

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: P641135

Luminaire Tested: GWS-SA5F-730-U-T2R-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P641135
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-11)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5F-730-U-T2R-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: (80) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 38755.5 lumens
Efficiency: N/A
Efficacy: 124.9 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G4

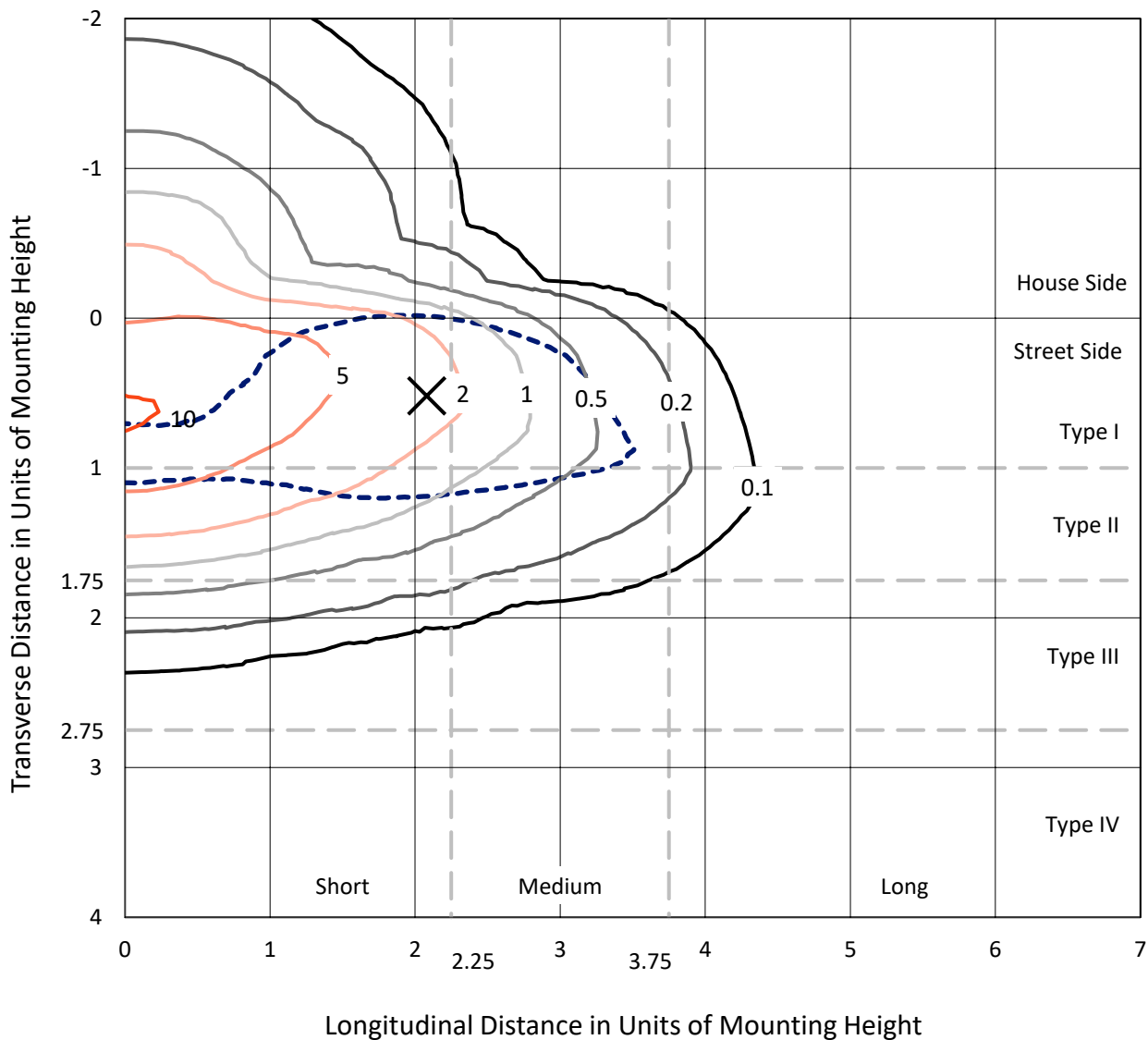
Input Watts (W): 310.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

