

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: P639508

Luminaire Tested: GWS-SA5C-722-U-AFL-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P639508
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-47)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5C-722-U-AFL-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (80) 2200K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15912.5 lumens
Efficiency: N/A
Efficacy: 101.0 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G1

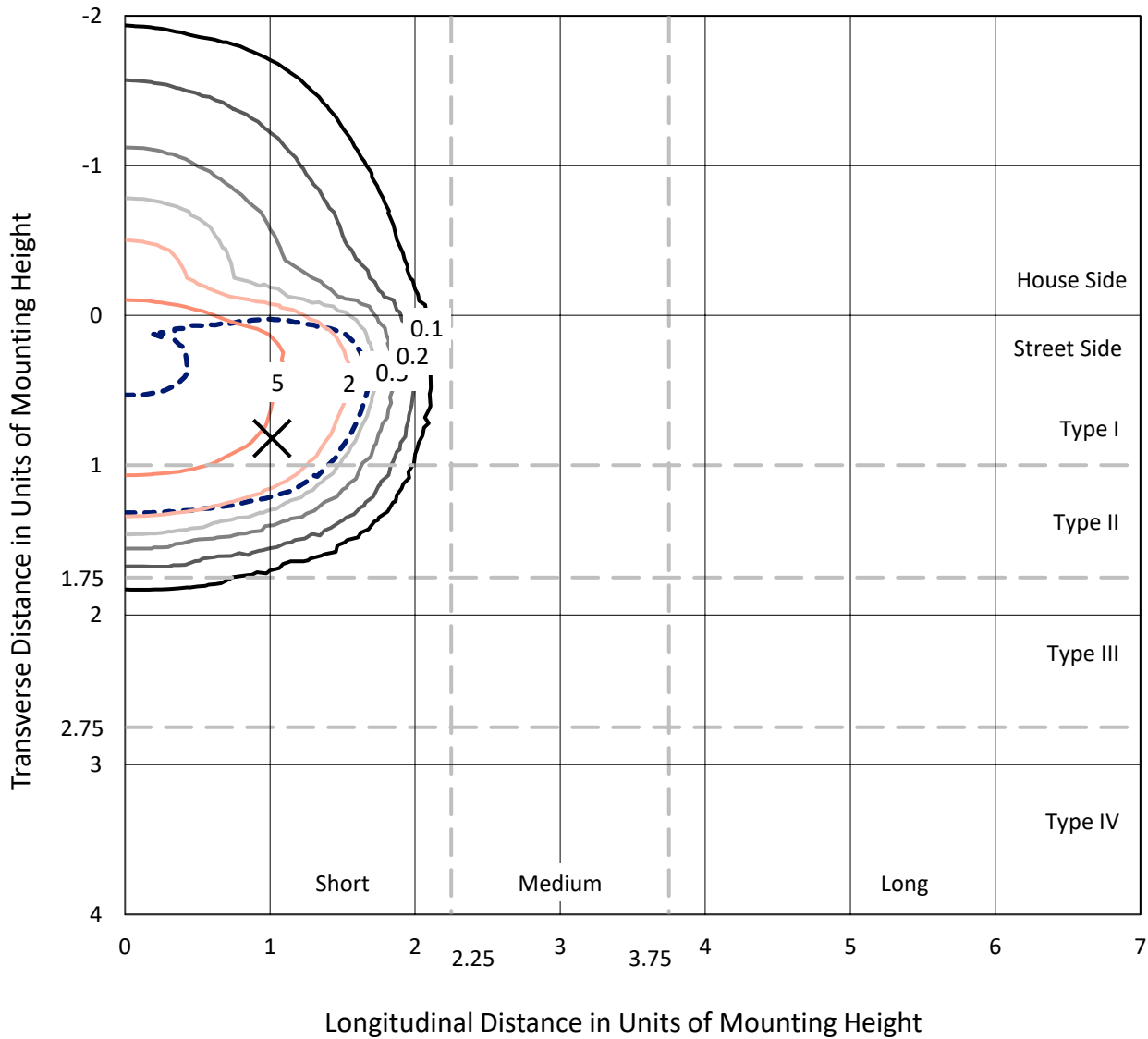
Input Watts (W): 157.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

