

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: P640280

Luminaire Tested: GWS-SA5D-750-U-AFL-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640280
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-45)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5D-750-U-AFL-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND
AUTOMOTIVE FRONTLINE OPTICS
Light Source: (80) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 31292.2 lumens
Efficiency: N/A
Efficacy: 152.9 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

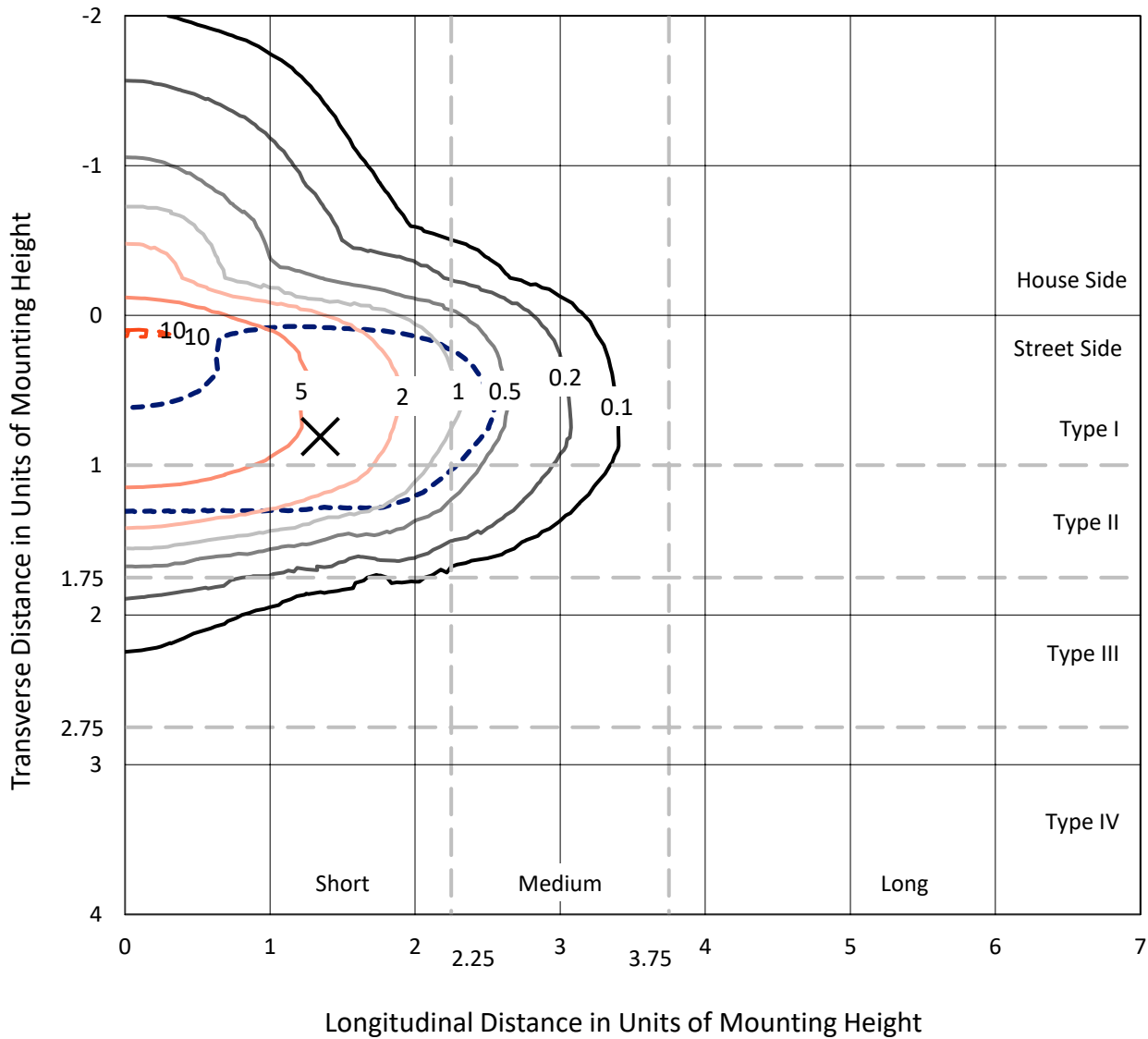
Input Watts (W): 204.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P640280
 CATALOG NUMBER: GWS-SA5D-750-U-AFL-W

