

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: P632457

Luminaire Tested: GWS-SA2C-760-U-T4W-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P632457
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-52)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA2C-760-U-T4W-W
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: (32) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9257.6 lumens
Efficiency: N/A
Efficacy: 146.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B2 - U0 - G2

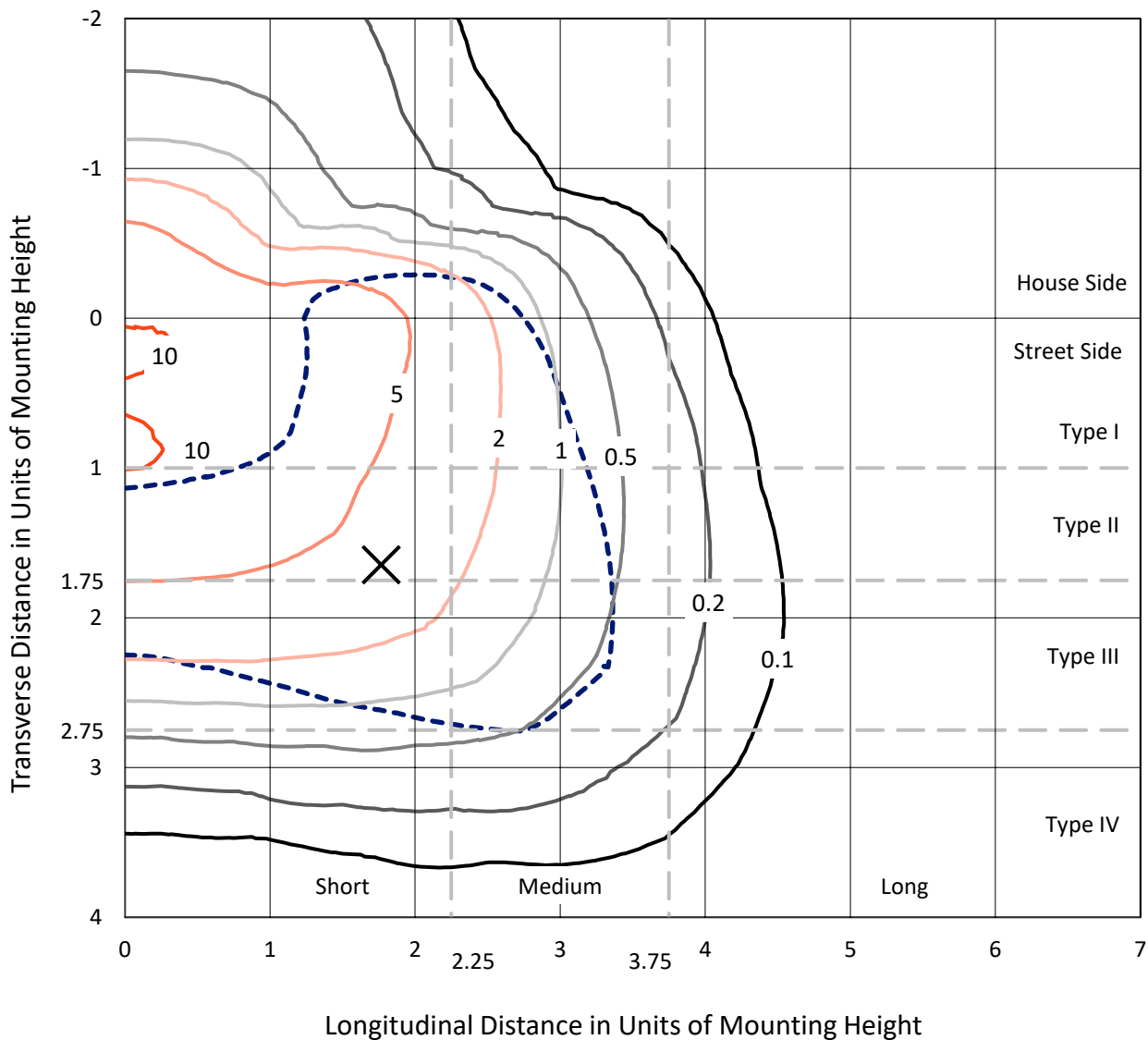
Input Watts (W): 63.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P632457
 CATALOG NUMBER: GWS-SA2C-760-U-T4W-W

Iso-Footcandle Lines of Horizontal Illumination

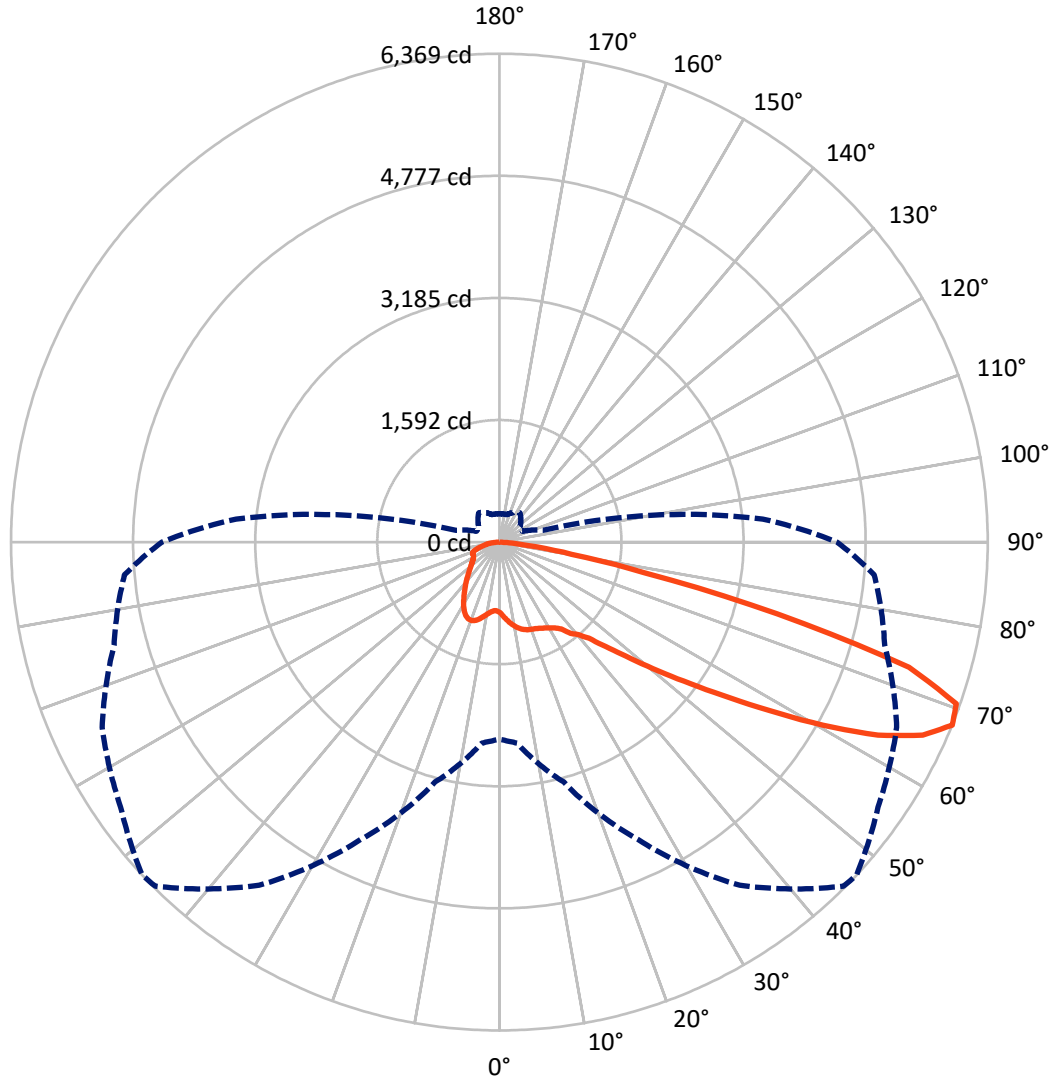
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.6 fc
 Type III - Short - N/A

REPORT NUMBER: P632457
CATALOG NUMBER: GWS-SA2C-760-U-T4W-W

Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P632457

CATALOG NUMBER: GWS-SA2C-760-U-T4W-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2109.9 | 0.0 | 2109.9 |
| | % Fixture | 22.8 | 0.0 | 22.8 |
| Street Side | Lumens | 7147.7 | 0.0 | 7147.7 |
| | % Fixture | 77.2 | 0.0 | 77.2 |
| Total | Lumens | 9257.6 | 0.0 | 9257.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 93.8 | 1.0 |
| 10°-20° | 312.5 | 3.4 |
| 20°-30° | 531.1 | 5.7 |
| 30°-40° | 778.1 | 8.4 |