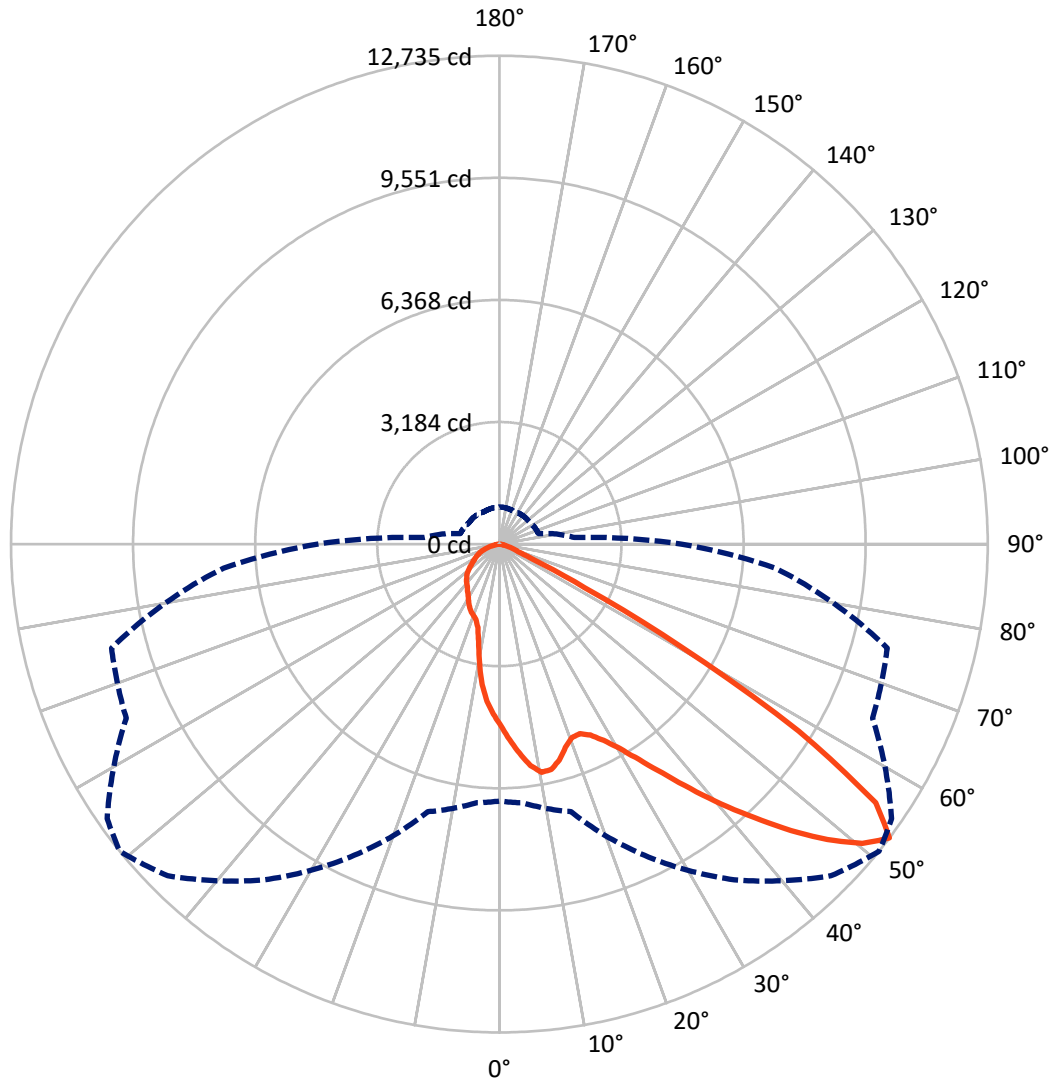
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.3 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 51-Deg Lateral - - - Horizontal Cone Through 52.5-Deg Vertical

