2157.2 | 2215.8 | 2268.7 | 2310.8 | 2320.7 | 2287.7 | 2167.1 | 2137.4 | 2032.6 | 1940.9 |
| 37.5° | 2336.4 | 2341.3 | 2395.8 | 2458.6 | 2495.7 | 2494.1 | 2433.8 | 2301.7 | 2267.9 | 2153.9 | 2052.4 |
| 40° | 2530.4 | 2541.1 | 2595.6 | 2665.8 | 2701.3 | 2696.3 | 2603.9 | 2456.9 | 2422.2 | 2287.7 | 2188.6 |
| 42.5° | 2708.7 | 2726.0 | 2789.6 | 2861.4 | 2900.2 | 2896.9 | 2800.3 | 2635.2 | 2601.4 | 2449.5 | 2350.4 |
| 45° | 2850.7 | 2868.9 | 2948.1 | 3048.0 | 3109.9 | 3104.2 | 3006.7 | 2820.2 | 2778.9 | 2619.5 | 2510.6 |
| 47.5° | 2975.4 | 2994.4 | 3082.7 | 3188.4 | 3286.6 | 3296.5 | 3207.4 | 3006.7 | 2963.0 | 2802.0 | 2679.0 |
| 50° | 3071.1 | 3080.2 | 3179.3 | 3294.9 | 3408.8 | 3464.1 | 3386.5 | 3194.1 | 3141.3 | 2982.0 | 2843.3 |
| 52.5° | 3063.7 | 3076.1 | 3198.3 | 3355.1 | 3507.9 | 3598.7 | 3545.0 | 3370.8 | 3319.6 | 3146.3 | 3010.9 |
| 55° | 2912.6 | 2925.0 | 3070.3 | 3299.0 | 3563.2 | 3696.9 | 3691.1 | 3539.2 | 3502.1 | 3313.9 | 3185.1 |
| 57.5° | 2692.2 | 2719.4 | 2863.9 | 3110.8 | 3490.5 | 3775.4 | 3798.5 | 3692.8 | 3654.0 | 3478.1 | 3357.6 |
| 60° | 2297.6 | 2333.9 | 2500.7 | 2821.0 | 3257.7 | 3748.9 | 3913.2 | 3822.4 | 3798.5 | 3630.9 | 3513.6 |
| 62.5° | 1669.3 | 1695.7 | 1917.8 | 2338.0 | 2912.6 | 3560.7 | 4009.8 | 3956.2 | 3938.0 | 3767.9 | 3654.8 |
| 65° | 999.8 | 1060.0 | 1238.4 | 1653.6 | 2349.6 | 3205.7 | 3957.0 | 4131.2 | 4112.2 | 3909.1 | 3775.4 |
| 67.5° | 506.1 | 533.3 | 603.5 | 896.6 | 1580.1 | 2652.6 | 3692.0 | 4240.1 | 4263.3 | 4029.6 | 3818.3 |
| 70° | 313.7 | 321.1 | 341.0 | 442.5 | 789.2 | 1742.8 | 3019.1 | 3956.2 | 4069.3 | 4010.6 | 3706.8 |
| 72.5° | 251.8 | 253.5 | 256.8 | 275.7 | 378.9 | 814.8 | 1908.7 | 3098.4 | 3302.3 | 3745.6 | 3547.5 |
| 75° | 208.9 | 209.7 | 210.5 | 216.3 | 236.1 | 332.7 | 928.8 | 2129.2 | 2367.7 | 3183.4 | 3289.1 |
| 77.5° | 167.6 | 163.5 | 166.8 | 169.2 | 174.2 | 185.8 | 320.3 | 1136.0 | 1377.9 | 2089.5 | 2543.6 |
| 80° | 109.0 | 107.3 | 113.9 | 116.4 | 121.4 | 128.8 | 170.9 | 385.5 | 468.1 | 760.4 | 809.1 |
| 82.5° | 58.6 | 55.3 | 69.3 | 66.9 | 69.3 | 75.1 | 100.7 | 141.2 | 158.5 | 229.5 | 194.0 |
| 85° | 18.2 | 18.2 | 19.0 | 22.3 | 27.2 | 26.4 | 43.8 | 69.3 | 76.8 | 98.2 | 72.7 |