| 40°-50° | 1185.5 | 12.8 |
| 50°-60° | 2121.0 | 22.9 |
| 60°-70° | 2830.3 | 30.6 |
| 70°-80° | 1279.9 | 13.8 |
| 80°-90° | 125.4 | 1.4 |
| 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° | 9257.6 | 100.0 |
| 0°-180° | 9257.6 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P632457

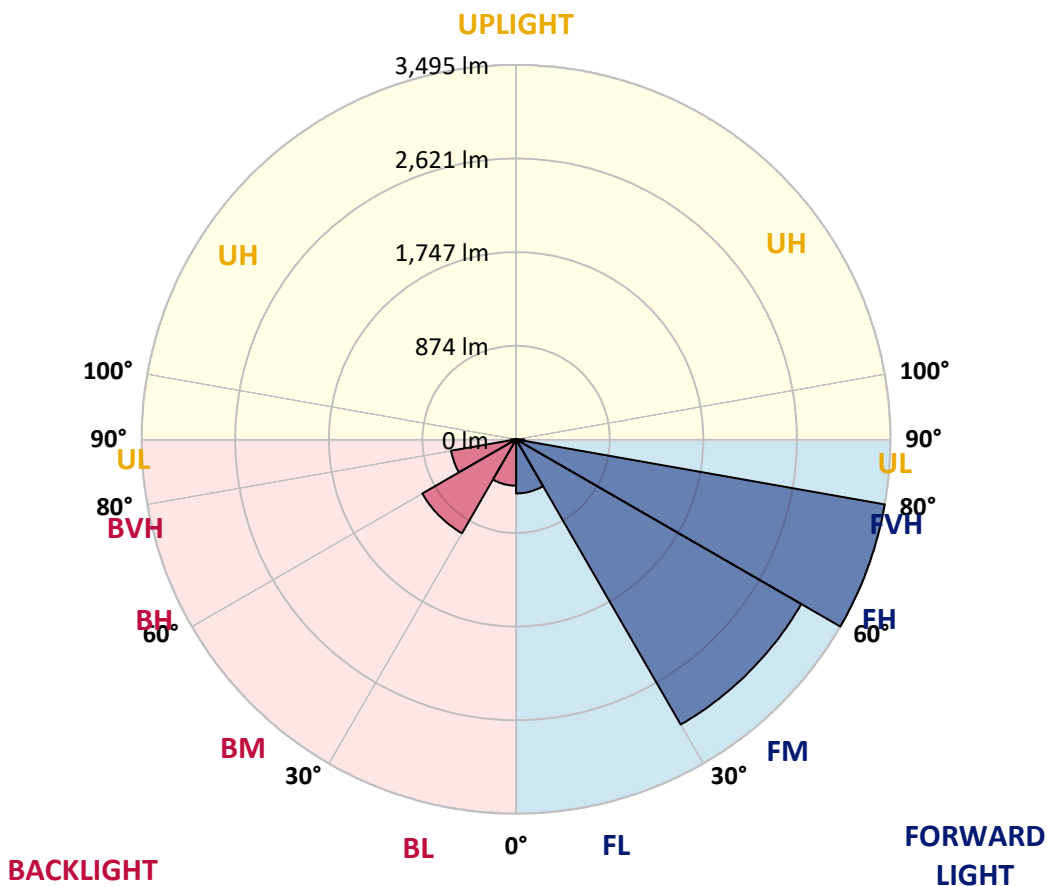
CATALOG NUMBER: GWS-SA2C-760-U-T4W-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 504.9 | 5.5 | | | |
| FM (30°-60°) | 3073.6 | 33.2 | | | |
| FH (60°-80°) | 3494.6 | 37.7 | | | G2/5000 |
| FVH (80°-90°) | 74.6 | 0.8 | | | G1/100 |
| BL (0°-30°) | 432.5 | 4.7 | B1/500 | | |
| BM (30°-60°) | 1010.9 | 10.9 | B2/2500 | | |
| BH (60°-80°) | 615.6 | 6.6 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 50.8 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type III Short





REPORT NUMBER: P632457
 CATALOG NUMBER: GWS-SA2C-760-U-T4W-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 |
| 2.5° | 978.6 | 982.0 | 981.3 | 976.0 | 972.6 | 966.6 | 967.3 | 957.9 | 943.8 | 934.5 | 923.7 |
| 5° | 1065.0 | 1070.3 | 1063.6 | 1054.9 | 1041.6 | 1022.1 | 1020.1 | 998.7 | 971.9 | 953.2 | 933.8 |
| 7.5° | 1140.0 | 1143.3 | 1135.3 | 1120.5 | 1101.1 | 1075.0 | 1070.3 | 1044.9 | 1011.4 | 982.0 | 953.9 |
| 10° | 1198.2 | 1202.2 | 1191.5 | 1172.1 | 1146.6 | 1120.5 | 1117.2 | 1091.1 | 1055.6 | 1020.8 | 985.3 |