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CATALOG NUMBER: GWS-SA5C-722-U-AFL-W-GRSWH

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3100.4 | 0.0 | 3100.4 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| Street Side | Lumens | 12812.1 | 0.0 | 12812.1 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| Total | Lumens | 15912.5 | 0.0 | 15912.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 442.1 | 2.8 |
| 10°-20° | 1148.8 | 7.2 |
| 20°-30° | 1867.8 | 11.7 |
| 30°-40° | 2960.1 | 18.6 |
| 40°-50° | 4464.5 | 28.1 |
| 50°-60° | 3862.1 | 24.3 |
| 60°-70° | 875.6 | 5.5 |
| 70°-80° | 258.2 | 1.6 |
| 80°-90° | 33.3 | 0.2 |
| 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° | 15912.5 | 100.0 |
| 0°-180° | 15912.5 | 100.0 |

Coefficient of Utilization



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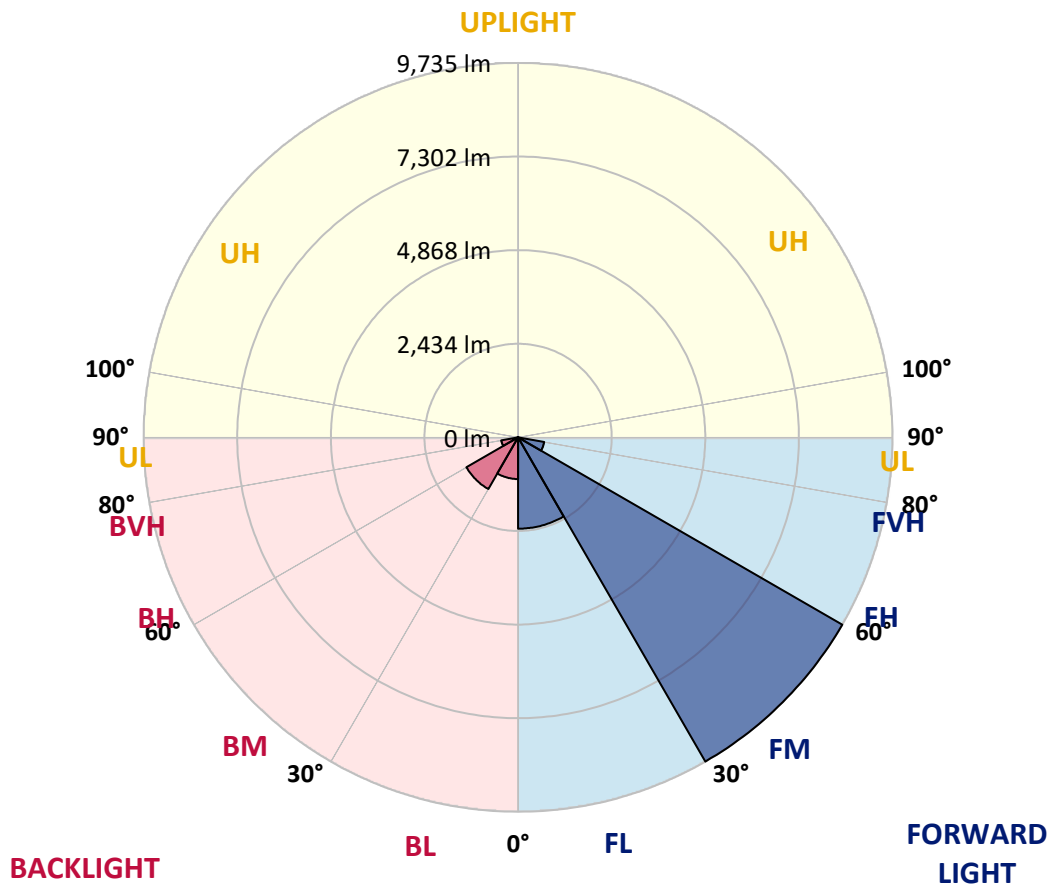
CATALOG NUMBER: GWS-SA5C-722-U-AFL-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2375.0 | 14.9 | | | |
| FM (30°-60°) | 9735.5 | 61.2 | | | |
| FH (60°-80°) | 689.1 | 4.3 | | | G1/1800 |
| FVH (80°-90°) | 12.5 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1083.8 | 6.8 | B3/2500 | | |
| BM (30°-60°) | 1551.2 | 9.7 | B2/2500 | | |
| BH (60°-80°) | 444.7 | 2.8 | B1/500 | | G1/500 |
| BVH (80°-90°) | 20.7 | 0.1 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 51° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 |
| 2.5° | 5279.9 | 5310.1 | 5263.5 | 5245.9 | 5217.0 | 5166.7 | 5108.9 | 5092.5 | 4968.1 | 4886.3 | 4794.5 |
| 5° | 5810.5 | 5826.9 | 5789.1 | 5751.4 | 5679.8 | 5590.5 | 5478.6 | 5454.7 | 5228.3 | 5041.0 | 4846.1 |
| 7.5° | 5928.7 | 5922.4 | 5955.1 | 5976.5 | 5967.7 | 5932.5 | 5833.2 | 5786.6 | 5516.3 | 5219.5 | 4931.6 |