| 87.5° | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 4.1 | 9.1 | 14.0 | 19.0 | 33.8 | 25.6 |
| 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: P632748
 CATALOG NUMBER: GWS-SA2D-735-U-RW-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 | 1200.4 |
| 2.5° | 1216.9 | 1209.5 | 1213.6 | 1216.1 | 1215.2 | 1213.6 | 1205.3 | 1203.7 | 1199.6 | 1193.0 | 1191.3 |
| 5° | 1253.2 | 1245.0 | 1245.8 | 1243.3 | 1235.1 | 1224.3 | 1206.2 | 1197.1 | 1189.7 | 1181.4 | 1180.6 |
| 7.5° | 1310.2 | 1301.1 | 1298.6 | 1287.1 | 1264.0 | 1239.2 | 1210.3 | 1193.8 | 1181.4 | 1170.7 | 1169.0 |
| 10° | 1382.8 | 1373.8 | 1365.5 | 1338.3 | 1300.3 | 1267.3 | 1229.3 | 1205.3 | 1187.2 | 1174.0 | 1171.5 |
| 12.5° | 1463.7 | 1456.3 | 1435.7 | 1396.0 | 1350.6 | 1311.8 | 1273.0 | 1243.3 | 1216.9 | 1197.1 | 1194.6 |
| 15° | 1553.7 | 1537.2 | 1505.8 | 1454.7 | 1411.7 | 1380.4 | 1333.3 | 1292.8 | 1250.7 | 1224.3 | 1218.5 |
| 17.5° | 1616.5 | 1602.4 | 1565.3 | 1515.8 | 1481.9 | 1454.7 | 1399.3 | 1341.6 | 1284.6 | 1245.8 | 1237.5 |
| 20° | 1661.1 | 1646.2 | 1604.1 | 1567.8 | 1557.0 | 1533.9 | 1469.5 | 1402.7 | 1336.6 | 1288.7 | 1278.0 |
| 22.5° | 1693.3 | 1677.6 | 1634.6 | 1616.5 | 1631.3 | 1627.2 | 1564.5 | 1488.5 | 1410.1 | 1353.1 | 1339.9 |
| 25° | 1723.8 | 1708.9 | 1671.0 | 1677.6 | 1717.2 | 1729.6 | 1661.9 | 1573.5 | 1484.4 | 1417.5 | 1401.8 |
| 27.5° | 1752.7 | 1733.7 | 1716.4 | 1752.7 | 1808.8 | 1831.9 | 1760.1 | 1660.2 | 1563.6 | 1495.1 | 1482.7 |
| 30° | 1797.3 | 1775.0 | 1772.5 | 1825.3 | 1914.5 | 1934.3 | 1855.1 | 1755.2 | 1659.4 | 1590.1 | 1574.4 |
| 32.5° | 1853.4 | 1832.8 | 1834.4 | 1913.7 | 2016.9 | 2033.4 | 1965.7 | 1872.4 | 1776.6 | 1707.3 | 1685.8 |
| 35° | 1929.4 | 1903.8 | 1917.8 | 2015.2 | 2119.2 | 2149.8 | 2095.3 | 2017.7 | 1924.4 | 1853.4 | 1829.5 |
| 37.5° | 2034.2 | 1997.1 | 2026.0 | 2128.3 | 2233.2 | 2278.6 | 2236.5 | 2178.7 | 2086.2 | 2014.4 | 1992.1 |
| 40° | 2168.0 | 2137.4 | 2149.0 | 2262.1 | 2370.2 | 2424.7 | 2398.3 | 2341.3 | 2249.7 | 2174.6 | 2149.0 |
| 42.5° | 2326.5 | 2295.9 | 2291.8 | 2412.3 | 2520.5 | 2603.0 | 2577.4 | 2525.4 | 2430.5 | 2344.6 | 2319.9 |
| 45° | 2481.7 | 2453.6 | 2459.4 | 2582.4 | 2703.8 | 2793.7 | 2768.2 | 2707.1 | 2603.9 | 2504.8 | 2485.0 |