| 12.5° | 1247.7 | 1249.1 | 1237.7 | 1211.6 | 1184.1 | 1157.4 | 1154.0 | 1129.9 | 1097.1 | 1061.6 | 1022.8 |
| 15° | 1276.5 | 1277.2 | 1263.1 | 1234.3 | 1208.2 | 1184.8 | 1182.8 | 1162.0 | 1131.9 | 1098.5 | 1057.0 |
| 17.5° | 1274.5 | 1275.8 | 1265.8 | 1240.4 | 1217.6 | 1203.5 | 1201.5 | 1188.2 | 1164.7 | 1134.6 | 1093.1 |
| 20° | 1249.7 | 1251.1 | 1244.4 | 1227.6 | 1215.6 | 1211.6 | 1212.2 | 1208.2 | 1194.2 | 1169.4 | 1127.2 |
| 22.5° | 1230.3 | 1232.3 | 1226.3 | 1214.3 | 1212.9 | 1222.3 | 1224.3 | 1226.3 | 1219.6 | 1197.5 | 1156.7 |
| 25° | 1239.7 | 1243.0 | 1233.7 | 1216.9 | 1219.6 | 1240.4 | 1244.4 | 1251.1 | 1245.7 | 1227.0 | 1191.5 |
| 27.5° | 1304.6 | 1306.6 | 1282.5 | 1248.4 | 1240.4 | 1262.5 | 1268.5 | 1279.2 | 1275.2 | 1257.8 | 1230.3 |
| 30° | 1455.2 | 1453.9 | 1402.4 | 1318.7 | 1285.2 | 1293.9 | 1298.6 | 1314.0 | 1315.3 | 1304.0 | 1277.8 |
| 32.5° | 1667.4 | 1660.7 | 1581.1 | 1447.9 | 1350.8 | 1329.4 | 1334.7 | 1355.5 | 1370.9 | 1358.8 | 1323.4 |
| 35° | 1891.7 | 1885.6 | 1798.0 | 1642.0 | 1472.0 | 1397.7 | 1391.6 | 1407.7 | 1431.1 | 1397.7 | 1346.8 |
| 37.5° | 2105.2 | 2095.8 | 2006.1 | 1813.4 | 1621.2 | 1517.5 | 1508.8 | 1492.7 | 1478.7 | 1414.4 | 1375.6 |
| 40° | 2342.2 | 2331.5 | 2253.1 | 2034.9 | 1785.9 | 1609.2 | 1587.1 | 1523.5 | 1510.8 | 1470.0 | 1450.5 |
| 42.5° | 2595.2 | 2595.2 | 2530.3 | 2315.4 | 1984.7 | 1740.4 | 1711.6 | 1615.9 | 1629.3 | 1602.5 | 1579.7 |