| 10° | 5461.0 | 5425.8 | 5546.5 | 5689.8 | 5862.1 | 6060.7 | 6049.4 | 6045.7 | 5810.5 | 5459.7 | 5041.0 |
| 12.5° | 4841.1 | 4823.4 | 4921.5 | 5101.3 | 5427.0 | 5867.1 | 6031.8 | 6160.1 | 6075.8 | 5688.6 | 5163.0 |
| 15° | 4486.5 | 4480.2 | 4546.8 | 4676.3 | 4935.4 | 5491.1 | 5843.2 | 6097.2 | 6303.4 | 5933.7 | 5292.5 |
| 17.5° | 4422.3 | 4426.1 | 4448.7 | 4522.9 | 4709.0 | 5166.7 | 5574.1 | 5928.7 | 6480.7 | 6202.8 | 5454.7 |
| 20° | 4609.7 | 4634.8 | 4595.9 | 4607.2 | 4707.8 | 5049.8 | 5390.5 | 5759.0 | 6593.9 | 6473.2 | 5629.5 |
| 22.5° | 5025.9 | 5017.1 | 4931.6 | 4881.3 | 4882.5 | 5121.5 | 5370.4 | 5679.8 | 6668.1 | 6736.0 | 5787.9 |
| 25° | 5497.4 | 5487.4 | 5385.5 | 5273.6 | 5203.2 | 5316.4 | 5515.0 | 5764.0 | 6734.7 | 6976.1 | 5914.9 |
| 27.5° | 6054.5 | 6023.0 | 5909.9 | 5766.5 | 5610.6 | 5659.6 | 5794.2 | 5991.6 | 6837.8 | 7212.5 | 5999.1 |
| 30° | 6593.9 | 6630.4 | 6468.2 | 6298.4 | 6133.7 | 6103.5 | 6181.5 | 6360.0 | 7047.8 | 7489.2 | 6099.7 |
| 32.5° | 7309.4 | 7296.8 | 7117.0 | 6895.7 | 6660.5 | 6637.9 | 6699.5 | 6863.0 | 7425.0 | 7871.4 | 6253.1 |
| 35° | 8175.7 | 8178.2 | 7923.0 | 7623.7 | 7289.2 | 7228.9 | 7332.0 | 7490.4 | 7987.1 | 8389.5 | 6495.8 |
| 37.5° | 9076.0 | 9072.3 | 8849.7 | 8510.2 | 8053.8 | 7968.2 | 8086.4 | 8204.6 | 8690.0 | 9094.9 | 6873.0 |
| 40° | 9707.3 | 9732.4 | 9628.0 | 9449.5 | 9016.9 | 8808.2 | 8912.6 | 8994.3 | 9454.5 | 9924.8 | 7369.7 |
| 42.5° | 10065.6 | 10103.3 | 10126.0 | 10232.9 | 10005.3 | 9782.7 | 9745.0 | 9787.7 | 10137.3 | 10695.6 | 7836.2 |
| 45° | 10142.3 | 10192.6 | 10357.3 | 10753.4 | 10841.4 | 10778.6 | 10655.3 | 10552.2 | 10646.5 | 11242.6 | 8141.8 |