Iso-Footcandle Lines of Horizontal Illumination

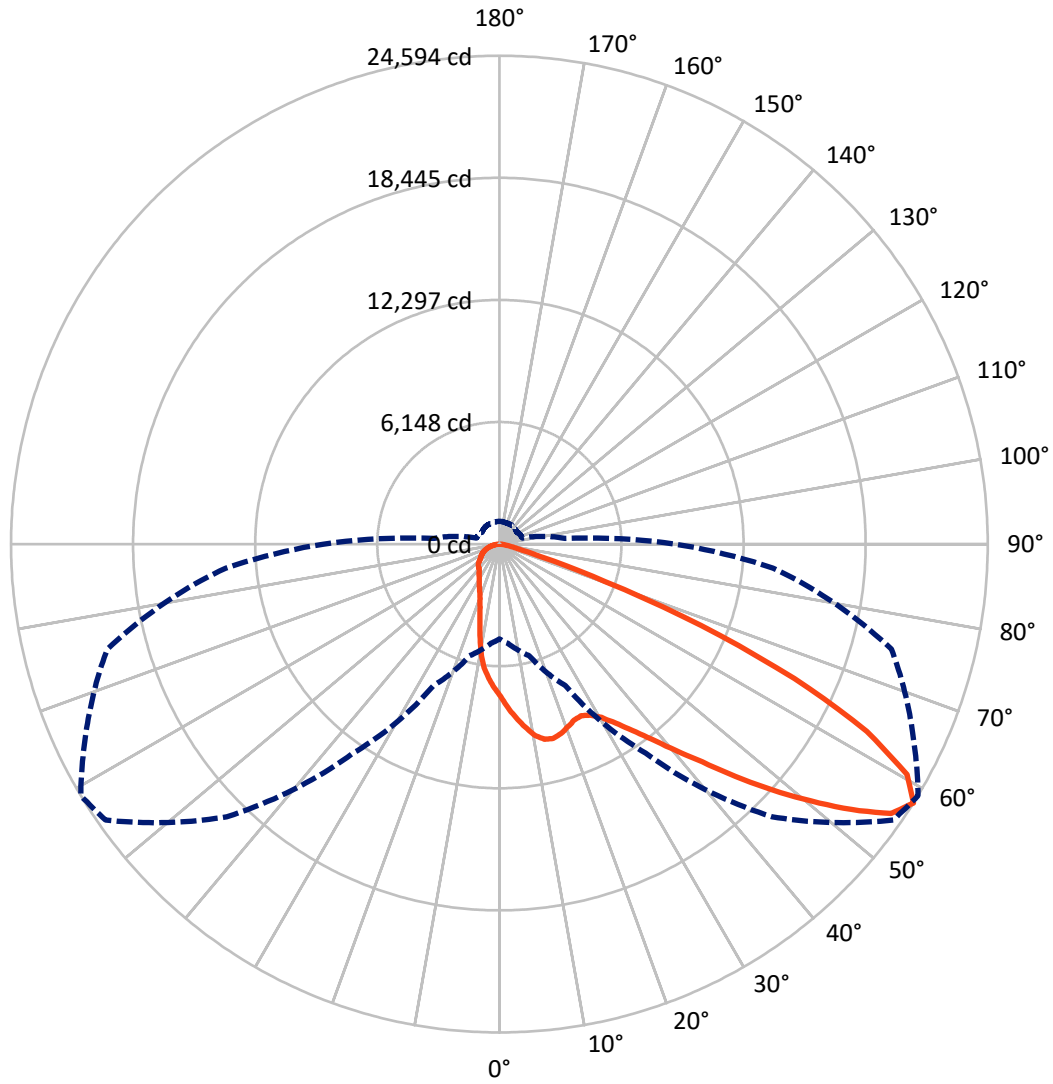
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 10.4 fc
 Type II - Short - N/A