| 45° | 2848.2 | 2855.6 | 2804.0 | 2597.9 | 2250.5 | 1988.1 | 1941.9 | 1806.0 | 1838.1 | 1826.1 | 1814.7 |
| 47.5° | 3063.8 | 3077.8 | 3067.8 | 2886.4 | 2575.8 | 2289.3 | 2219.0 | 2077.8 | 2146.7 | 2175.5 | 2207.6 |
| 50° | 3296.0 | 3311.4 | 3301.4 | 3229.8 | 2956.7 | 2654.1 | 2591.2 | 2445.2 | 2563.7 | 2650.1 | 2755.2 |
| 52.5° | 3640.8 | 3662.9 | 3579.2 | 3551.7 | 3419.2 | 3068.4 | 3012.2 | 2846.2 | 3061.1 | 3204.3 | 3438.6 |
| 55° | 3931.9 | 3931.3 | 3901.8 | 3964.7 | 3915.9 | 3575.2 | 3512.9 | 3362.3 | 3636.7 | 3788.7 | 4131.4 |
| 57.5° | 4067.2 | 4083.2 | 4184.3 | 4362.4 | 4460.1 | 4194.3 | 4134.8 | 3980.8 | 4254.6 | 4333.6 | 4703.7 |
| 60° | 4136.8 | 4156.9 | 4352.3 | 4704.4 | 4967.5 | 4870.4 | 4847.0 | 4650.9 | 4804.8 | 4795.4 | 5186.4 |
| 62.5° | 4039.0 | 4079.2 | 4393.1 | 4861.0 | 5329.6 | 5549.8 | 5542.5 | 5245.9 | 5272.7 | 5181.0 | 5485.6 |
| 65° | 3590.6 | 3634.1 | 4126.7 | 4782.7 | 5536.4 | 6066.6 | 6068.6 | 5784.8 | 5632.2 | 5368.4 | 5435.4 |
| 67.5° | 2567.7 | 2630.0 | 3239.1 | 4279.4 | 5463.5 | 6345.7 | 6369.2 | 6029.1 | 5716.5 | 5202.4 | 4907.9 |
| 70° | 1399.7 | 1445.2 | 1922.5 | 3110.6 | 4806.2 | 6278.8 | 6322.3 | 5911.3 | 5344.3 | 4500.2 | 3778.0 |
| 72.5° | 635.9 | 650.6 | 894.3 | 1706.9 | 3283.3 | 5404.6 | 5586.7 | 5275.4 | 4389.1 | 3324.1 | 2402.4 |
| 75° | 291.2 | 297.9 | 389.6 | 816.6 | 1715.6 | 3616.7 | 3744.5 | 3929.3 | 3054.4 | 2099.2 | 1252.4 |
