

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: P643755

Luminaire Tested: GWS-SA6F-750-U-SL3-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P643755
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-34)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SAGF-750-U-SL3-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: (96) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 41233.6 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G5

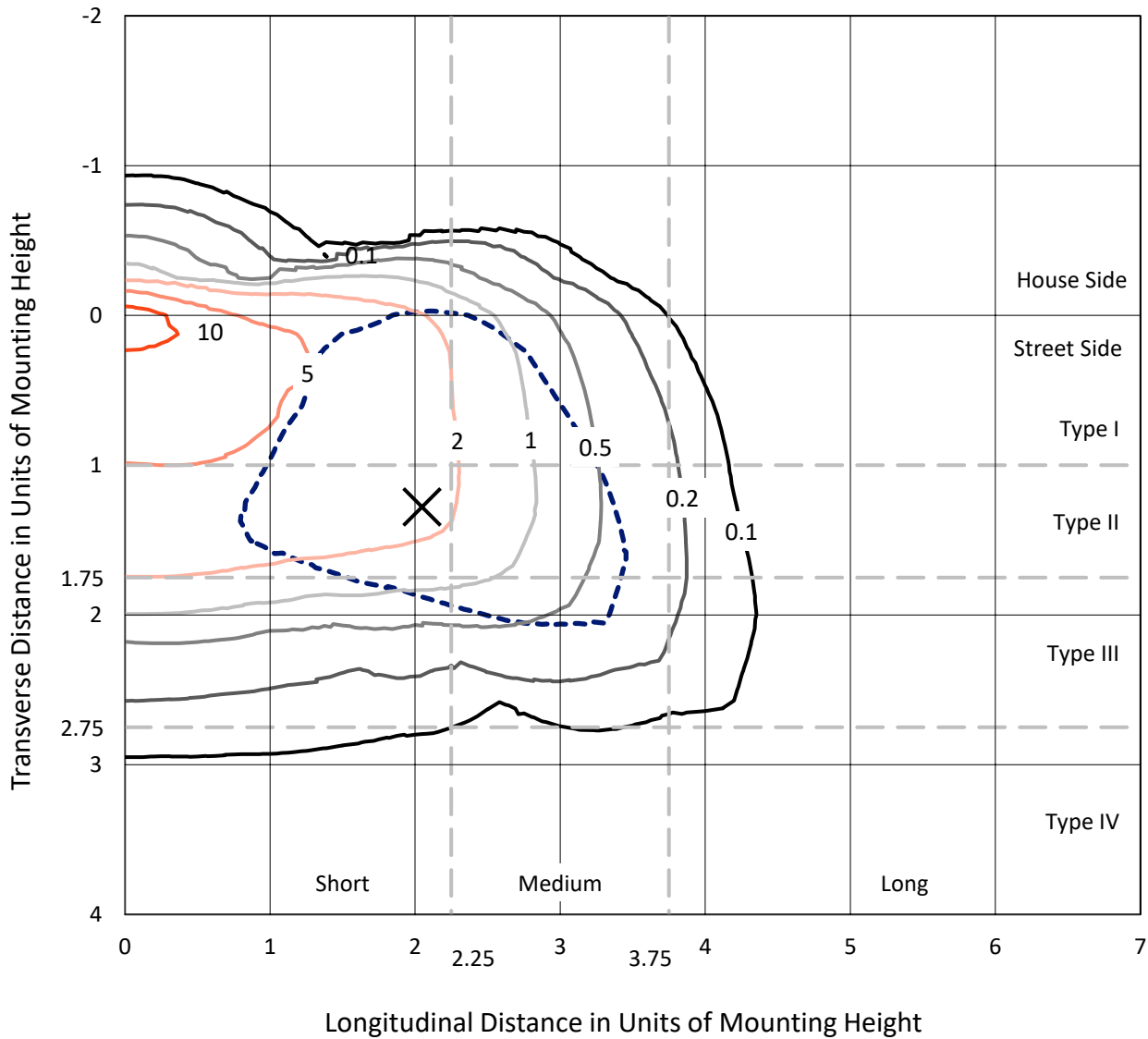
Input Watts (W): 372.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P643755
 CATALOG NUMBER: GWS-SA6F-750-U-SL3-W-HSS

Iso-Footcandle Lines of Horizontal Illumination

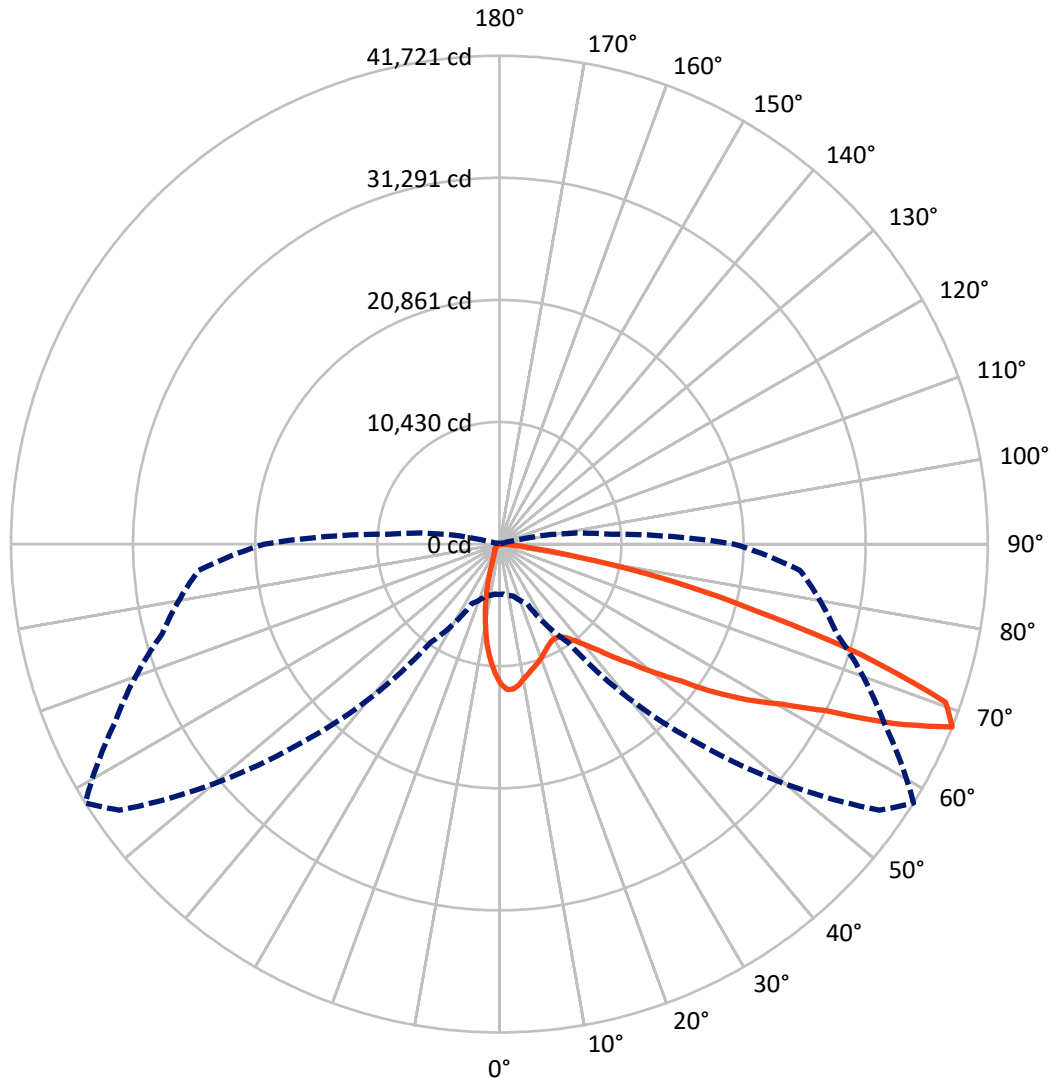
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 13.2 fc
 Type III - Short - N/A

REPORT NUMBER: P643755
CATALOG NUMBER: GWS-SA6F-750-U-SL3-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4028.2 | 0.0 | 4028.2 |
| | % Fixture | 9.8 | 0.0 | 9.8 |
| Street Side | Lumens | 37205.3 | 0.0 | 37205.3 |
| | % Fixture | 90.2 | 0.0 | 90.2 |
| Total | Lumens | 41233.6 | 0.0 | 41233.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 966.5 | 2.3 |
| 10°-20° | 2011.9 | 4.9 |
| 20°-30° | 2713.1 | 6.6 |
| 30°-40° | 3812.5 | 9.2 |
| 40°-50° | 5888.0 | 14.3 |
| 50°-60° | 9415.8 | 22.8 |
| 60°-70° | 11149.0 | 27.0 |
| 70°-80° | 4932.0 | 12.0 |
| 80°-90° | 344.8 | 0.8 |
| 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° | 41233.6 | 100.0 |
