

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: P629479

Luminaire Tested: GWS-SA1B-760-U-T3-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P629479
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-25)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1B-760-U-T3-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (16) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3086.2 lumens
Efficiency: N/A
Efficacy: 123.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G1

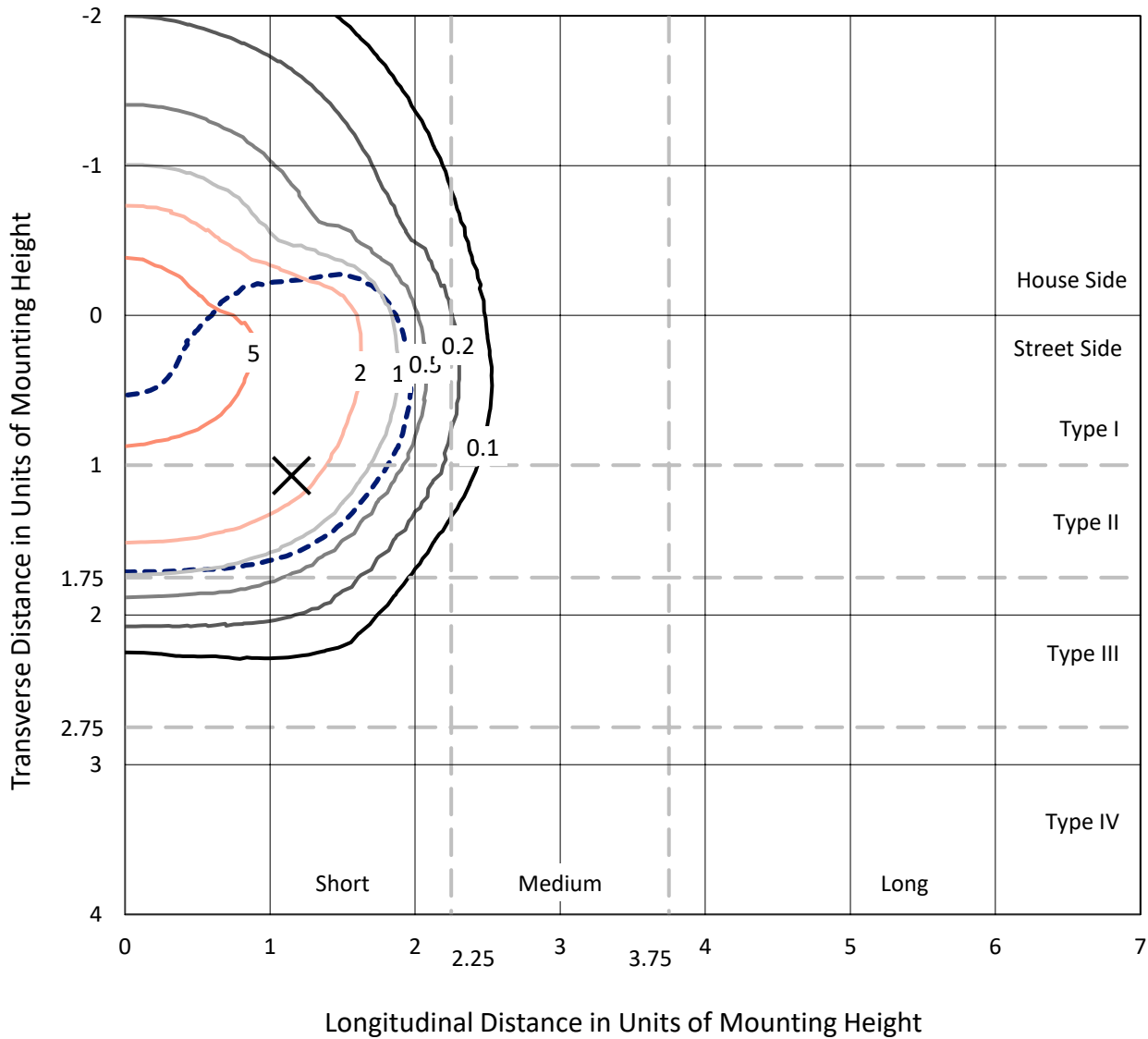
Input Watts (W): 25
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P629479
 CATALOG NUMBER: GWS-SA1B-760-U-T3-W-GRSWH