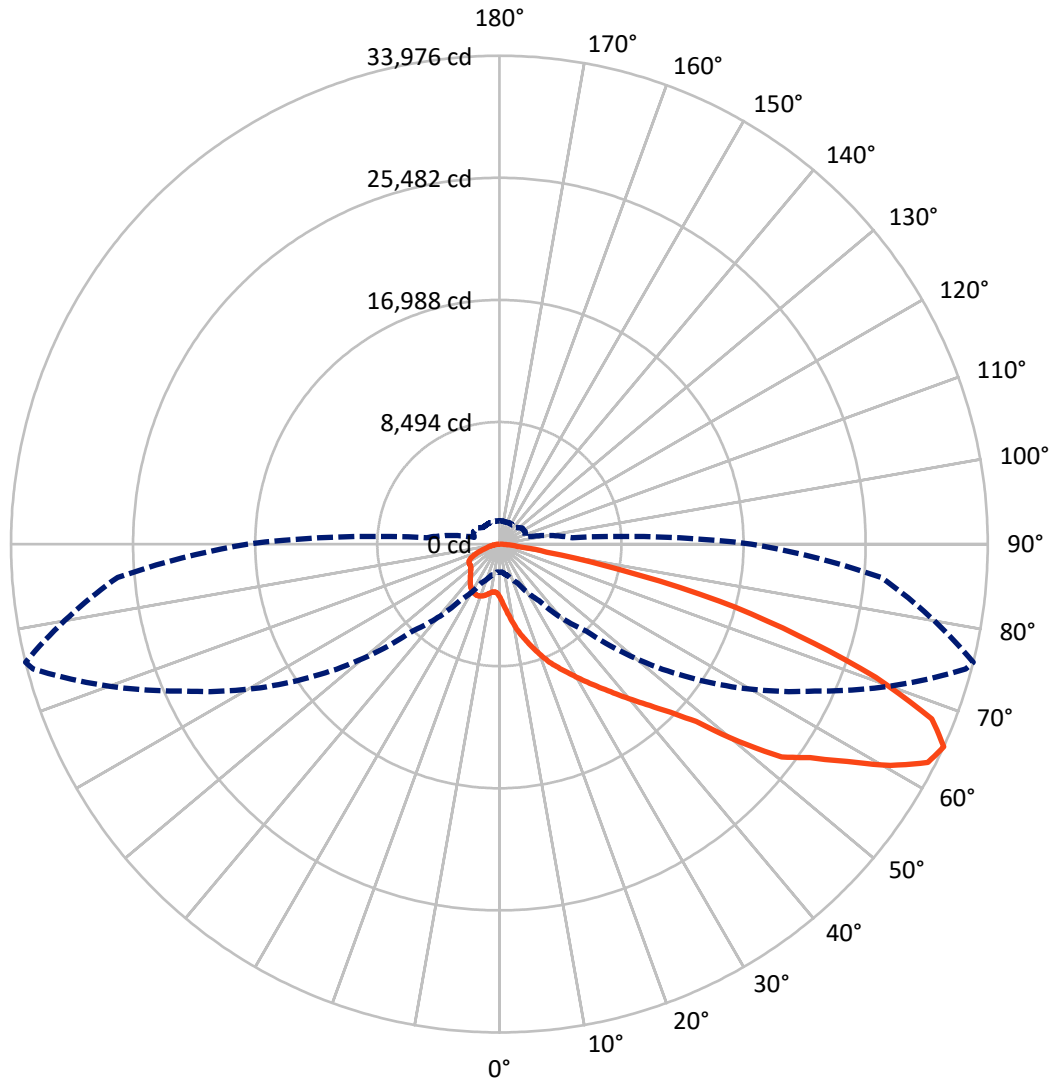
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 10.6 fc
 Type II - Short - N/A