| 0°-180° | 41233.6 | 100.0 |

Coefficient of Utilization



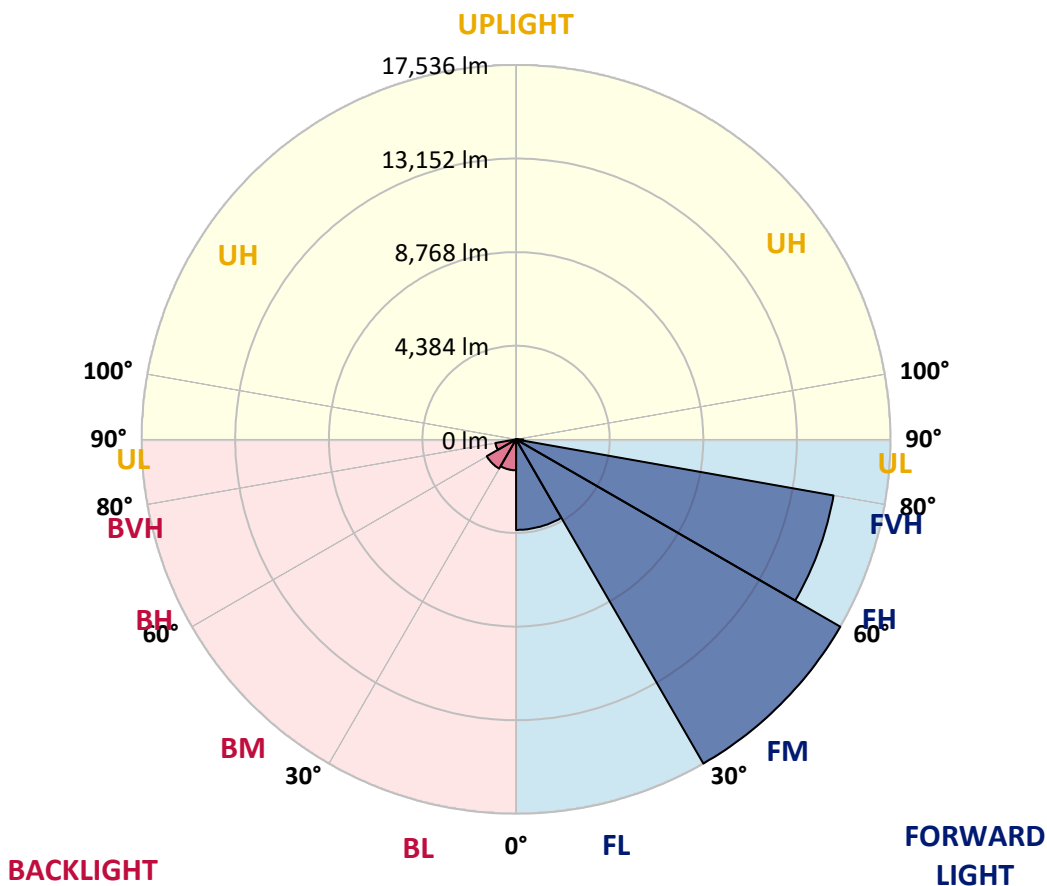
REPORT NUMBER: P643755

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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°) | 4241.9 | 10.3 | | | |
| FM (30°-60°) | 17535.8 | 42.5 | | | |
| FH (60°-80°) | 15097.6 | 36.6 | | | G5 |
| FVH (80°-90°) | 330.1 | 0.8 | | | G3/500 |
| BL (0°-30°) | 1449.6 | 3.5 | B3/2500 | | |
| BM (30°-60°) | 1580.6 | 3.8 | B2/2500 | | |
| BH (60°-80°) | 983.4 | 2.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 14.7 | 0.0 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5
 Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 |
| 2.5° | 12510.5 | 12532.4 | 12561.6 | 12598.1 | 12590.8 | 12557.9 | 12517.8 | 12426.5 | 12368.1 | 12185.7 | 11963.0 |
| 5° | 12109.0 | 12105.4 | 12178.4 | 12247.7 | 12371.8 | 12437.5 | 12528.7 | 12444.8 | 12415.6 | 12196.6 | 11835.3 |
| 7.5° | 11324.4 | 11364.5 | 11448.5 | 11558.0 | 11736.8 | 11930.2 | 12149.2 | 12123.6 | 12211.2 | 12065.2 | 11616.3 |
| 10° | 10554.3 | 10532.4 | 10663.8 | 10828.1 | 11101.8 | 11349.9 | 11667.4 | 11663.8 | 11893.7 | 11879.1 | 11368.2 |
| 12.5° | 9879.2 | 9875.5 | 9977.7 | 10163.8 | 10485.0 | 10831.7 | 11262.3 | 11273.3 | 11558.0 | 11674.7 | 11156.5 |
| 15° | 9309.9 | 9317.2 | 9415.7 | 9609.1 | 9941.2 | 10364.6 | 10864.5 | 10955.8 | 11276.9 | 11514.2 | 10948.5 |