| 77.5° | 182.7 | 184.7 | 221.6 | 373.5 | 855.5 | 1805.3 | 1939.9 | 2339.5 | 1788.6 | 1038.9 | 523.5 |
| 80° | 107.8 | 109.8 | 137.9 | 202.2 | 401.6 | 826.0 | 953.9 | 925.1 | 840.7 | 448.5 | 238.3 |
| 82.5° | 54.2 | 56.2 | 79.7 | 115.1 | 218.9 | 328.7 | 386.9 | 388.9 | 313.3 | 243.0 | 134.5 |
| 85° | 19.4 | 20.1 | 26.1 | 45.5 | 93.0 | 108.4 | 121.2 | 147.9 | 153.3 | 141.2 | 64.9 |
| 87.5° | 0.0 | 0.0 | 0.7 | 1.3 | 2.7 | 10.7 | 11.4 | 21.4 | 44.8 | 50.2 | 26.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P632457

CATALOG NUMBER: GWS-SA2C-760-U-T4W-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 | 917.7 |
| 2.5° | 920.4 | 910.4 | 907.0 | 903.7 | 898.3 | 896.3 | 892.3 | 888.3 | 888.3 | 884.3 | 882.2 |
| 5° | 925.1 | 911.7 | 903.0 | 899.0 | 895.6 | 897.6 | 897.6 | 899.0 | 903.7 | 901.0 | 902.3 |
| 7.5° | 941.8 | 926.4 | 914.4 | 911.0 | 911.0 | 919.1 | 924.4 | 931.1 | 939.8 | 941.1 | 941.1 |
| 10° | 971.3 | 953.2 | 940.5 | 938.5 | 941.8 | 953.2 | 961.2 | 969.3 | 980.0 | 980.6 | 982.0 |
| 12.5° | 1003.4 | 985.3 | 972.6 | 975.3 | 978.6 | 993.4 | 1002.1 | 1008.8 | 1019.5 | 1019.5 | 1018.8 |
| 15° | 1036.9 | 1016.8 | 1006.1 | 1011.4 | 1021.5 | 1038.2 | 1039.5 | 1040.2 | 1045.6 | 1044.2 | 1043.6 |
| 17.5° | 1071.7 | 1050.3 | 1042.2 | 1050.3 | 1061.0 | 1069.0 | 1062.3 | 1052.9 | 1050.9 | 1048.3 | 1046.9 |
| 20° | 1105.8 | 1083.7 | 1080.4 | 1086.4 | 1089.8 | 1083.1 | 1062.3 | 1044.9 | 1036.9 | 1032.9 | 1031.5 |