Iso-Footcandle Lines of Horizontal Illumination

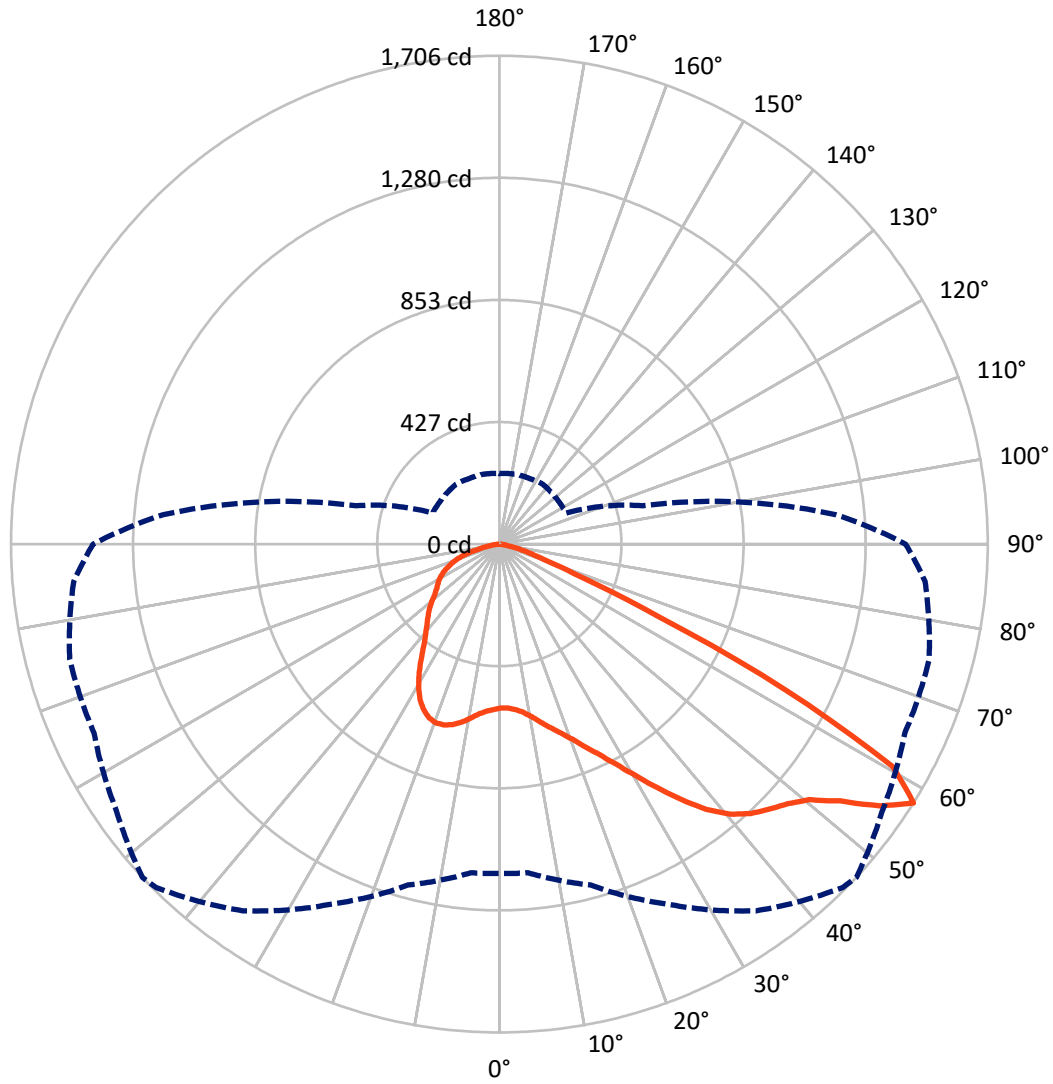
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6.4 fc
 Type II - Short - N/A

REPORT NUMBER: P629479
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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 976.8 | 0.0 | 976.8 |
| | % Fixture | 31.6 | 0.0 | 31.6 |
| Street Side | Lumens | 2109.4 | 0.0 | 2109.4 |
| | % Fixture | 68.4 | 0.0 | 68.4 |
| Total | Lumens | 3086.2 | 0.0 | 3086.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 56.5 | 1.8 |
| 10°-20° | 185.7 | 6.0 |
| 20°-30° | 334.3 | 10.8 |
| 30°-40° | 504.9 | 16.4 |
| 40°-50° | 680.0 | 22.0 |
| 50°-60° | 817.1 | 26.5 |
| 60°-70° | 397.9 | 12.9 |
| 70°-80° | 98.0 | 3.2 |
| 80°-90° | 11.8 | 0.4 |
| 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° | 3086.2 | 100.0 |
| 0°-180° | 3086.2 | 100.0 |

