

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: P631955

Luminaire Tested: GWS-SA2B-760-U-T3R-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P631955
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-760-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) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4366.9 lumens
Efficiency: N/A
Efficacy: 94.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G0

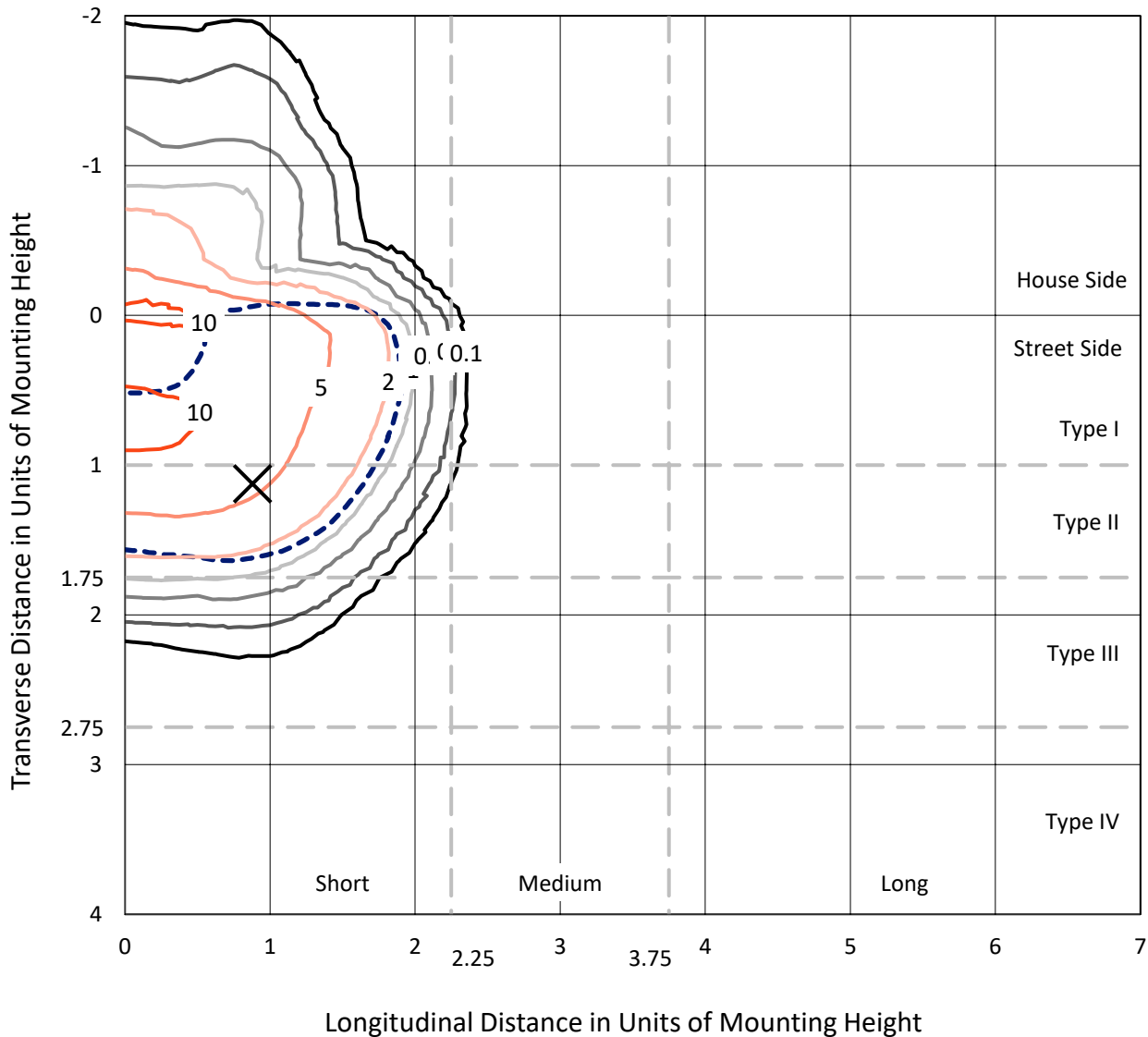
Input Watts (W): 46.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P631955
 CATALOG NUMBER: GWS-SA2B-760-U-T3R-W-GRSBK