REPORT NUMBER: P641135
CATALOG NUMBER: GWS-SA5F-730-U-T2R-W

Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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CATALOG NUMBER: GWS-SA5F-730-U-T2R-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6478.0 | 0.0 | 6478.0 |
| | % Fixture | 16.7 | 0.0 | 16.7 |
| Street Side | Lumens | 32277.5 | 0.0 | 32277.5 |
| | % Fixture | 83.3 | 0.0 | 83.3 |
| Total | Lumens | 38755.5 | 0.0 | 38755.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 436.0 | 1.1 |
| 10°-20° | 1660.7 | 4.3 |
| 20°-30° | 3236.6 | 8.4 |
| 30°-40° | 5412.9 | 14.0 |
| 40°-50° | 7750.3 | 20.0 |
| 50°-60° | 9175.2 | 23.7 |
| 60°-70° | 7629.3 | 19.7 |
| 70°-80° | 3122.1 | 8.1 |
| 80°-90° | 332.4 | 0.9 |
| 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° | 38755.5 | 100.0 |
| 0°-180° | 38755.5 | 100.0 |

Coefficient of Utilization



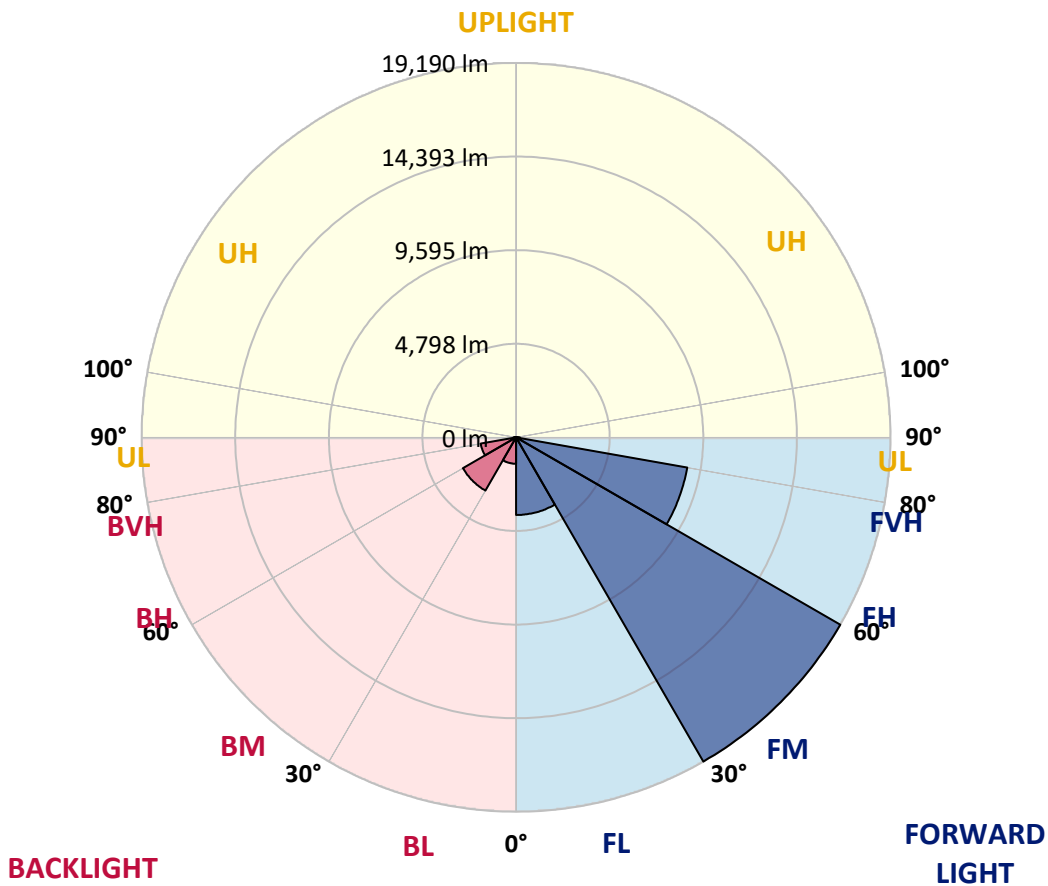
REPORT NUMBER: P641135

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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°) | 3978.1 | 10.3 | | | |
| FM (30°-60°) | 19190.3 | 49.5 | | | |
| FH (60°-80°) | 8910.9 | 23.0 | | | G4/12000 |
| FVH (80°-90°) | 198.2 | 0.5 | | | G2/225 |
| BL (0°-30°) | 1355.2 | 3.5 | B3/2500 | | |
| BM (30°-60°) | 3148.2 | 8.1 | B3/5000 | | |
| BH (60°-80°) | 1840.5 | 4.7 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 134.2 | 0.3 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G4
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 |
| 2.5° | 5144.0 | 5163.1 | 5100.4 | 5078.6 | 4931.5 | 4732.6 | 4566.4 | 4315.7 | 4084.1 | 4048.7 | 3841.7 |
| 5° | 6533.5 | 6451.8 | 6381.0 | 6334.6 | 6130.3 | 5904.2 | 5552.7 | 5081.3 | 4588.2 | 4528.2 | 4081.4 |
| 7.5° | 7359.1 | 7345.5 | 7258.3 | 7231.0 | 7073.0 | 6846.9 | 6484.5 | 5898.7 | 5182.1 | 5084.1 | 4405.6 |
| 10° | 8021.1 | 8013.0 | 7969.4 | 7993.9 | 7849.5 | 7628.8 | 7277.3 | 6672.5 | 5833.3 | 5735.2 | 4768.0 |
| 12.5° | 8598.8 | 8612.4 | 8604.2 | 8694.1 | 8620.6 | 8448.9 | 8083.8 | 7419.0 | 6484.5 | 6378.2 | 5209.4 |