| 17.5° | 8904.8 | 8908.4 | 8966.8 | 9134.7 | 9459.5 | 9912.0 | 10514.2 | 10638.3 | 11050.7 | 11393.7 | 10780.6 |
| 20° | 8718.6 | 8704.0 | 8715.0 | 8798.9 | 9050.7 | 9463.1 | 10156.5 | 10317.1 | 10842.7 | 11309.8 | 10627.3 |
| 22.5° | 8744.2 | 8722.3 | 8671.2 | 8660.3 | 8773.4 | 9087.2 | 9777.0 | 9974.1 | 10616.4 | 11258.7 | 10488.6 |
| 25° | 8970.5 | 8923.0 | 8850.0 | 8740.5 | 8696.7 | 8853.7 | 9444.9 | 9649.3 | 10404.7 | 11262.3 | 10382.8 |
| 27.5° | 9317.2 | 9266.1 | 9174.8 | 9028.9 | 8857.3 | 8791.6 | 9218.6 | 9412.0 | 10255.1 | 11346.3 | 10331.7 |
| 30° | 9758.8 | 9718.6 | 9631.0 | 9455.8 | 9225.9 | 8955.9 | 9171.2 | 9331.8 | 10182.1 | 11517.8 | 10353.6 |
| 32.5° | 10280.6 | 10251.4 | 10178.4 | 10017.9 | 9755.1 | 9342.7 | 9331.8 | 9455.8 | 10240.5 | 11766.0 | 10437.6 |
| 35° | 10784.3 | 10795.2 | 10798.9 | 10711.3 | 10430.3 | 9930.3 | 9773.3 | 9817.1 | 10481.4 | 12138.2 | 10627.3 |
| 37.5° | 11328.0 | 11302.5 | 11433.9 | 11495.9 | 11225.8 | 10693.0 | 10455.8 | 10459.5 | 10941.2 | 12689.3 | 10985.0 |
| 40° | 11740.4 | 11747.7 | 12032.4 | 12287.9 | 12174.7 | 11660.1 | 11320.7 | 11317.1 | 11649.2 | 13444.7 | 11561.6 |
| 42.5° | 12127.3 | 12174.7 | 12594.4 | 13032.3 | 13189.3 | 12733.1 | 12488.6 | 12397.3 | 12641.9 | 14466.6 | 12426.5 |
| 45° | 12539.7 | 12609.0 | 13196.6 | 13820.6 | 14233.0 | 13963.0 | 13769.5 | 13806.0 | 13835.2 | 15656.3 | 13590.7 |
| 47.5° | 13021.4 | 13065.2 | 13791.4 | 14671.0 | 15441.0 | 15371.7 | 15382.6 | 15338.8 | 15324.2 | 17156.3 | 15130.8 |