| 22.5° | 1135.3 | 1116.5 | 1114.5 | 1114.5 | 1097.8 | 1074.4 | 1043.6 | 1020.1 | 1009.4 | 1004.1 | 1002.7 |
| 25° | 1170.1 | 1152.7 | 1149.3 | 1131.3 | 1088.4 | 1045.6 | 1004.1 | 982.7 | 973.9 | 971.3 | 971.9 |
| 27.5° | 1210.9 | 1198.9 | 1188.2 | 1136.6 | 1061.6 | 994.7 | 947.8 | 938.5 | 935.1 | 938.5 | 940.5 |
| 30° | 1261.1 | 1249.1 | 1225.0 | 1129.9 | 1018.8 | 928.4 | 883.6 | 882.9 | 893.0 | 901.7 | 903.0 |
| 32.5° | 1301.9 | 1296.6 | 1257.1 | 1108.5 | 958.6 | 855.5 | 817.3 | 820.0 | 838.1 | 850.1 | 852.1 |
| 35° | 1334.1 | 1342.8 | 1283.9 | 1073.0 | 886.9 | 786.5 | 756.4 | 757.7 | 767.8 | 784.5 | 785.2 |
| 37.5° | 1379.6 | 1409.0 | 1308.0 | 1018.8 | 804.6 | 726.9 | 699.5 | 689.5 | 688.1 | 692.8 | 694.1 |
| 40° | 1471.3 | 1515.5 | 1325.4 | 939.8 | 724.9 | 673.4 | 642.6 | 623.2 | 606.5 | 593.7 | 589.7 |
| 42.5° | 1609.9 | 1660.7 | 1335.4 | 844.1 | 654.0 | 620.5 | 585.7 | 560.9 | 531.5 | 504.7 | 495.3 |
| 45° | 1864.2 | 1881.0 | 1335.4 | 742.3 | 591.1 | 571.0 | 536.2 | 506.7 | 469.2 | 437.8 | 431.1 |
| 47.5° | 2271.2 | 2217.7 | 1336.8 | 643.9 | 535.5 | 527.5 | 497.3 | 463.9 | 422.4 | 396.3 | 392.3 |
| 50° | 2884.4 | 2696.3 | 1364.2 | 562.3 | 489.3 | 490.7 | 468.6 | 431.8 | 394.3 | 374.9 | 371.5 |
| 52.5° | 3579.2 | 3286.0 | 1437.8 | 502.0 | 450.5 | 460.5 | 448.5 | 413.0 | 379.5 | 362.8 | 359.5 |