| 47.5° | 9804.1 | 9892.1 | 10244.2 | 10937.0 | 11451.3 | 11648.7 | 11511.6 | 11354.5 | 10940.8 | 11383.4 | 8110.3 |
| 50° | 8463.7 | 8566.8 | 9360.2 | 10562.3 | 11538.1 | 12257.3 | 12269.9 | 12037.2 | 10905.6 | 10977.2 | 7715.5 |
| 52.5° | 6700.8 | 6771.2 | 7225.1 | 8954.1 | 10686.8 | 12232.1 | 12735.1 | 12486.1 | 10735.8 | 10469.2 | 7221.3 |
| 55° | 4004.9 | 4118.0 | 4541.8 | 5907.3 | 8325.4 | 10841.4 | 11912.8 | 12033.5 | 10652.8 | 10043.0 | 6884.4 |
| 57.5° | 1351.7 | 1407.0 | 1811.9 | 2609.1 | 4906.4 | 7938.1 | 9204.3 | 9694.7 | 9670.8 | 9391.6 | 6226.7 |
| 60° | 643.8 | 656.4 | 738.1 | 989.6 | 1964.1 | 4148.2 | 5448.4 | 6014.2 | 6529.8 | 6581.3 | 3874.1 |
| 62.5° | 490.4 | 497.9 | 539.4 | 593.5 | 789.7 | 1747.8 | 2497.2 | 2929.8 | 3129.7 | 2685.8 | 1410.8 |
| 65° | 409.9 | 416.2 | 447.6 | 481.6 | 536.9 | 757.0 | 958.2 | 1105.3 | 995.9 | 775.8 | 672.7 |
| 67.5° | 342.0 | 347.0 | 370.9 | 407.4 | 445.1 | 506.7 | 531.9 | 547.0 | 573.4 | 643.8 | 618.6 |
| 70° | 267.8 | 272.9 | 298.0 | 329.4 | 365.9 | 381.0 | 404.9 | 420.0 | 472.8 | 563.3 | 560.8 |
| 72.5° | 206.2 | 212.5 | 226.3 | 246.5 | 276.6 | 291.7 | 318.1 | 335.7 | 365.9 | 438.8 | 469.0 |
| 75° | 150.9 | 154.7 | 167.2 | 173.5 | 177.3 | 173.5 | 199.9 | 220.0 | 260.3 | 287.9 | 295.5 |
| 77.5° | 61.6 | 69.2 | 66.6 | 66.6 | 79.2 | 95.6 | 109.4 | 122.0 | 149.6 | 166.0 | 167.2 |
| 80° | 25.1 | 27.7 | 32.7 | 36.5 | 44.0 | 56.6 | 65.4 | 70.4 | 83.0 | 93.0 | 100.6 |
| 82.5° | 15.1 | 16.3 | 18.9 | 20.1 | 25.1 | 32.7 | 37.7 | 41.5 | 51.6 | 61.6 | 65.4 |
| 85° | 7.5 | 7.5 | 8.8 | 10.1 | 12.6 | 15.1 | 17.6 | 20.1 | 26.4 | 32.7 | 36.5 |
| 87.5° | 1.3 | 1.3 | 1.3 | 2.5 | 3.8 | 5.0 | 6.3 | 7.5 | 8.8 | 10.1 | 12.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P639508