| 50° | 13605.3 | 13707.5 | 14543.2 | 15594.3 | 16645.3 | 17105.2 | 17258.5 | 17276.7 | 17039.5 | 18791.3 | 16725.6 |
| 52.5° | 14846.1 | 14970.2 | 15685.5 | 16605.2 | 17959.2 | 18926.3 | 19550.3 | 19426.3 | 19061.3 | 20375.1 | 18473.7 |
| 55° | 16309.6 | 16404.5 | 17094.2 | 18046.8 | 19564.9 | 20922.6 | 22404.3 | 22353.2 | 21459.0 | 22043.0 | 19911.6 |
| 57.5° | 16448.3 | 16554.1 | 17623.4 | 19083.2 | 21626.9 | 23389.6 | 24948.0 | 25112.2 | 23802.0 | 23225.4 | 21196.3 |
| 60° | 14889.9 | 15105.3 | 16565.1 | 18528.5 | 22415.2 | 26707.0 | 27736.2 | 27769.0 | 25520.9 | 24426.1 | 22765.6 |
| 62.5° | 11933.8 | 12036.0 | 13506.8 | 16068.7 | 21199.9 | 28641.2 | 31995.1 | 31301.7 | 27728.9 | 26283.7 | 25250.9 |
| 65° | 6255.2 | 6671.3 | 7952.3 | 10787.9 | 17192.8 | 27966.1 | 37119.0 | 36929.2 | 31699.5 | 28944.1 | 27185.1 |
| 67.5° | 4291.8 | 4288.2 | 4591.1 | 5623.9 | 10251.4 | 24079.4 | 39633.5 | 41721.0 | 36290.6 | 29856.5 | 25783.7 |
| 70° | 3266.3 | 3277.2 | 3547.3 | 4218.8 | 5310.0 | 16028.6 | 36874.5 | 40443.7 | 37144.6 | 27108.5 | 20853.2 |
| 72.5° | 2167.8 | 2189.7 | 2638.6 | 3408.6 | 4240.7 | 7857.4 | 28655.8 | 32360.1 | 31254.3 | 21772.9 | 14678.3 |
| 75° | 1295.6 | 1313.8 | 1635.0 | 2478.0 | 3769.9 | 4397.6 | 18207.3 | 22371.4 | 21513.8 | 15006.7 | 7868.3 |
| 77.5° | 532.8 | 547.4 | 839.4 | 1543.7 | 2759.0 | 3415.9 | 10069.0 | 14638.1 | 12886.4 | 5966.9 | 2149.6 |