Iso-Footcandle Lines of Horizontal Illumination

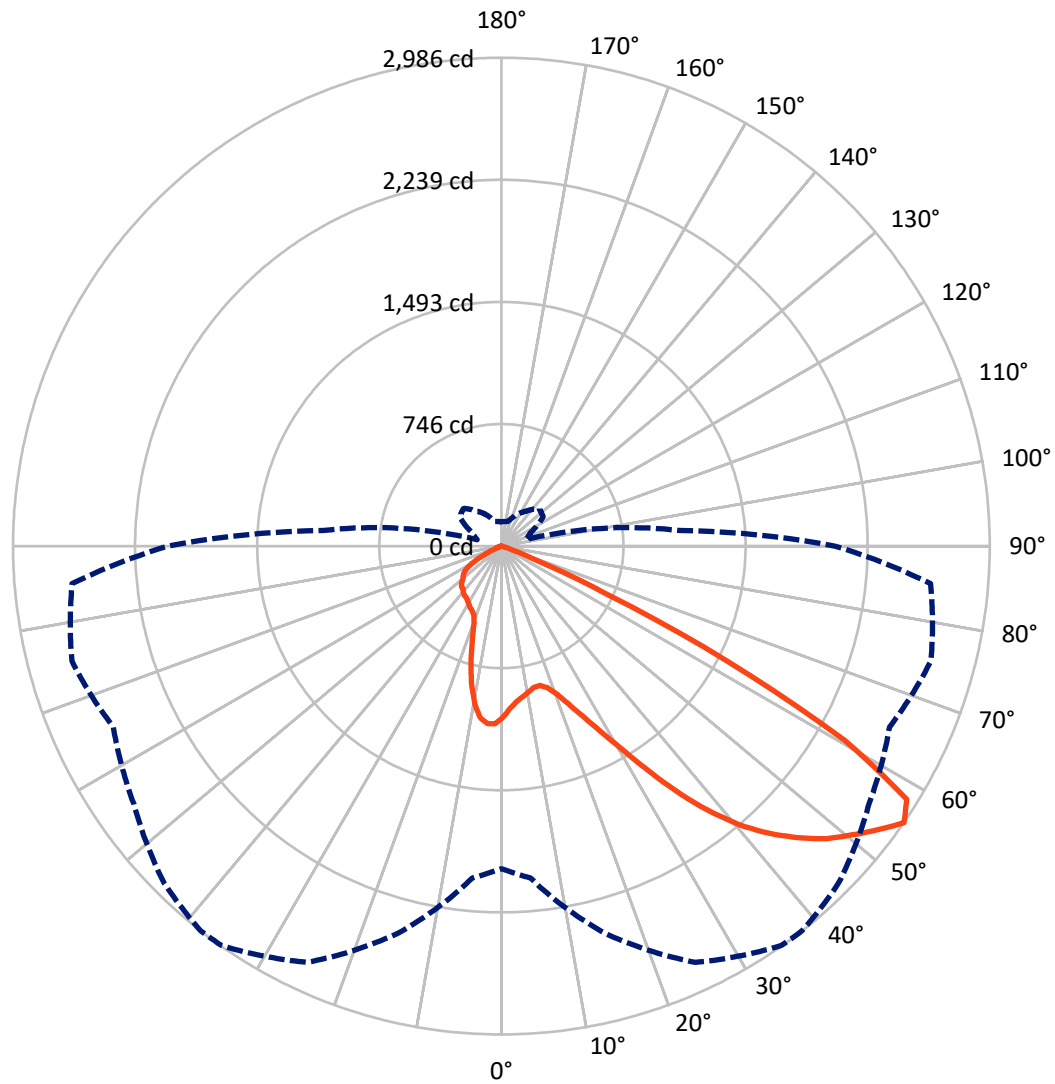
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.9 fc
 Type II - Short - N/A

REPORT NUMBER: P631955
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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 | 850.8 | 0.0 | 850.8 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| Street Side | Lumens | 3516.1 | 0.0 | 3516.1 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| Total | Lumens | 4366.9 | 0.0 | 4366.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 96.8 | 2.2 |
| 10°-20° | 260.7 | 6.0 |
| 20°-30° | 447.3 | 10.2 |
| 30°-40° | 741.9 | 17.0 |
| 40°-50° | 1090.7 | 25.0 |
| 50°-60° | 1274.5 | 29.2 |
| 60°-70° | 432.0 | 9.9 |
| 70°-80° | 22.1 | 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° | 4366.9 | 100.0 |
| 0°-180° | 4366.9 | 100.0 |