REPORT NUMBER: P640280
CATALOG NUMBER: GWS-SA5D-750-U-AFL-W

Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

REPORT NUMBER: P640280

CATALOG NUMBER: GWS-SA5D-750-U-AFL-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4856.4 | 0.0 | 4856.4 |
| | % Fixture | 15.5 | 0.0 | 15.5 |
| Street Side | Lumens | 26435.8 | 0.0 | 26435.8 |
| | % Fixture | 84.5 | 0.0 | 84.5 |
| Total | Lumens | 31292.2 | 0.0 | 31292.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 713.3 | 2.3 |
| 10°-20° | 1807.4 | 5.8 |
| 20°-30° | 2929.8 | 9.4 |
| 30°-40° | 4712.9 | 15.1 |
| 40°-50° | 7318.7 | 23.4 |
| 50°-60° | 7883.3 | 25.2 |
| 60°-70° | 4575.1 | 14.6 |
| 70°-80° | 1194.4 | 3.8 |
| 80°-90° | 157.3 | 0.5 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 31292.2 | 100.0 |
| 0°-180° | 31292.2 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P640280

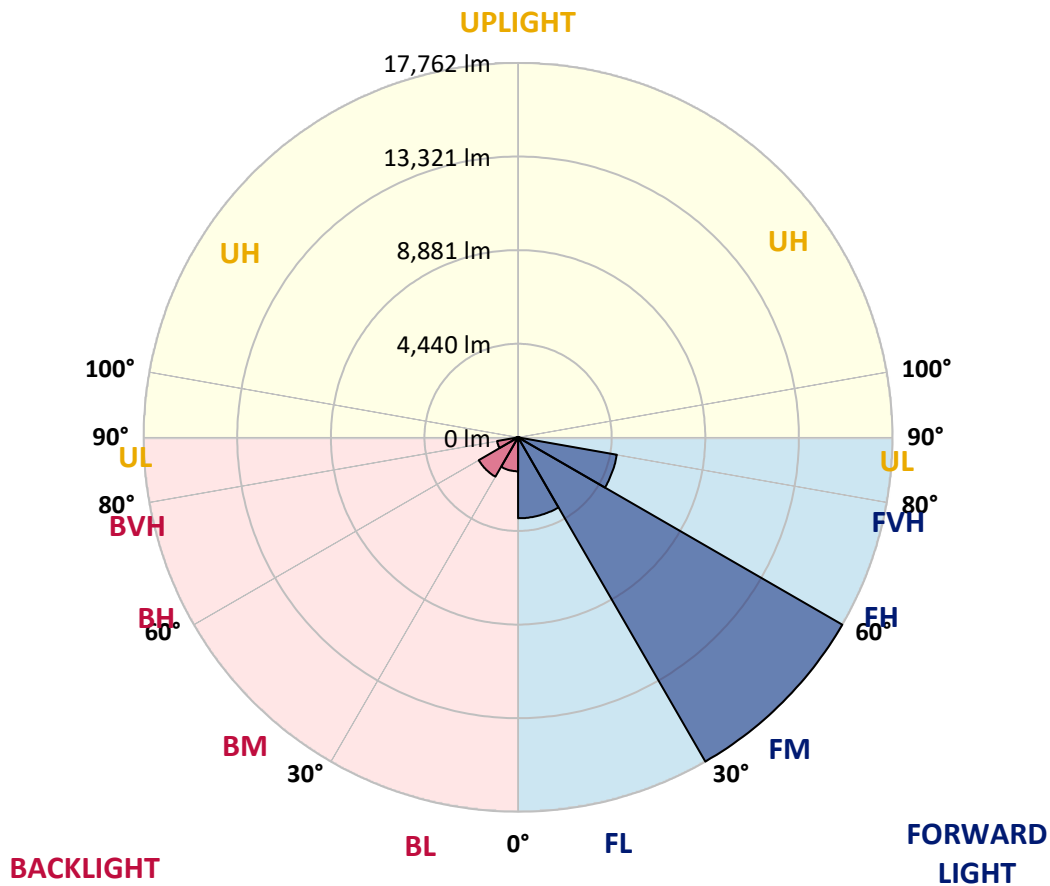
CATALOG NUMBER: GWS-SA5D-750-U-AFL-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3839.3 | 12.3 | | | |
| FM (30°-60°) | 17761.8 | 56.8 | | | |
| FH (60°-80°) | 4759.4 | 15.2 | | | G2/5000 |
| FVH (80°-90°) | 75.3 | 0.2 | | | G1/100 |
| BL (0°-30°) | 1611.2 | 5.1 | B3/2500 | | |
| BM (30°-60°) | 2153.1 | 6.9 | B2/2500 | | |
| BH (60°-80°) | 1010.1 | 3.2 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 82.0 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Short