CATALOG NUMBER: GWS-SA5C-722-U-AFL-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 | 4737.9 |
| 2.5° | 4740.5 | 4672.6 | 4593.3 | 4530.5 | 4457.5 | 4403.5 | 4326.8 | 4279.0 | 4233.7 | 4196.0 | 4168.3 |
| 5° | 4745.5 | 4631.1 | 4466.3 | 4320.5 | 4169.6 | 4026.2 | 3879.1 | 3759.7 | 3652.8 | 3563.5 | 3556.0 |
| 7.5° | 4774.4 | 4609.7 | 4351.9 | 4096.7 | 3802.4 | 3518.3 | 3234.1 | 3002.7 | 2826.7 | 2734.9 | 2716.0 |
| 10° | 4823.4 | 4607.2 | 4235.0 | 3827.6 | 3325.9 | 2868.2 | 2531.2 | 2355.1 | 2253.3 | 2216.8 | 2204.3 |
| 12.5° | 4875.0 | 4600.9 | 4085.3 | 3447.8 | 2751.2 | 2350.1 | 2165.3 | 2143.9 | 2162.8 | 2165.3 | 2164.0 |
| 15° | 4937.9 | 4597.1 | 3896.7 | 3002.7 | 2331.3 | 2109.9 | 2122.5 | 2167.8 | 2211.8 | 2221.9 | 2221.9 |
| 17.5° | 5014.6 | 4588.3 | 3640.2 | 2567.6 | 2068.5 | 2063.4 | 2130.1 | 2190.4 | 2231.9 | 2239.5 | 2239.5 |
| 20° | 5095.1 | 4565.7 | 3324.6 | 2213.1 | 1961.6 | 2034.5 | 2106.2 | 2152.7 | 2181.6 | 2191.7 | 2192.9 |
| 22.5° | 5150.4 | 4505.3 | 2961.2 | 1950.3 | 1894.9 | 1979.2 | 2030.7 | 2078.5 | 2078.5 | 2053.4 | 2045.8 |
| 25° | 5161.7 | 4375.8 | 2567.6 | 1770.4 | 1815.7 | 1893.7 | 1946.5 | 1918.8 | 1867.3 | 1847.1 | 1845.9 |
| 27.5° | 5120.2 | 4187.2 | 2179.1 | 1642.2 | 1720.1 | 1798.1 | 1789.3 | 1749.1 | 1726.4 | 1706.3 | 1713.9 |
| 30° | 5069.9 | 3960.9 | 1842.1 | 1536.6 | 1609.5 | 1686.2 | 1656.0 | 1642.2 | 1625.8 | 1603.2 | 1608.2 |
| 32.5° | 5036.0 | 3708.1 | 1583.1 | 1454.8 | 1535.3 | 1547.9 | 1569.3 | 1568.0 | 1552.9 | 1510.2 | 1507.6 |
| 35° | 5046.0 | 3452.9 | 1409.6 | 1388.2 | 1473.7 | 1468.7 | 1508.9 | 1501.4 | 1397.0 | 1337.9 | 1334.1 |
| 37.5° | 5126.5 | 3207.7 | 1307.7 | 1335.4 | 1375.6 | 1407.0 | 1442.3 | 1351.7 | 1315.3 | 1277.5 | 1280.0 |
| 40° | 5279.9 | 2980.1 | 1252.4 | 1306.5 | 1316.5 | 1363.0 | 1281.3 | 1280.0 | 1263.7 | 1229.8 | 1228.5 |
| 42.5° | 5453.4 | 2787.7 | 1214.7 | 1292.6 | 1278.8 | 1287.6 | 1200.8 | 1210.9 | 1209.6 | 1188.3 | 1182.0 |
| 45° | 5559.0 | 2610.4 | 1184.5 | 1241.1 | 1244.8 | 1156.8 | 1130.4 | 1141.7 | 1148.0 | 1136.7 | 1135.4 |
| 47.5° | 5449.6 | 2406.7 | 1153.1 | 1161.9 | 1194.5 | 1097.7 | 1065.0 | 1066.3 | 1077.6 | 1078.9 | 1073.8 |
| 50° | 5142.8 | 2179.1 | 1115.3 | 1094.0 | 1072.6 | 1036.1 | 1005.9 | 999.6 | 1011.0 | 1022.3 | 1026.1 |
| 52.5° | 4746.7 | 1961.6 | 1052.5 | 1019.8 | 969.5 | 969.5 | 955.6 | 935.5 | 950.6 | 965.7 | 970.7 |
| 55° | 4456.3 | 1800.6 | 963.2 | 926.7 | 871.4 | 890.3 | 887.7 | 870.1 | 890.3 | 901.6 | 905.3 |
| 57.5° | 3861.5 | 1447.3 | 847.5 | 836.2 | 789.7 | 812.3 | 817.3 | 794.7 | 784.6 | 787.1 | 790.9 |