| 80° | 222.6 | 229.9 | 405.1 | 1080.3 | 1989.0 | 2142.3 | 4664.1 | 6879.3 | 5280.8 | 1284.6 | 656.9 |
| 82.5° | 80.3 | 83.9 | 149.6 | 594.9 | 1237.2 | 1613.1 | 2353.9 | 2718.9 | 1489.0 | 419.7 | 354.0 |
| 85° | 3.6 | 3.6 | 36.5 | 200.7 | 470.8 | 456.2 | 1346.7 | 1302.9 | 492.7 | 175.2 | 211.7 |
| 87.5° | 0.0 | 0.0 | 3.6 | 3.6 | 7.3 | 18.2 | 127.7 | 226.3 | 105.8 | 43.8 | 91.2 |
| 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: P643755

CATALOG NUMBER: GWS-SA6F-750-U-SL3-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 | 11893.7 |
| 2.5° | 11817.1 | 11623.6 | 11412.0 | 11214.9 | 10901.0 | 10714.9 | 10485.0 | 10382.8 | 10236.8 | 10200.3 | 10222.2 |
| 5° | 11576.2 | 11244.1 | 10736.8 | 10277.0 | 9682.1 | 9204.0 | 8722.3 | 8517.9 | 8255.2 | 8080.0 | 8007.0 |
| 7.5° | 11236.8 | 10802.5 | 10010.6 | 9174.8 | 8357.3 | 7485.1 | 6820.9 | 6383.0 | 5985.2 | 5766.2 | 5722.4 |
| 10° | 10893.7 | 10328.1 | 9193.1 | 7996.0 | 6729.7 | 5685.9 | 4788.1 | 4123.9 | 3583.8 | 3339.3 | 3149.5 |
| 12.5° | 10539.7 | 9835.4 | 8361.0 | 6799.0 | 5328.3 | 3905.0 | 2795.5 | 2149.6 | 1762.7 | 1609.4 | 1635.0 |
| 15° | 10214.9 | 9361.0 | 7536.2 | 5602.0 | 3751.7 | 2357.6 | 1543.7 | 1302.9 | 1211.6 | 1182.4 | 1178.8 |
| 17.5° | 9904.7 | 8912.1 | 6715.1 | 4437.8 | 2474.4 | 1445.2 | 1182.4 | 1124.0 | 1098.5 | 1083.9 | 1083.9 |
| 20° | 9623.7 | 8481.4 | 5912.2 | 3342.9 | 1598.5 | 1145.9 | 1069.3 | 1040.1 | 1018.2 | 1007.3 | 1007.3 |