REPORT NUMBER: P640280

CATALOG NUMBER: GWS-SA5D-750-U-AFL-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 |
| 2.5° | 8712.6 | 8639.9 | 8690.6 | 8600.2 | 8562.8 | 8463.6 | 8335.9 | 8250.0 | 8117.8 | 7946.0 | 7796.2 |
| 5° | 9578.3 | 9527.7 | 9538.7 | 9441.7 | 9355.8 | 9190.6 | 8928.5 | 8783.1 | 8558.4 | 8212.5 | 7890.9 |
| 7.5° | 9551.9 | 9611.4 | 9644.4 | 9728.1 | 9752.4 | 9736.9 | 9501.2 | 9298.6 | 9051.8 | 8531.9 | 8047.3 |
| 10° | 8562.8 | 8675.1 | 8776.5 | 9062.8 | 9410.9 | 9851.5 | 9906.6 | 9785.4 | 9536.5 | 8939.5 | 8234.5 |
| 12.5° | 7485.5 | 7571.5 | 7661.8 | 8005.4 | 8538.5 | 9419.7 | 10016.7 | 10091.6 | 9992.5 | 9342.6 | 8446.0 |
| 15° | 6956.8 | 6996.5 | 7082.4 | 7309.3 | 7734.5 | 8712.6 | 9825.1 | 10153.3 | 10331.7 | 9770.0 | 8683.9 |
| 17.5° | 6934.8 | 6952.4 | 6994.3 | 7115.5 | 7410.6 | 8166.3 | 9479.2 | 10029.9 | 10598.3 | 10221.6 | 8961.5 |
| 20° | 7390.8 | 7344.6 | 7318.1 | 7315.9 | 7461.3 | 7983.4 | 9144.4 | 9831.7 | 10723.9 | 10684.2 | 9258.9 |
| 22.5° | 8023.1 | 8038.5 | 7981.2 | 7840.2 | 7822.6 | 8113.4 | 8976.9 | 9631.2 | 10761.3 | 11093.9 | 9534.3 |
| 25° | 8919.7 | 8996.8 | 8827.1 | 8558.4 | 8426.2 | 8490.1 | 9080.5 | 9569.5 | 10756.9 | 11435.4 | 9706.1 |
| 27.5° | 9966.0 | 10025.5 | 9853.7 | 9501.2 | 9228.1 | 9073.9 | 9388.9 | 9752.4 | 10794.3 | 11730.6 | 9809.6 |
| 30° | 11157.8 | 11177.7 | 10941.9 | 10571.9 | 10173.1 | 9842.7 | 9902.2 | 10129.1 | 10986.0 | 12118.3 | 9930.8 |
| 32.5° | 12614.0 | 12697.7 | 12340.8 | 11754.8 | 11197.5 | 10774.5 | 10591.7 | 10737.1 | 11400.2 | 12576.5 | 10118.0 |
| 35° | 14462.2 | 14490.9 | 14037.1 | 13197.7 | 12409.1 | 11823.1 | 11439.8 | 11516.9 | 12030.2 | 13217.6 | 10400.0 |
| 37.5° | 16204.7 | 16233.4 | 15750.9 | 14971.1 | 13843.2 | 13041.3 | 12486.2 | 12450.9 | 12836.5 | 14123.0 | 10860.4 |
| 40° | 17310.6 | 17392.1 | 17176.2 | 16687.2 | 15609.9 | 14528.3 | 13774.9 | 13653.7 | 13893.9 | 15231.0 | 11501.5 |
| 42.5° | 17905.4 | 17940.6 | 17936.2 | 18000.1 | 17359.1 | 16284.0 | 15228.8 | 14986.5 | 15147.3 | 16427.2 | 12149.1 |
| 45° | 17909.8 | 17997.9 | 18233.6 | 18848.3 | 18876.9 | 18207.2 | 17066.1 | 16687.2 | 16539.6 | 17632.2 | 12825.4 |
| 47.5° | 17107.9 | 17202.7 | 17850.3 | 19059.7 | 19951.9 | 20103.9 | 19266.8 | 18506.8 | 17885.6 | 18669.8 | 13380.6 |