Coefficient of Utilization

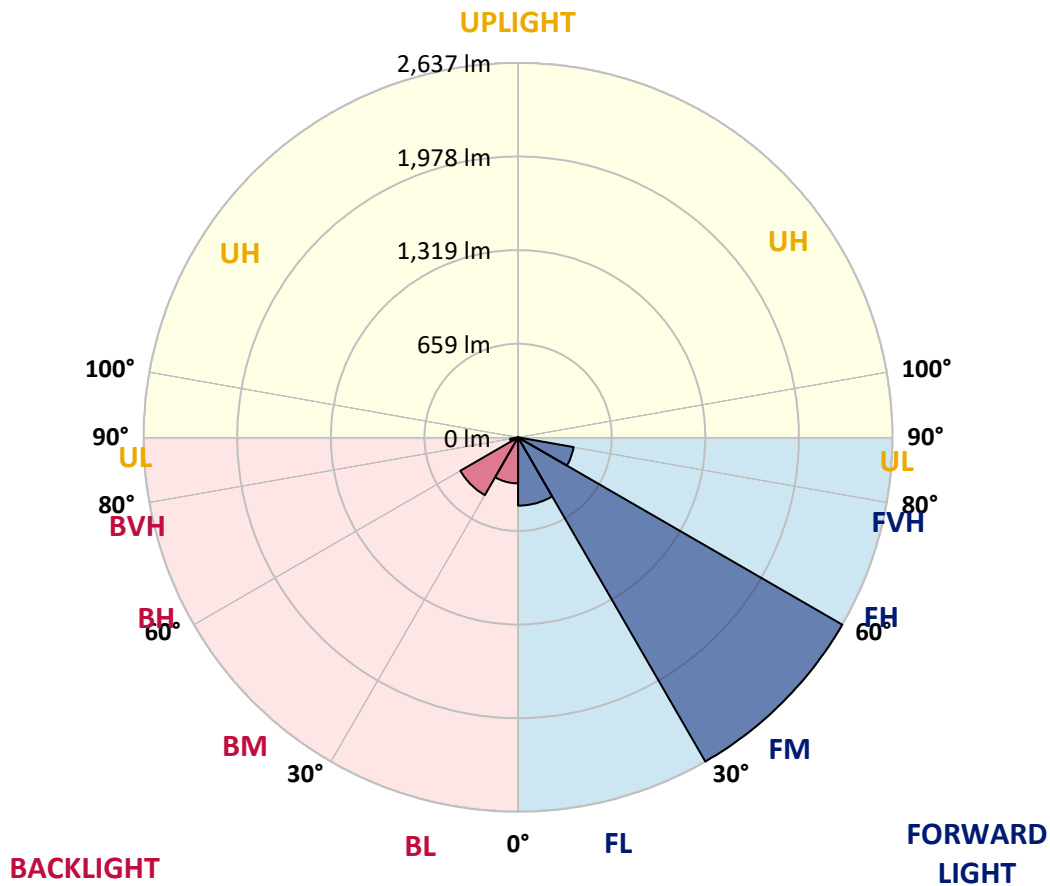


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 480.7 | 11.0 | | | |
| FM (30°-60°) | 2637.5 | 60.4 | | | |
| FH (60°-80°) | 397.5 | 9.1 | | | G0/660 |
| FVH (80°-90°) | 0.5 | 0.0 | | | G0/10 |
| BL (0°-30°) | 324.1 | 7.4 | B1/500 | | |
| BM (30°-60°) | 469.6 | 10.8 | B1/1000 | | |
| BH (60°-80°) | 56.6 | 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° | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 |
| 2.5° | 975.3 | 973.3 | 977.3 | 985.3 | 992.8 | 995.3 | 1002.8 | 1013.3 | 1019.8 | 1035.2 | 1047.7 |
| 5° | 931.4 | 930.4 | 934.4 | 941.4 | 951.4 | 954.9 | 966.4 | 983.8 | 1001.3 | 1028.2 | 1054.7 |
| 7.5° | 891.5 | 891.0 | 897.0 | 912.4 | 926.9 | 931.4 | 945.4 | 966.9 | 990.3 | 1031.7 | 1070.7 |
| 10° | 839.1 | 839.6 | 851.1 | 873.0 | 899.5 | 908.5 | 930.9 | 961.9 | 992.3 | 1045.7 | 1099.6 |
| 12.5° | 822.1 | 823.1 | 829.1 | 846.1 | 875.0 | 886.5 | 917.9 | 964.9 | 1003.8 | 1065.7 | 1137.1 |
| 15° | 863.5 | 863.5 | 858.5 | 860.5 | 873.5 | 884.0 | 916.9 | 974.8 | 1023.3 | 1089.6 | 1174.0 |
| 17.5° | 943.9 | 940.9 | 928.4 | 911.4 | 907.0 | 910.4 | 936.9 | 996.3 | 1050.7 | 1117.6 | 1215.9 |
| 20° | 1052.7 | 1053.7 | 1029.2 | 993.8 | 965.4 | 964.9 | 980.8 | 1034.2 | 1090.1 | 1151.0 | 1261.4 |
| 22.5° | 1184.5 | 1180.5 | 1148.0 | 1099.6 | 1050.2 | 1046.2 | 1052.7 | 1092.1 | 1147.0 | 1203.9 | 1317.3 |
| 25° | 1337.2 | 1335.2 | 1289.3 | 1224.4 | 1159.0 | 1149.5 | 1149.5 | 1188.5 | 1228.4 | 1279.3 | 1384.1 |
| 27.5° | 1496.9 | 1496.9 | 1452.5 | 1377.7 | 1290.8 | 1273.8 | 1271.3 | 1317.3 | 1343.7 | 1353.7 | 1440.5 |
| 30° | 1661.2 | 1659.2 | 1615.2 | 1538.4 | 1445.5 | 1428.1 | 1421.1 | 1455.0 | 1474.0 | 1444.0 | 1510.9 |
| 32.5° | 1827.9 | 1831.4 | 1787.0 | 1715.6 | 1632.7 | 1621.2 | 1599.8 | 1599.8 | 1615.2 | 1573.3 | 1621.7 |