Coefficient of Utilization

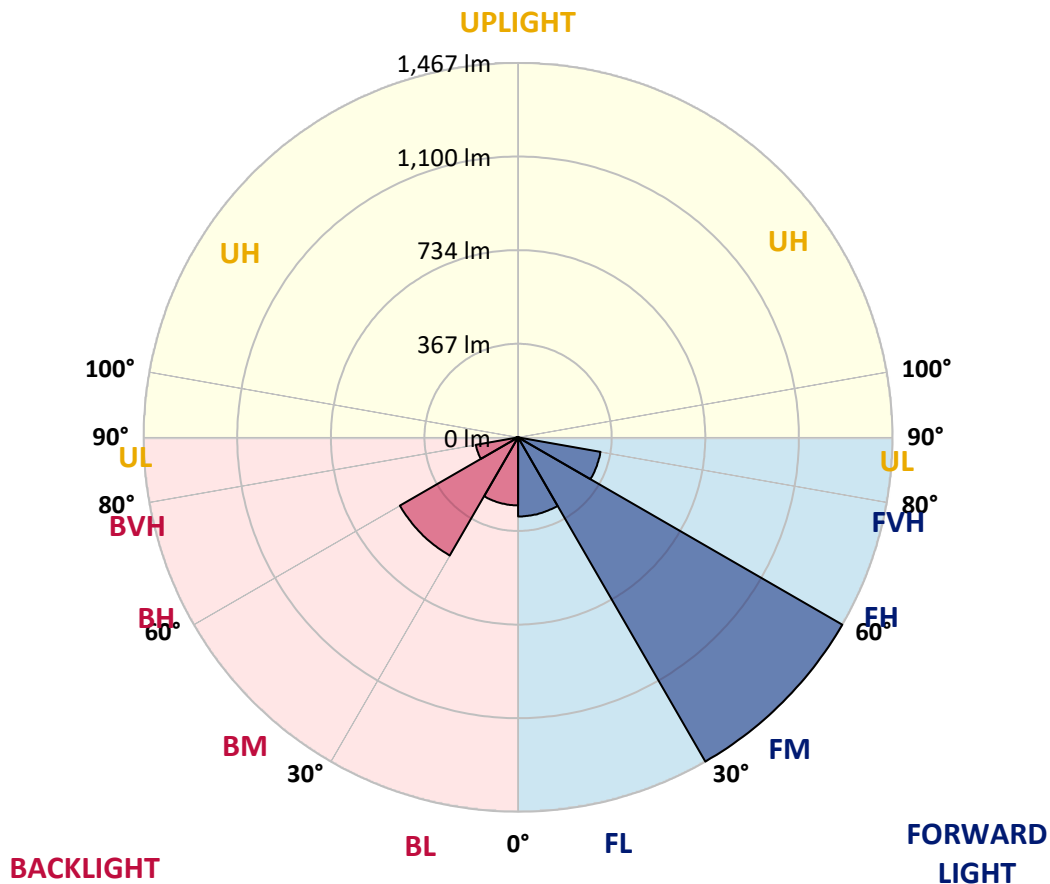


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 310.0 | 10.0 | | | |
| FM (30°-60°) | 1467.0 | 47.5 | | | |
| FH (60°-80°) | 328.0 | 10.6 | | | G0/660 |
| FVH (80°-90°) | 4.4 | 0.1 | | | G0/10 |
| BL (0°-30°) | 266.4 | 8.6 | B1/500 | | |
| BM (30°-60°) | 535.0 | 17.3 | B1/1000 | | |
| BH (60°-80°) | 168.0 | 5.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 7.4 | 0.2 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 |
| 2.5° | 571.3 | 571.0 | 571.0 | 572.6 | 572.6 | 573.1 | 573.9 | 574.7 | 574.9 | 573.6 | 570.8 |
| 5° | 577.5 | 577.5 | 577.5 | 578.8 | 578.8 | 579.3 | 580.4 | 580.6 | 580.4 | 578.3 | 575.5 |
| 7.5° | 587.4 | 587.4 | 587.6 | 589.2 | 590.5 | 591.3 | 593.1 | 592.8 | 592.0 | 588.7 | 585.0 |
| 10° | 603.4 | 604.2 | 605.0 | 606.8 | 609.4 | 611.2 | 612.5 | 612.5 | 611.5 | 606.3 | 601.6 |
| 12.5° | 626.3 | 627.3 | 628.1 | 629.6 | 631.7 | 634.8 | 637.7 | 637.7 | 636.4 | 629.9 | 622.9 |
| 15° | 653.0 | 654.0 | 653.7 | 654.3 | 658.1 | 662.5 | 664.9 | 666.4 | 667.0 | 657.9 | 647.0 |
| 17.5° | 683.5 | 684.6 | 683.5 | 682.0 | 682.5 | 689.5 | 693.7 | 699.4 | 702.7 | 690.5 | 673.2 |
| 20° | 711.3 | 710.2 | 710.2 | 711.3 | 712.8 | 721.4 | 727.6 | 736.9 | 741.1 | 726.3 | 699.4 |
| 22.5° | 740.6 | 742.9 | 741.9 | 741.9 | 748.1 | 762.3 | 769.9 | 782.0 | 786.4 | 767.3 | 731.0 |
| 25° | 778.4 | 780.5 | 780.0 | 780.5 | 787.7 | 808.0 | 815.5 | 838.0 | 842.4 | 815.0 | 766.0 |
| 27.5° | 819.9 | 823.3 | 824.8 | 824.3 | 836.0 | 862.4 | 871.7 | 903.1 | 911.1 | 868.4 | 803.3 |
| 30° | 873.8 | 877.4 | 878.7 | 878.2 | 891.9 | 928.0 | 938.6 | 974.4 | 985.8 | 931.6 | 850.7 |
| 32.5° | 936.3 | 939.9 | 943.8 | 945.3 | 963.0 | 999.8 | 1015.1 | 1052.1 | 1068.5 | 1004.7 | 908.0 |
| 35° | 998.2 | 1001.3 | 1008.9 | 1021.0 | 1045.1 | 1082.7 | 1096.2 | 1132.8 | 1148.6 | 1080.7 | 977.2 |
| 37.5° | 1066.7 | 1068.7 | 1075.2 | 1092.1 | 1126.8 | 1162.6 | 1176.0 | 1211.0 | 1212.9 | 1154.0 | 1055.5 |