| 50° | 14680.3 | 14918.2 | 16151.9 | 18290.9 | 20163.4 | 21623.9 | 21366.2 | 20335.2 | 19081.8 | 19471.7 | 13728.6 |
| 52.5° | 12572.1 | 12563.3 | 13323.3 | 16118.8 | 19280.0 | 22293.6 | 23397.3 | 22216.5 | 20264.7 | 19980.6 | 13816.8 |
| 55° | 9206.0 | 9256.7 | 10034.3 | 12327.6 | 16922.9 | 21646.0 | 24514.2 | 23948.0 | 21621.7 | 20251.5 | 13781.5 |
| 57.5° | 4773.7 | 5024.9 | 5822.3 | 7866.7 | 12858.5 | 19416.6 | 24216.8 | 24593.5 | 23000.8 | 20443.2 | 13827.8 |
| 60° | 2412.2 | 2363.7 | 2650.1 | 3756.0 | 7450.3 | 15165.0 | 22383.9 | 23584.5 | 23249.7 | 20593.0 | 13856.4 |
| 62.5° | 1610.3 | 1597.1 | 1517.8 | 1740.3 | 3044.4 | 8981.3 | 19081.8 | 20764.8 | 21520.4 | 20240.5 | 13490.7 |
| 65° | 1394.5 | 1368.0 | 1222.6 | 1213.8 | 1478.2 | 3725.2 | 13986.4 | 16323.7 | 17786.4 | 18674.2 | 12616.2 |
| 67.5° | 1255.7 | 1216.0 | 1068.4 | 995.7 | 1061.8 | 1636.8 | 7882.1 | 10948.6 | 13133.9 | 15792.8 | 10699.6 |
| 70° | 1121.3 | 1101.5 | 953.9 | 848.1 | 841.5 | 997.9 | 2903.5 | 5650.5 | 8036.3 | 10774.5 | 7822.6 |
| 72.5° | 1004.5 | 969.3 | 843.7 | 742.4 | 691.7 | 707.1 | 1260.1 | 2176.5 | 4159.1 | 6721.1 | 4679.0 |
| 75° | 870.2 | 843.7 | 733.6 | 632.2 | 570.6 | 517.7 | 768.8 | 1006.7 | 1896.7 | 3194.2 | 2209.5 |
| 77.5° | 671.9 | 654.3 | 579.4 | 502.3 | 467.0 | 385.5 | 467.0 | 634.4 | 876.8 | 1346.0 | 1149.9 |
| 80° | 389.9 | 400.9 | 431.8 | 392.1 | 343.7 | 275.4 | 304.0 | 365.7 | 526.5 | 729.2 | 652.1 |
| 82.5° | 196.1 | 209.3 | 279.8 | 226.9 | 204.9 | 160.8 | 180.6 | 215.9 | 275.4 | 403.1 | 255.5 |
| 85° | 15.4 | 15.4 | 50.7 | 57.3 | 70.5 | 57.3 | 72.7 | 88.1 | 125.6 | 160.8 | 85.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 11.0 | 19.8 | 37.4 | 24.2 |
| 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: P640280
 CATALOG NUMBER: GWS-SA5D-750-U-AFL-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 | 7681.6 |
| 2.5° | 7694.8 | 7582.5 | 7448.1 | 7338.0 | 7168.3 | 7078.0 | 6963.5 | 6822.5 | 6765.2 | 6738.8 | 6723.3 |
| 5° | 7710.2 | 7512.0 | 7225.6 | 6961.3 | 6668.3 | 6437.0 | 6179.2 | 5910.5 | 5756.3 | 5718.8 | 5692.4 |
| 7.5° | 7767.5 | 7490.0 | 7033.9 | 6597.8 | 6053.6 | 5549.2 | 5057.9 | 4571.1 | 4322.1 | 4227.4 | 4218.6 |