| 35° | 2007.1 | 2006.1 | 1971.1 | 1922.7 | 1851.8 | 1838.9 | 1803.4 | 1748.0 | 1771.5 | 1753.0 | 1775.0 |
| 37.5° | 2165.3 | 2172.8 | 2155.8 | 2119.9 | 2062.5 | 2049.5 | 1991.1 | 1890.8 | 1908.7 | 1937.7 | 1957.2 |
| 40° | 2326.0 | 2332.0 | 2349.0 | 2337.5 | 2265.1 | 2241.2 | 2137.4 | 1972.6 | 1992.6 | 2091.9 | 2147.8 |
| 42.5° | 2483.8 | 2486.8 | 2521.2 | 2540.2 | 2443.3 | 2401.4 | 2248.2 | 2022.6 | 2043.5 | 2212.7 | 2310.6 |
| 45° | 2584.1 | 2590.6 | 2647.5 | 2705.4 | 2600.6 | 2543.2 | 2344.5 | 2086.4 | 2095.4 | 2296.6 | 2430.9 |
| 47.5° | 2580.1 | 2595.1 | 2701.9 | 2807.2 | 2735.8 | 2673.9 | 2460.3 | 2188.8 | 2173.8 | 2375.5 | 2510.2 |
| 50° | 2499.7 | 2517.7 | 2671.0 | 2838.2 | 2833.2 | 2775.8 | 2589.1 | 2337.0 | 2290.1 | 2445.3 | 2520.2 |
| 52.5° | 2333.0 | 2384.9 | 2616.5 | 2842.2 | 2911.5 | 2882.6 | 2748.3 | 2536.7 | 2447.3 | 2545.7 | 2536.2 |
| 55° | 1972.6 | 2036.5 | 2451.3 | 2808.2 | 2982.4 | 2985.9 | 2915.5 | 2744.8 | 2618.0 | 2718.4 | 2634.5 |
| 57.5° | 1497.4 | 1548.4 | 1886.8 | 2499.7 | 2865.1 | 2922.5 | 2980.4 | 2854.6 | 2723.4 | 2836.2 | 2657.5 |
| 60° | 902.5 | 961.4 | 1181.5 | 1834.4 | 2314.1 | 2411.9 | 2639.0 | 2614.5 | 2456.3 | 2504.7 | 2179.3 |
| 62.5° | 365.9 | 396.8 | 545.6 | 1010.8 | 1456.5 | 1547.9 | 1765.5 | 1802.4 | 1763.5 | 1714.1 | 1321.7 |
| 65° | 133.8 | 146.3 | 218.6 | 417.8 | 669.9 | 703.3 | 818.1 | 883.5 | 937.4 | 798.1 | 491.7 |
| 67.5° | 82.9 | 90.8 | 142.3 | 214.6 | 243.6 | 226.6 | 230.6 | 275.0 | 262.6 | 162.2 | 87.9 |
| 70° | 61.4 | 67.9 | 111.3 | 148.7 | 98.3 | 75.9 | 51.4 | 54.9 | 49.4 | 43.4 | 42.9 |
| 72.5° | 42.4 | 48.4 | 83.4 | 87.9 | 37.9 | 27.0 | 19.0 | 26.5 | 29.9 | 29.4 | 30.4 |
| 75° | 28.0 | 32.4 | 52.4 | 34.4 | 9.5 | 7.5 | 6.5 | 14.0 | 18.0 | 18.0 | 18.5 |
| 77.5° | 16.5 | 19.0 | 18.5 | 7.0 | 2.0 | 2.0 | 1.5 | 2.5 | 4.0 | 4.5 | 5.5 |
| 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: P631955