| 47.5° | 2643.5 | 2620.4 | 2625.3 | 2755.8 | 2889.5 | 2979.5 | 2947.3 | 2873.0 | 2752.5 | 2646.8 | 2622.8 |
| 50° | 2809.4 | 2783.0 | 2790.4 | 2927.5 | 3072.0 | 3157.0 | 3107.5 | 2997.7 | 2864.7 | 2761.5 | 2740.9 |
| 52.5° | 2974.5 | 2943.2 | 2962.2 | 3091.8 | 3241.2 | 3308.9 | 3217.3 | 3084.3 | 2955.6 | 2853.2 | 2830.1 |
| 55° | 3164.4 | 3131.4 | 3110.8 | 3249.5 | 3397.2 | 3425.3 | 3299.8 | 3144.6 | 2991.9 | 2875.5 | 2861.4 |
| 57.5° | 3337.8 | 3309.7 | 3270.9 | 3409.6 | 3518.6 | 3498.0 | 3363.4 | 3128.1 | 2903.5 | 2754.1 | 2734.3 |
| 60° | 3493.0 | 3469.1 | 3435.2 | 3553.3 | 3602.8 | 3556.6 | 3312.2 | 2932.4 | 2685.6 | 2529.6 | 2520.5 |
| 62.5° | 3635.8 | 3610.2 | 3578.9 | 3679.6 | 3673.0 | 3565.7 | 3079.4 | 2631.9 | 2301.7 | 2134.1 | 2119.2 |
| 65° | 3748.9 | 3725.8 | 3716.7 | 3796.0 | 3785.3 | 3388.2 | 2717.0 | 2139.9 | 1681.7 | 1492.6 | 1486.9 |
| 67.5° | 3781.1 | 3772.0 | 3820.8 | 3955.3 | 3787.7 | 3031.5 | 2130.8 | 1419.2 | 903.2 | 724.0 | 713.3 |
| 70° | 3660.6 | 3659.8 | 3799.3 | 3991.7 | 3444.3 | 2315.7 | 1257.3 | 639.8 | 454.1 | 402.9 | 396.3 |
| 72.5° | 3503.7 | 3501.3 | 3611.9 | 3443.5 | 2554.3 | 1267.3 | 529.2 | 342.6 | 284.0 | 270.0 | 270.0 |
| 75° | 3246.2 | 3239.6 | 3322.9 | 2619.5 | 1436.5 | 477.2 | 280.7 | 235.3 | 222.9 | 220.4 | 220.4 |
| 77.5° | 2646.0 | 2590.7 | 2459.4 | 1619.0 | 501.1 | 234.5 | 185.8 | 184.9 | 177.5 | 176.7 | 176.7 |
| 80° | 870.2 | 870.2 | 1011.3 | 617.5 | 221.3 | 144.5 | 131.3 | 137.9 | 130.4 | 125.5 | 124.7 |
| 82.5° | 142.0 | 195.7 | 278.2 | 176.7 | 119.7 | 90.0 | 80.9 | 85.9 | 90.0 | 71.8 | 71.8 |
| 85° | 56.1 | 73.5 | 107.3 | 82.6 | 55.3 | 36.3 | 38.8 | 42.9 | 38.0 | 33.0 | 32.2 |
| 87.5° | 21.5 | 26.4 | 38.0 | 19.8 | 11.6 | 6.6 | 4.1 | 4.1 | 3.3 | 3.3 | 3.3 |
| 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



CCT = 3388K
 CIE x = 0.4153
 CIE y = 0.4030
 Duv = 0.0032

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

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 | 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 (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 | 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)