| 60° | 2292.3 | 934.3 | 764.5 | 763.3 | 721.8 | 748.2 | 763.3 | 740.6 | 710.4 | 714.2 | 719.2 |
| 62.5° | 1028.6 | 714.2 | 660.1 | 655.1 | 653.9 | 687.8 | 704.2 | 682.8 | 640.0 | 643.8 | 648.8 |
| 65° | 647.6 | 617.4 | 573.4 | 573.4 | 593.5 | 622.4 | 635.0 | 617.4 | 568.4 | 562.1 | 567.1 |
| 67.5° | 601.0 | 574.6 | 529.4 | 520.6 | 530.6 | 554.5 | 555.8 | 521.8 | 492.9 | 487.9 | 487.9 |
| 70° | 539.4 | 519.3 | 475.3 | 457.7 | 453.9 | 452.7 | 448.9 | 440.1 | 421.2 | 416.2 | 418.7 |
| 72.5° | 446.4 | 432.6 | 404.9 | 386.0 | 376.0 | 374.7 | 359.6 | 352.1 | 335.7 | 333.2 | 332.0 |
| 75° | 295.5 | 299.3 | 299.3 | 296.8 | 287.9 | 284.2 | 267.8 | 260.3 | 241.4 | 233.9 | 232.6 |
| 77.5° | 174.8 | 178.6 | 183.6 | 184.8 | 183.6 | 183.6 | 168.5 | 159.7 | 140.8 | 130.8 | 128.3 |
| 80° | 106.9 | 109.4 | 111.9 | 115.7 | 110.7 | 106.9 | 93.0 | 84.2 | 75.4 | 69.2 | 67.9 |
| 82.5° | 69.2 | 71.7 | 72.9 | 75.4 | 72.9 | 67.9 | 56.6 | 51.6 | 45.3 | 40.2 | 39.0 |
| 85° | 39.0 | 40.2 | 42.8 | 42.8 | 39.0 | 35.2 | 28.9 | 25.1 | 21.4 | 18.9 | 18.9 |
| 87.5° | 13.8 | 13.8 | 13.8 | 15.1 | 12.6 | 11.3 | 7.5 | 5.0 | 3.8 | 3.8 | 3.8 |
| 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: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

Test Information

Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-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-722-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): | 2237 | CRI (Ra): | 72.0 | R9: | -17.4 |
| CIE u': | 0.2876 | R1: | 68.9 | R10: | 61.3 |
| CIE v': | 0.5346 | R2: | 83.0 | R11: | 59.8 |
| Duv: | -0.0006 | R3: | 95.2 | R12: | 50.5 |
| CIE x: | 0.5005 | R4: | 66.2 | R13: | 71.1 |
| CIE y: | 0.4134 | R5: | 65.9 | R14: | 96.9 |
| CIE z: | 0.0860 | R6: | 76.3 | | |
| Peak Wavelength (nm): | 603 | R7: | 76.7 | | |
| Dominant Wavelength (nm): | 587 | R8: | 43.8 | | |
| Purity: | 74.5 | | | | |
| Rf: | 69.8 | | | | |
| Rg: | 99.2 | | | | |



Test Conditions

Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/41%
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-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 2200K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-10-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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1470.8 M/P: 0.27

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

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Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_9 = -17.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)