| 15° | 9021.1 | 9032.0 | 9072.8 | 9269.0 | 9309.9 | 9274.5 | 8903.9 | 8151.9 | 7127.5 | 6974.9 | 5664.4 |
| 17.5° | 9140.9 | 9162.7 | 9260.8 | 9576.9 | 9797.6 | 9944.7 | 9669.5 | 8898.5 | 7759.6 | 7593.4 | 6127.6 |
| 20° | 9301.7 | 9326.2 | 9424.3 | 9754.0 | 10078.2 | 10413.3 | 10364.3 | 9655.9 | 8397.1 | 8260.9 | 6596.2 |
| 22.5° | 10045.5 | 10026.4 | 9982.8 | 10140.9 | 10372.5 | 10789.3 | 10911.9 | 10383.4 | 9056.5 | 8925.7 | 7113.9 |
| 25° | 11478.6 | 11443.2 | 11165.3 | 11020.9 | 10944.6 | 11198.0 | 11416.0 | 11045.4 | 9699.5 | 9503.3 | 7596.1 |
| 27.5° | 13058.9 | 13039.8 | 12685.6 | 12342.3 | 11873.7 | 11764.7 | 11892.8 | 11623.0 | 10323.4 | 10124.5 | 8015.7 |
| 30° | 14554.7 | 14497.5 | 14126.9 | 13696.4 | 13069.8 | 12601.2 | 12413.2 | 12189.7 | 11007.3 | 10800.2 | 8506.1 |
| 32.5° | 15892.4 | 15818.9 | 15383.0 | 14906.2 | 14249.5 | 13696.4 | 13135.2 | 12791.9 | 11781.1 | 11541.3 | 9007.4 |
| 35° | 16990.5 | 16916.9 | 16470.1 | 15963.3 | 15241.3 | 14832.6 | 14064.3 | 13445.8 | 12568.5 | 12326.0 | 9598.7 |
| 37.5° | 17840.5 | 17772.4 | 17306.5 | 16807.9 | 16178.5 | 15854.3 | 15186.8 | 14181.4 | 13475.7 | 13222.4 | 10225.3 |
| 40° | 18317.3 | 18268.3 | 17895.0 | 17499.9 | 16971.4 | 16690.7 | 16391.0 | 15110.5 | 14492.0 | 14238.6 | 10963.7 |
| 42.5° | 18461.7 | 18429.0 | 18167.5 | 17963.1 | 17606.2 | 17393.7 | 17565.3 | 16203.0 | 15576.4 | 15355.7 | 11794.7 |
| 45° | 18099.4 | 18099.4 | 18023.1 | 18126.6 | 18142.9 | 18140.2 | 18742.4 | 17437.3 | 16908.7 | 16666.2 | 12966.3 |
| 47.5° | 17173.0 | 17232.9 | 17344.6 | 17854.1 | 18390.9 | 18840.4 | 20118.3 | 19082.9 | 18622.5 | 18423.6 | 14625.5 |
| 50° | 15478.3 | 15641.8 | 16023.2 | 17017.7 | 18159.3 | 19303.6 | 21420.6 | 21516.0 | 21954.6 | 21603.2 | 17066.7 |
| 52.5° | 12996.2 | 12971.7 | 13944.4 | 15361.2 | 17102.2 | 19322.7 | 22137.2 | 23662.9 | 24842.7 | 24600.2 | 18881.3 |
| 55° | 10328.9 | 10288.0 | 11195.3 | 13148.8 | 15481.0 | 18592.5 | 22567.7 | 24646.5 | 26444.7 | 26226.8 | 20513.3 |
| 57.5° | 7909.4 | 7857.7 | 8664.1 | 10426.9 | 13192.4 | 17042.2 | 22485.9 | 25818.1 | 28648.9 | 28537.2 | 22731.1 |