CATALOG NUMBER: GWS-SA2B-760-U-T3R-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 | 1047.2 |
| 2.5° | 1057.2 | 1053.7 | 1068.2 | 1078.7 | 1087.1 | 1091.1 | 1085.7 | 1085.2 | 1085.2 | 1074.2 | 1071.2 |
| 5° | 1069.7 | 1071.2 | 1091.6 | 1100.6 | 1102.1 | 1097.1 | 1084.7 | 1076.2 | 1071.2 | 1059.7 | 1053.2 |
| 7.5° | 1093.6 | 1098.6 | 1118.1 | 1116.6 | 1103.1 | 1080.2 | 1047.2 | 1021.8 | 1005.3 | 987.3 | 976.3 |
| 10° | 1128.1 | 1137.6 | 1149.5 | 1128.6 | 1085.7 | 1027.3 | 959.4 | 910.9 | 882.0 | 861.5 | 849.1 |
| 12.5° | 1170.0 | 1179.5 | 1175.5 | 1126.1 | 1036.7 | 932.4 | 845.1 | 775.2 | 741.7 | 723.3 | 710.3 |
| 15° | 1212.4 | 1218.4 | 1192.5 | 1096.1 | 950.4 | 810.1 | 712.8 | 643.4 | 602.5 | 587.5 | 576.5 |
| 17.5° | 1255.9 | 1254.4 | 1195.5 | 1037.2 | 835.1 | 672.4 | 576.5 | 529.1 | 517.6 | 515.1 | 514.1 |
| 20° | 1301.3 | 1287.8 | 1183.5 | 952.9 | 696.3 | 536.1 | 481.7 | 484.7 | 505.6 | 515.6 | 517.6 |
| 22.5° | 1353.2 | 1319.3 | 1153.5 | 838.6 | 554.6 | 446.7 | 452.2 | 481.7 | 510.1 | 523.6 | 525.6 |
| 25° | 1408.6 | 1348.2 | 1103.6 | 691.8 | 437.3 | 410.8 | 443.2 | 477.2 | 507.6 | 524.1 | 526.1 |
| 27.5° | 1445.0 | 1355.2 | 1021.8 | 544.1 | 375.4 | 396.8 | 431.3 | 463.7 | 495.2 | 513.1 | 515.6 |
| 30° | 1484.5 | 1352.2 | 910.4 | 419.3 | 354.4 | 384.8 | 414.8 | 444.2 | 473.2 | 493.2 | 495.2 |
| 32.5° | 1542.4 | 1350.2 | 774.7 | 340.4 | 345.9 | 375.4 | 397.3 | 421.8 | 441.7 | 453.2 | 451.7 |
| 35° | 1618.2 | 1347.7 | 616.4 | 307.0 | 340.9 | 367.9 | 385.3 | 396.8 | 374.9 | 367.9 | 369.4 |
| 37.5° | 1715.6 | 1353.7 | 483.2 | 293.0 | 339.4 | 365.9 | 380.9 | 347.9 | 314.0 | 301.0 | 299.0 |
| 40° | 1823.4 | 1369.2 | 368.4 | 287.5 | 344.4 | 370.9 | 363.9 | 309.5 | 267.5 | 242.1 | 236.6 |
| 42.5° | 1931.7 | 1386.1 | 291.5 | 285.5 | 352.9 | 384.8 | 335.9 | 281.5 | 218.6 | 204.2 | 202.2 |
| 45° | 2012.1 | 1383.1 | 252.1 | 282.0 | 360.4 | 392.8 | 328.4 | 241.6 | 195.2 | 188.7 | 189.2 |
| 47.5° | 2052.5 | 1350.2 | 230.6 | 274.0 | 363.4 | 384.8 | 310.0 | 225.1 | 179.2 | 186.2 | 192.2 |