| 40° | 1141.6 | 1141.6 | 1140.3 | 1156.9 | 1193.2 | 1229.2 | 1240.8 | 1261.1 | 1250.4 | 1210.5 | 1131.7 |
| 42.5° | 1205.1 | 1204.0 | 1205.1 | 1220.6 | 1247.6 | 1276.9 | 1287.0 | 1283.1 | 1269.6 | 1253.8 | 1200.7 |
| 45° | 1262.4 | 1263.1 | 1272.5 | 1284.4 | 1298.4 | 1315.8 | 1321.7 | 1299.7 | 1287.5 | 1288.5 | 1255.9 |
| 47.5° | 1301.2 | 1302.0 | 1323.8 | 1343.8 | 1352.3 | 1357.8 | 1355.2 | 1324.6 | 1318.4 | 1330.0 | 1298.4 |
| 50° | 1306.4 | 1310.6 | 1348.2 | 1389.1 | 1410.4 | 1411.2 | 1403.9 | 1366.6 | 1364.8 | 1378.0 | 1321.2 |
| 52.5° | 1307.5 | 1311.6 | 1358.5 | 1432.4 | 1487.6 | 1499.3 | 1491.0 | 1452.1 | 1433.2 | 1420.0 | 1349.2 |
| 55° | 1303.6 | 1308.2 | 1360.1 | 1461.4 | 1567.2 | 1613.9 | 1614.6 | 1559.7 | 1499.3 | 1490.5 | 1429.0 |
| 57.5° | 1150.9 | 1152.7 | 1233.1 | 1387.6 | 1564.1 | 1696.3 | 1706.4 | 1631.7 | 1562.8 | 1554.5 | 1493.1 |
| 60° | 801.7 | 809.0 | 896.4 | 1100.4 | 1313.9 | 1547.0 | 1579.6 | 1557.9 | 1511.7 | 1451.3 | 1281.0 |
| 62.5° | 401.5 | 407.7 | 495.4 | 688.2 | 906.2 | 1090.2 | 1125.2 | 1148.3 | 1159.2 | 1094.4 | 872.2 |
| 65° | 172.9 | 177.6 | 232.0 | 359.5 | 513.0 | 601.9 | 614.1 | 641.8 | 709.7 | 633.3 | 470.0 |
| 67.5° | 115.6 | 118.7 | 146.5 | 219.3 | 302.2 | 307.9 | 306.1 | 312.1 | 326.9 | 269.8 | 212.3 |
| 70° | 88.7 | 91.2 | 109.9 | 160.7 | 217.2 | 185.9 | 176.0 | 159.7 | 173.4 | 176.8 | 172.1 |
| 72.5° | 64.3 | 66.4 | 80.4 | 109.6 | 136.1 | 118.7 | 117.2 | 125.5 | 144.1 | 149.3 | 146.5 |
| 75° | 41.5 | 42.5 | 51.1 | 60.1 | 70.2 | 76.2 | 79.3 | 94.4 | 113.3 | 117.2 | 113.8 |
| 77.5° | 27.7 | 28.5 | 33.4 | 38.6 | 39.9 | 40.2 | 41.2 | 48.0 | 60.9 | 68.2 | 67.4 |
| 80° | 14.5 | 14.5 | 16.3 | 16.3 | 18.7 | 22.3 | 23.3 | 27.7 | 33.7 | 37.3 | 37.6 |
| 82.5° | 5.7 | 6.0 | 7.0 | 7.8 | 9.3 | 11.4 | 12.2 | 14.5 | 17.6 | 20.2 | 22.6 |
| 85° | 2.3 | 2.6 | 2.9 | 3.4 | 4.1 | 5.2 | 5.4 | 6.2 | 8.3 | 10.4 | 11.7 |
| 87.5° | 0.0 | 0.0 | 0.3 | 0.3 | 0.5 | 0.8 | 0.8 | 1.0 | 1.3 | 2.3 | 3.1 |
| 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: P629479