| 22.5° | 9361.0 | 8065.4 | 5127.5 | 2364.9 | 1178.8 | 1029.2 | 981.7 | 952.5 | 927.0 | 912.4 | 912.4 |
| 25° | 9123.7 | 7689.5 | 4379.4 | 1627.7 | 1014.6 | 941.6 | 890.5 | 857.6 | 813.8 | 788.3 | 788.3 |
| 27.5° | 8952.2 | 7353.7 | 3660.4 | 1186.1 | 916.0 | 846.7 | 788.3 | 744.5 | 697.1 | 667.9 | 660.6 |
| 30° | 8850.0 | 7069.1 | 2934.2 | 974.4 | 824.8 | 755.4 | 689.8 | 635.0 | 580.3 | 551.1 | 547.4 |
| 32.5° | 8791.6 | 6806.3 | 2270.0 | 850.3 | 748.1 | 667.9 | 594.9 | 536.5 | 481.7 | 448.9 | 445.2 |
| 35° | 8813.5 | 6601.9 | 1700.7 | 766.4 | 675.2 | 591.2 | 510.9 | 452.5 | 405.1 | 375.9 | 368.6 |
| 37.5° | 9003.3 | 6510.7 | 1277.3 | 700.7 | 613.1 | 525.5 | 441.6 | 386.8 | 343.1 | 321.2 | 317.5 |
| 40° | 9371.9 | 6528.9 | 1003.6 | 649.6 | 562.0 | 459.8 | 379.5 | 328.5 | 295.6 | 277.4 | 273.7 |
| 42.5° | 9944.9 | 6682.2 | 828.4 | 605.8 | 507.3 | 401.4 | 328.5 | 288.3 | 255.5 | 237.2 | 233.6 |
| 45° | 10798.9 | 6999.7 | 722.6 | 554.7 | 448.9 | 346.7 | 284.7 | 248.2 | 219.0 | 197.1 | 193.4 |
| 47.5° | 12036.0 | 7550.8 | 653.3 | 507.3 | 397.8 | 299.3 | 244.5 | 208.0 | 182.5 | 164.2 | 160.6 |
| 50° | 13353.5 | 8211.4 | 594.9 | 459.8 | 354.0 | 259.1 | 208.0 | 171.5 | 149.6 | 131.4 | 127.7 |
| 52.5° | 14758.6 | 8923.0 | 551.1 | 416.0 | 313.9 | 222.6 | 175.2 | 142.3 | 120.4 | 102.2 | 98.5 |
| 55° | 16108.9 | 9638.3 | 500.0 | 386.8 | 266.4 | 189.8 | 146.0 | 116.8 | 94.9 | 80.3 | 80.3 |
| 57.5° | 17422.7 | 10295.2 | 445.2 | 339.4 | 219.0 | 160.6 | 120.4 | 94.9 | 76.6 | 65.7 | 62.0 |