| 50° | 2031.0 | 1264.8 | 210.6 | 258.6 | 356.9 | 374.4 | 280.5 | 212.6 | 171.2 | 200.2 | 213.6 |
| 52.5° | 2005.1 | 1160.0 | 188.7 | 234.6 | 341.4 | 359.9 | 269.0 | 209.1 | 166.2 | 193.2 | 203.2 |
| 55° | 2039.5 | 1093.6 | 152.7 | 197.7 | 311.0 | 325.9 | 260.1 | 208.6 | 154.7 | 150.2 | 148.7 |
| 57.5° | 1991.1 | 961.4 | 109.3 | 142.3 | 238.6 | 258.1 | 253.6 | 205.2 | 137.3 | 136.8 | 138.8 |
| 60° | 1538.9 | 586.5 | 74.9 | 90.3 | 146.3 | 164.7 | 230.1 | 196.2 | 118.3 | 108.8 | 109.3 |
| 62.5° | 874.5 | 249.6 | 51.4 | 55.9 | 74.9 | 88.8 | 175.7 | 178.2 | 109.3 | 103.8 | 109.3 |
| 65° | 304.5 | 89.3 | 39.9 | 37.4 | 41.4 | 47.4 | 100.8 | 137.8 | 99.3 | 89.8 | 90.8 |
| 67.5° | 62.9 | 44.4 | 35.4 | 30.9 | 30.9 | 30.9 | 51.4 | 85.9 | 81.9 | 71.4 | 72.4 |
| 70° | 39.9 | 37.9 | 30.9 | 26.5 | 25.5 | 23.5 | 29.4 | 47.4 | 56.4 | 51.9 | 52.4 |
| 72.5° | 29.4 | 29.0 | 24.5 | 21.5 | 19.0 | 17.0 | 18.5 | 23.5 | 29.0 | 29.9 | 30.4 |
| 75° | 18.0 | 18.5 | 16.0 | 13.5 | 12.0 | 10.5 | 11.0 | 11.0 | 11.0 | 10.0 | 11.0 |
| 77.5° | 5.5 | 6.0 | 5.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.0 | 2.5 | 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 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-760-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 5474 | CRI (Ra): | 71.7 | R9: | -27.1 |
| CIE u': | 0.2052 | R1: | 70.6 | R10: | 40.8 |
| CIE v': | 0.4804 | R2: | 74.6 | R11: | 74.6 |
| Duv: | 0.0025 | R3: | 78.3 | R12: | 50.4 |
| CIE x: | 0.3330 | R4: | 73.8 | R13: | 70.0 |
| CIE y: | 0.3466 | R5: | 72.4 | R14: | 87.8 |
| CIE z: | 0.3204 | R6: | 67.5 | | |
| Peak Wavelength (nm): | 442 | R7: | 77.5 | | |
| Dominant Wavelength (nm): | 554 | R8: | 58.9 | | |
| Purity: | 4.1 | | | | |
| Rf: | 72.1 | | | | |
| Rg: | 97.2 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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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 5700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-9-R4

Photopic Flux vs. Wavelength



#####

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)