| 55° | 4232.5 | 3828.2 | 1500.8 | 459.2 | 417.7 | 435.1 | 434.4 | 401.6 | 371.5 | 354.8 | 352.8 |
| 57.5° | 4788.1 | 4199.7 | 1491.4 | 424.4 | 389.6 | 411.7 | 421.7 | 394.3 | 366.2 | 352.1 | 350.1 |
| 60° | 5133.5 | 4396.5 | 1358.2 | 392.3 | 368.2 | 394.9 | 414.3 | 392.3 | 368.8 | 365.5 | 366.2 |
| 62.5° | 5283.4 | 4360.3 | 1102.5 | 368.2 | 354.1 | 386.9 | 422.4 | 406.3 | 393.6 | 401.6 | 406.3 |
| 65° | 5050.5 | 4049.8 | 811.3 | 350.1 | 340.7 | 388.9 | 441.1 | 428.4 | 393.6 | 399.0 | 401.0 |
| 67.5° | 4403.9 | 3447.3 | 586.4 | 332.0 | 324.0 | 394.9 | 467.9 | 425.1 | 370.8 | 370.8 | 366.8 |
| 70° | 3173.5 | 2479.4 | 425.7 | 313.9 | 307.2 | 386.2 | 469.2 | 402.3 | 344.7 | 342.7 | 332.7 |
| 72.5° | 1909.7 | 1462.6 | 332.0 | 293.9 | 281.8 | 342.7 | 439.8 | 375.5 | 319.3 | 302.6 | 290.5 |
| 75° | 992.0 | 733.0 | 278.5 | 271.8 | 241.6 | 290.5 | 402.3 | 334.0 | 273.1 | 258.4 | 251.7 |
| 77.5° | 425.1 | 342.7 | 239.0 | 242.3 | 200.8 | 244.3 | 324.6 | 289.2 | 242.3 | 223.6 | 217.5 |
| 80° | 209.5 | 194.8 | 188.8 | 194.1 | 160.7 | 188.8 | 279.8 | 253.0 | 205.5 | 184.1 | 175.4 |
| 82.5° | 119.8 | 113.8 | 135.9 | 137.9 | 114.5 | 158.0 | 236.3 | 214.2 | 170.0 | 146.6 | 132.5 |
| 85° | 55.6 | 59.6 | 82.3 | 83.0 | 71.0 | 108.4 | 154.6 | 120.5 | 90.4 | 75.0 | 71.6 |
| 87.5° | 22.1 | 26.1 | 36.1 | 35.5 | 20.8 | 20.1 | 13.4 | 7.4 | 6.0 | 5.4 | 4.7 |
| 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)