| 10° | 7846.8 | 7481.1 | 6840.1 | 6115.3 | 5196.7 | 4399.2 | 3824.3 | 3443.2 | 3282.4 | 3229.5 | 3211.9 |
| 12.5° | 7946.0 | 7474.5 | 6584.6 | 5445.6 | 4207.6 | 3454.2 | 3126.0 | 3064.3 | 3086.3 | 3081.9 | 3081.9 |
| 15° | 8071.5 | 7483.3 | 6276.1 | 4687.8 | 3403.5 | 2998.2 | 3004.8 | 3077.5 | 3145.8 | 3156.8 | 3156.8 |
| 17.5° | 8208.1 | 7474.5 | 5828.9 | 3927.8 | 2921.1 | 2890.2 | 2991.6 | 3092.9 | 3154.6 | 3163.4 | 3163.4 |
| 20° | 8355.7 | 7432.7 | 5265.0 | 3211.9 | 2709.6 | 2822.0 | 2932.1 | 3011.4 | 3048.9 | 3057.7 | 3057.7 |
| 22.5° | 8443.8 | 7313.7 | 4652.6 | 2718.4 | 2575.2 | 2714.0 | 2786.7 | 2868.2 | 2872.6 | 2802.1 | 2799.9 |
| 25° | 8430.6 | 7091.2 | 3954.3 | 2401.2 | 2432.0 | 2553.2 | 2645.7 | 2588.4 | 2517.9 | 2478.3 | 2471.7 |
| 27.5° | 8346.9 | 6756.4 | 3242.7 | 2161.1 | 2262.4 | 2399.0 | 2370.4 | 2321.9 | 2304.3 | 2260.2 | 2255.8 |
| 30° | 8241.2 | 6344.4 | 2603.9 | 1973.8 | 2086.2 | 2211.7 | 2167.7 | 2163.3 | 2145.7 | 2097.2 | 2097.2 |
| 32.5° | 8139.8 | 5919.3 | 2121.4 | 1835.0 | 1973.8 | 1982.6 | 2044.3 | 2048.7 | 2039.9 | 1956.2 | 1947.4 |
| 35° | 8111.2 | 5494.1 | 1795.4 | 1724.9 | 1863.7 | 1859.3 | 1947.4 | 1945.2 | 1793.2 | 1676.4 | 1674.2 |
| 37.5° | 8197.1 | 5062.3 | 1601.5 | 1634.6 | 1711.7 | 1769.0 | 1839.4 | 1711.7 | 1661.0 | 1590.5 | 1586.1 |
| 40° | 8379.9 | 4663.6 | 1502.4 | 1581.7 | 1614.7 | 1698.5 | 1588.3 | 1597.1 | 1583.9 | 1531.0 | 1524.4 |
| 42.5° | 8622.3 | 4324.3 | 1447.3 | 1564.1 | 1559.7 | 1581.7 | 1460.5 | 1495.8 | 1515.6 | 1476.0 | 1469.4 |
| 45° | 8855.8 | 4029.2 | 1418.7 | 1498.0 | 1520.0 | 1392.3 | 1368.0 | 1401.1 | 1431.9 | 1416.5 | 1409.9 |
| 47.5° | 9027.6 | 3773.6 | 1403.3 | 1407.7 | 1469.4 | 1328.4 | 1288.7 | 1304.1 | 1341.6 | 1348.2 | 1346.0 |
| 50° | 9080.5 | 3555.5 | 1385.6 | 1332.8 | 1319.6 | 1264.5 | 1233.6 | 1229.2 | 1273.3 | 1304.1 | 1308.5 |
| 52.5° | 8979.1 | 3361.7 | 1339.4 | 1266.7 | 1202.8 | 1211.6 | 1200.6 | 1178.6 | 1222.6 | 1264.5 | 1268.9 |
| 55° | 8829.3 | 3251.5 | 1266.7 | 1202.8 | 1127.9 | 1163.1 | 1167.6 | 1147.7 | 1176.4 | 1205.0 | 1205.0 |
| 57.5° | 8840.3 | 3315.4 | 1196.2 | 1143.3 | 1061.8 | 1108.1 | 1132.3 | 1123.5 | 1123.5 | 1145.5 | 1147.7 |
| 60° | 8913.0 | 3407.9 | 1149.9 | 1068.4 | 995.7 | 1044.2 | 1099.3 | 1090.4 | 1070.6 | 1099.3 | 1099.3 |