 CATALOG NUMBER: GWS-SA1B-760-U-T3-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 | 572.3 |
| 2.5° | 574.2 | 570.8 | 574.2 | 575.2 | 578.0 | 579.1 | 577.3 | 577.0 | 577.0 | 574.4 | 573.6 |
| 5° | 578.0 | 574.9 | 578.3 | 579.9 | 584.0 | 586.6 | 587.1 | 589.2 | 590.5 | 589.4 | 589.2 |
| 7.5° | 587.6 | 583.7 | 587.4 | 589.7 | 595.2 | 599.3 | 601.1 | 605.8 | 609.1 | 608.6 | 608.4 |
| 10° | 604.5 | 599.3 | 603.4 | 607.3 | 613.3 | 618.2 | 618.5 | 621.1 | 624.4 | 623.4 | 622.9 |
| 12.5° | 623.9 | 619.0 | 623.7 | 627.6 | 634.6 | 636.6 | 633.3 | 632.2 | 632.7 | 631.4 | 630.4 |
| 15° | 647.8 | 640.8 | 644.9 | 649.3 | 653.2 | 650.9 | 643.6 | 640.8 | 640.5 | 638.7 | 637.7 |
| 17.5° | 671.6 | 662.8 | 665.9 | 668.2 | 666.4 | 659.2 | 650.1 | 645.2 | 642.8 | 639.2 | 638.2 |
| 20° | 695.2 | 684.1 | 683.5 | 681.7 | 673.4 | 660.2 | 648.0 | 638.2 | 632.2 | 627.3 | 625.5 |
| 22.5° | 722.2 | 706.6 | 698.8 | 690.5 | 672.4 | 650.9 | 632.5 | 618.5 | 608.9 | 602.7 | 600.6 |
| 25° | 751.2 | 729.2 | 713.1 | 696.5 | 662.0 | 630.9 | 605.3 | 586.1 | 574.7 | 567.9 | 565.6 |
| 27.5° | 780.0 | 749.6 | 725.5 | 697.3 | 641.3 | 602.1 | 567.7 | 541.8 | 530.3 | 524.9 | 523.1 |
| 30° | 818.9 | 776.9 | 740.3 | 687.2 | 614.1 | 562.2 | 519.2 | 493.0 | 485.5 | 481.6 | 480.1 |
| 32.5° | 863.7 | 811.3 | 760.0 | 665.9 | 579.3 | 515.6 | 470.2 | 452.1 | 446.9 | 439.4 | 439.1 |
| 35° | 922.8 | 860.6 | 778.7 | 634.6 | 535.5 | 465.5 | 432.6 | 419.7 | 410.3 | 398.4 | 397.4 |
| 37.5° | 991.7 | 922.0 | 788.8 | 594.6 | 484.5 | 424.3 | 404.6 | 390.1 | 375.1 | 359.3 | 357.2 |
| 40° | 1063.0 | 993.8 | 789.6 | 547.5 | 434.4 | 397.1 | 380.5 | 361.6 | 342.9 | 325.3 | 323.0 |
| 42.5° | 1137.9 | 1060.7 | 775.8 | 493.0 | 393.5 | 373.5 | 356.7 | 332.8 | 311.8 | 299.9 | 298.6 |
| 45° | 1204.8 | 1114.6 | 744.7 | 435.7 | 363.2 | 353.8 | 332.3 | 306.6 | 295.5 | 286.9 | 285.1 |
| 47.5° | 1257.4 | 1150.4 | 702.7 | 384.4 | 338.5 | 333.6 | 305.6 | 292.4 | 283.8 | 276.1 | 274.2 |
| 50° | 1283.4 | 1158.4 | 648.0 | 342.7 | 315.7 | 309.8 | 290.6 | 280.5 | 274.8 | 268.5 | 267.0 |