| 60° | 18992.0 | 11204.0 | 383.2 | 288.3 | 182.5 | 135.0 | 98.5 | 76.6 | 62.0 | 51.1 | 51.1 |
| 62.5° | 21324.0 | 12149.2 | 328.5 | 240.9 | 153.3 | 113.1 | 80.3 | 62.0 | 51.1 | 43.8 | 40.1 |
| 65° | 22086.7 | 11638.2 | 277.4 | 197.1 | 124.1 | 91.2 | 65.7 | 54.7 | 43.8 | 40.1 | 36.5 |
| 67.5° | 20050.3 | 9539.8 | 229.9 | 160.6 | 102.2 | 76.6 | 58.4 | 47.4 | 40.1 | 36.5 | 32.8 |
| 70° | 15645.4 | 6769.8 | 178.8 | 120.4 | 83.9 | 62.0 | 51.1 | 43.8 | 36.5 | 32.8 | 32.8 |
| 72.5° | 10641.9 | 4003.5 | 142.3 | 91.2 | 69.3 | 54.7 | 43.8 | 40.1 | 36.5 | 32.8 | 29.2 |
| 75° | 5240.7 | 1423.3 | 109.5 | 69.3 | 54.7 | 47.4 | 40.1 | 36.5 | 32.8 | 29.2 | 29.2 |
| 77.5° | 1412.4 | 394.1 | 83.9 | 54.7 | 43.8 | 36.5 | 36.5 | 36.5 | 32.8 | 25.5 | 25.5 |
| 80° | 478.1 | 164.2 | 62.0 | 40.1 | 36.5 | 29.2 | 25.5 | 32.8 | 29.2 | 25.5 | 21.9 |
| 82.5° | 262.8 | 80.3 | 43.8 | 32.8 | 25.5 | 21.9 | 21.9 | 21.9 | 21.9 | 18.2 | 18.2 |
| 85° | 167.9 | 43.8 | 29.2 | 25.5 | 25.5 | 18.2 | 14.6 | 14.6 | 10.9 | 10.9 | 10.9 |
| 87.5° | 76.6 | 25.5 | 25.5 | 21.9 | 21.9 | 18.2 | 10.9 | 7.3 | 3.6 | 3.6 | 3.6 |
| 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 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



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 |

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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 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)