| 60° | 5443.7 | 5381.0 | 6135.7 | 7677.9 | 10484.2 | 14671.8 | 21581.4 | 26420.2 | 31229.1 | 31267.2 | 25104.2 |
| 62.5° | 3269.5 | 3234.1 | 3781.7 | 4977.8 | 7541.6 | 11734.7 | 19464.4 | 26055.1 | 33283.4 | 33455.1 | 26630.0 |
| 65° | 1972.6 | 1948.1 | 2269.6 | 2969.8 | 4784.4 | 8563.3 | 16200.3 | 24188.8 | 33580.4 | 33975.5 | 26665.4 |
| 67.5° | 1435.9 | 1438.6 | 1531.2 | 1809.1 | 2790.0 | 5530.9 | 12157.1 | 20843.0 | 32032.8 | 32441.5 | 24984.4 |
| 70° | 1247.9 | 1253.3 | 1302.3 | 1365.0 | 1686.5 | 3166.0 | 7904.0 | 16453.7 | 27458.3 | 27774.3 | 20954.7 |
| 72.5° | 1108.9 | 1108.9 | 1141.6 | 1174.3 | 1318.7 | 1929.0 | 4234.0 | 11500.4 | 21671.3 | 21755.7 | 15993.3 |
| 75° | 975.4 | 967.2 | 983.6 | 999.9 | 1144.3 | 1348.7 | 2059.8 | 8013.0 | 16006.9 | 15810.7 | 10337.0 |
| 77.5° | 776.5 | 768.3 | 771.1 | 787.4 | 918.2 | 964.5 | 1043.5 | 5005.0 | 9021.1 | 8514.3 | 4566.4 |
| 80° | 553.1 | 547.6 | 577.6 | 618.5 | 678.4 | 591.2 | 653.9 | 2422.1 | 3577.4 | 3329.4 | 1771.0 |
| 82.5° | 329.7 | 340.6 | 386.9 | 419.6 | 468.6 | 370.5 | 422.3 | 809.2 | 1266.9 | 1234.2 | 719.3 |
| 85° | 46.3 | 49.0 | 139.0 | 160.7 | 201.6 | 144.4 | 223.4 | 365.1 | 506.8 | 542.2 | 253.4 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.1 | 65.4 | 144.4 | 147.1 | 62.7 |
| 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: P641135
 CATALOG NUMBER: GWS-SA5F-730-U-T2R-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 | 3670.0 |
| 2.5° | 3735.4 | 3607.3 | 3424.8 | 3272.2 | 3144.2 | 3040.6 | 2953.4 | 2888.0 | 2869.0 | 2841.7 | 2841.7 |
| 5° | 3871.6 | 3640.0 | 3313.1 | 3081.5 | 2948.0 | 2869.0 | 2814.5 | 2787.2 | 2773.6 | 2757.3 | 2749.1 |
| 7.5° | 4059.6 | 3735.4 | 3294.0 | 3059.7 | 2956.2 | 2907.1 | 2871.7 | 2855.4 | 2844.5 | 2828.1 | 2828.1 |
| 10° | 4318.5 | 3877.1 | 3354.0 | 3136.0 | 3054.2 | 3005.2 | 2964.3 | 2937.1 | 2912.6 | 2888.0 | 2882.6 |
| 12.5° | 4599.1 | 4062.3 | 3462.9 | 3239.5 | 3152.3 | 3092.4 | 3035.2 | 2994.3 | 2964.3 | 2934.4 | 2926.2 |
| 15° | 4909.7 | 4253.1 | 3580.1 | 3340.3 | 3231.3 | 3149.6 | 3081.5 | 3018.8 | 2978.0 | 2934.4 | 2928.9 |