| 62.5° | 8703.8 | 3284.6 | 1119.1 | 995.7 | 925.2 | 982.5 | 1048.6 | 1044.2 | 1022.2 | 1068.4 | 1072.8 |
| 65° | 8086.9 | 2954.1 | 1083.8 | 905.4 | 854.7 | 920.8 | 978.1 | 993.5 | 973.7 | 1035.4 | 1046.4 |
| 67.5° | 6778.4 | 2484.9 | 1015.5 | 819.5 | 784.2 | 845.9 | 901.0 | 923.0 | 907.6 | 980.3 | 989.1 |
| 70° | 5053.5 | 2011.3 | 907.6 | 724.8 | 698.3 | 753.4 | 804.1 | 812.9 | 815.1 | 901.0 | 909.8 |
| 72.5° | 3222.9 | 1564.1 | 764.4 | 619.0 | 599.2 | 641.1 | 678.5 | 713.7 | 729.2 | 810.7 | 808.5 |
| 75° | 1797.6 | 1163.1 | 614.6 | 524.3 | 489.0 | 522.1 | 566.2 | 608.0 | 652.1 | 771.0 | 784.2 |
| 77.5° | 1035.4 | 817.3 | 486.8 | 420.8 | 378.9 | 414.2 | 451.6 | 511.1 | 643.3 | 746.8 | 733.6 |
| 80° | 583.8 | 530.9 | 367.9 | 308.4 | 282.0 | 308.4 | 337.0 | 449.4 | 506.7 | 550.7 | 557.3 |
| 82.5° | 273.2 | 297.4 | 251.1 | 189.5 | 189.5 | 207.1 | 233.5 | 348.1 | 383.3 | 312.8 | 273.2 |
| 85° | 99.1 | 134.4 | 123.4 | 96.9 | 85.9 | 83.7 | 145.4 | 198.3 | 123.4 | 110.1 | 94.7 |
| 87.5° | 26.4 | 37.4 | 35.2 | 24.2 | 13.2 | 11.0 | 0.0 | 0.0 | 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: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

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

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-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-750-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): 4884
 CIE u': 0.2101
 CIE v': 0.4904
 Duv: 0.0037
 CIE x: 0.3493
 CIE y: 0.3624
 CIE z: 0.2884
 Peak Wavelength (nm): 444
 Dominant Wavelength (nm): 571
 Purity: 13.7
 Rf: 74.9
 Rg: 96.3

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.5 | | |
| R1: | 70.5 | R9: | -28.4 |
| R2: | 77.7 | R10: | 48.6 |
| R3: | 84.6 | R11: | 73.2 |
| R4: | 74.7 | R12: | 50.7 |
| R5: | 71.9 | R13: | 71.2 |
| R6: | 70.7 | R14: | 91.4 |
| R7: | 81.2 | | |
| R8: | 56.9 | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-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 |

REPORT NUMBER: SP1-1908-441-4-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-R4

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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

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TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)