| 52.5° | 1315.5 | 1167.5 | 600.9 | 307.7 | 293.4 | 285.4 | 278.1 | 270.1 | 266.0 | 262.1 | 260.8 |
| 55° | 1389.4 | 1201.7 | 576.0 | 279.7 | 272.2 | 268.5 | 267.5 | 260.8 | 259.5 | 256.9 | 254.5 |
| 57.5° | 1419.4 | 1179.7 | 517.1 | 256.9 | 255.3 | 255.8 | 258.4 | 252.2 | 250.9 | 247.8 | 246.3 |
| 60° | 1141.6 | 891.7 | 350.2 | 237.2 | 241.3 | 244.7 | 247.3 | 241.1 | 239.3 | 238.7 | 236.7 |
| 62.5° | 731.5 | 548.5 | 244.4 | 218.8 | 225.0 | 229.1 | 230.7 | 224.7 | 223.4 | 227.6 | 227.8 |
| 65° | 380.8 | 298.9 | 198.3 | 199.1 | 204.3 | 210.5 | 213.6 | 211.5 | 211.0 | 215.4 | 215.7 |
| 67.5° | 194.4 | 182.7 | 172.9 | 175.7 | 179.9 | 187.9 | 195.2 | 204.3 | 207.4 | 207.9 | 208.1 |
| 70° | 165.6 | 160.5 | 155.5 | 157.3 | 161.7 | 166.2 | 173.2 | 177.6 | 172.4 | 171.1 | 170.6 |
| 72.5° | 141.0 | 137.1 | 134.8 | 136.9 | 139.2 | 138.4 | 136.3 | 138.4 | 139.2 | 139.5 | 139.7 |
| 75° | 109.6 | 106.8 | 105.0 | 105.2 | 105.2 | 102.4 | 98.5 | 96.2 | 93.6 | 91.5 | 91.5 |
| 77.5° | 67.1 | 67.7 | 69.5 | 69.2 | 69.0 | 67.9 | 64.0 | 62.0 | 55.7 | 53.9 | 53.9 |
| 80° | 38.4 | 39.1 | 41.0 | 41.5 | 41.5 | 40.2 | 36.3 | 34.0 | 31.1 | 29.8 | 29.6 |
| 82.5° | 23.3 | 24.4 | 25.4 | 25.9 | 26.2 | 24.6 | 21.3 | 19.4 | 17.9 | 16.6 | 16.6 |
| 85° | 12.2 | 12.7 | 13.7 | 14.0 | 13.2 | 11.7 | 9.9 | 9.1 | 7.5 | 7.3 | 7.3 |
| 87.5° | 3.4 | 3.6 | 4.1 | 3.4 | 3.1 | 2.3 | 1.3 | 1.0 | 0.5 | 0.3 | 0.3 |
| 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
 CIE u': 0.2052
 CIE v': 0.4804
 Duv: 0.0025
 CIE x: 0.3330
 CIE y: 0.3466
 CIE z: 0.3204
 Peak Wavelength (nm): 442
 Dominant Wavelength (nm): 554
 Purity: 4.1

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 70.6 | R9: | -27.1 |
| R2: | 74.6 | R10: | 40.8 |
| R3: | 78.3 | R11: | 74.6 |
| R4: | 73.8 | R12: | 50.4 |
| R5: | 72.4 | R13: | 70.0 |
| R6: | 67.5 | R14: | 87.8 |
| R7: | 77.5 | | |
| R8: | 58.9 | | |

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 (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

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)