| 17.5° | 5214.8 | 4446.5 | 3678.2 | 3408.4 | 3269.5 | 3168.7 | 3070.6 | 2988.9 | 2937.1 | 2888.0 | 2874.4 |
| 20° | 5579.9 | 4640.0 | 3746.3 | 3427.5 | 3261.3 | 3127.8 | 3010.7 | 2907.1 | 2849.9 | 2792.7 | 2784.5 |
| 22.5° | 5915.1 | 4819.8 | 3779.0 | 3400.3 | 3198.7 | 3040.6 | 2904.4 | 2792.7 | 2730.0 | 2672.8 | 2661.9 |
| 25° | 6239.3 | 4977.8 | 3765.4 | 3334.9 | 3103.3 | 2920.7 | 2779.1 | 2667.4 | 2607.4 | 2547.5 | 2531.1 |
| 27.5° | 6552.6 | 5084.1 | 3710.9 | 3234.1 | 2983.4 | 2787.2 | 2651.0 | 2550.2 | 2498.4 | 2446.7 | 2424.9 |
| 30° | 6860.5 | 5182.1 | 3626.4 | 3103.3 | 2830.8 | 2648.3 | 2536.6 | 2465.7 | 2414.0 | 2359.5 | 2343.1 |
| 32.5° | 7171.1 | 5253.0 | 3498.4 | 2950.7 | 2675.5 | 2525.7 | 2457.6 | 2405.8 | 2351.3 | 2296.8 | 2280.5 |
| 35° | 7484.4 | 5283.0 | 3343.1 | 2776.3 | 2544.8 | 2446.7 | 2422.1 | 2362.2 | 2288.6 | 2223.3 | 2201.5 |
| 37.5° | 7857.7 | 5310.2 | 3149.6 | 2604.7 | 2430.3 | 2408.5 | 2403.1 | 2313.2 | 2226.0 | 2136.1 | 2111.5 |
| 40° | 8307.2 | 5345.6 | 2950.7 | 2449.4 | 2337.7 | 2394.9 | 2373.1 | 2250.5 | 2076.1 | 1988.9 | 1961.7 |
| 42.5° | 8857.6 | 5411.0 | 2743.6 | 2307.7 | 2269.6 | 2343.1 | 2318.6 | 2097.9 | 1980.8 | 1931.7 | 1918.1 |
| 45° | 9666.8 | 5650.8 | 2536.6 | 2196.0 | 2217.8 | 2269.6 | 2231.4 | 2008.0 | 1961.7 | 1929.0 | 1912.7 |
| 47.5° | 11108.1 | 6018.6 | 2356.8 | 2111.5 | 2176.9 | 2204.2 | 2057.1 | 1983.5 | 1948.1 | 1904.5 | 1885.4 |
| 50° | 12606.6 | 6179.3 | 2212.4 | 2059.8 | 2130.6 | 2144.2 | 1961.7 | 1950.8 | 1926.3 | 1880.0 | 1860.9 |
| 52.5° | 13620.2 | 6157.5 | 2125.2 | 2040.7 | 2092.5 | 2040.7 | 1918.1 | 1915.4 | 1899.0 | 1844.5 | 1822.7 |
| 55° | 14764.5 | 6195.7 | 2087.0 | 2046.2 | 2076.1 | 1866.3 | 1863.6 | 1871.8 | 1863.6 | 1803.7 | 1792.8 |
| 57.5° | 16309.3 | 6312.8 | 2068.0 | 2065.2 | 2065.2 | 1781.9 | 1811.8 | 1822.7 | 1806.4 | 1779.1 | 1771.0 |
| 60° | 17794.2 | 6321.0 | 2032.5 | 2087.0 | 2057.1 | 1730.1 | 1751.9 | 1762.8 | 1743.7 | 1738.3 | 1735.6 |
| 62.5° | 18352.7 | 5928.7 | 1953.5 | 2070.7 | 2024.4 | 1672.9 | 1689.2 | 1694.7 | 1675.6 | 1689.2 | 1686.5 |
| 65° | 17521.7 | 5095.0 | 1822.7 | 1991.7 | 1923.5 | 1621.1 | 1610.2 | 1623.8 | 1591.2 | 1626.6 | 1629.3 |
| 67.5° | 15557.3 | 4048.7 | 1623.8 | 1841.8 | 1781.9 | 1563.9 | 1542.1 | 1542.1 | 1487.6 | 1542.1 | 1539.4 |
| 70° | 12543.9 | 2860.8 | 1332.3 | 1602.1 | 1626.6 | 1495.8 | 1484.9 | 1422.2 | 1335.0 | 1416.8 | 1408.6 |
| 72.5° | 9508.8 | 2054.3 | 1049.0 | 1266.9 | 1400.4 | 1400.4 | 1403.2 | 1296.9 | 1196.1 | 1234.2 | 1201.5 |
| 75° | 6024.0 | 1446.7 | 839.2 | 969.9 | 1098.0 | 1228.8 | 1291.4 | 1095.3 | 1005.4 | 989.0 | 972.7 |
| 77.5° | 2713.7 | 950.9 | 653.9 | 743.8 | 779.2 | 969.9 | 1179.7 | 942.7 | 820.1 | 784.7 | 773.8 |
| 80° | 1136.1 | 591.2 | 465.9 | 525.8 | 479.5 | 814.6 | 1040.8 | 732.9 | 602.1 | 553.1 | 517.7 |
| 82.5° | 498.6 | 351.5 | 297.0 | 283.4 | 299.7 | 604.9 | 776.5 | 487.7 | 376.0 | 509.5 | 514.9 |
| 85° | 209.8 | 185.3 | 152.6 | 139.0 | 122.6 | 231.6 | 365.1 | 190.7 | 234.3 | 133.5 | 109.0 |
| 87.5° | 49.0 | 54.5 | 40.9 | 27.2 | 16.3 | 2.7 | 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: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

Data in this report applies to families of products SA1C-730-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-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-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 2993
 CIE u': 0.2508
 CIE v': 0.5215
 Duv: 0.0000
 CIE x: 0.4374
 CIE y: 0.4043
 CIE z: 0.1583
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 53

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.8 | | |
| R1: | 67.5 | R9: | -38.3 |
| R2: | 82.9 | R10: | 62.5 |
| R3: | 94.7 | R11: | 63.7 |
| R4: | 67.7 | R12: | 57.8 |
| R5: | 67.9 | R13: | 70.4 |
| R6: | 77.6 | R14: | 97.3 |
| R7: | 76.0 | | |
| R8: | 40.5 | | |

Rf: 75.7
 Rg: 93.9



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-2-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 3000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-2-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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)