

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: P629755

Luminaire Tested: GWS-SA1C-730-U-T3-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P629755
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-26)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1C-730-U-T3-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS WITH HOUSE SIDE SHIELD
Light Source: (16) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3213.3 lumens
Efficiency: N/A
Efficacy: 94.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B0 - U0 - G1

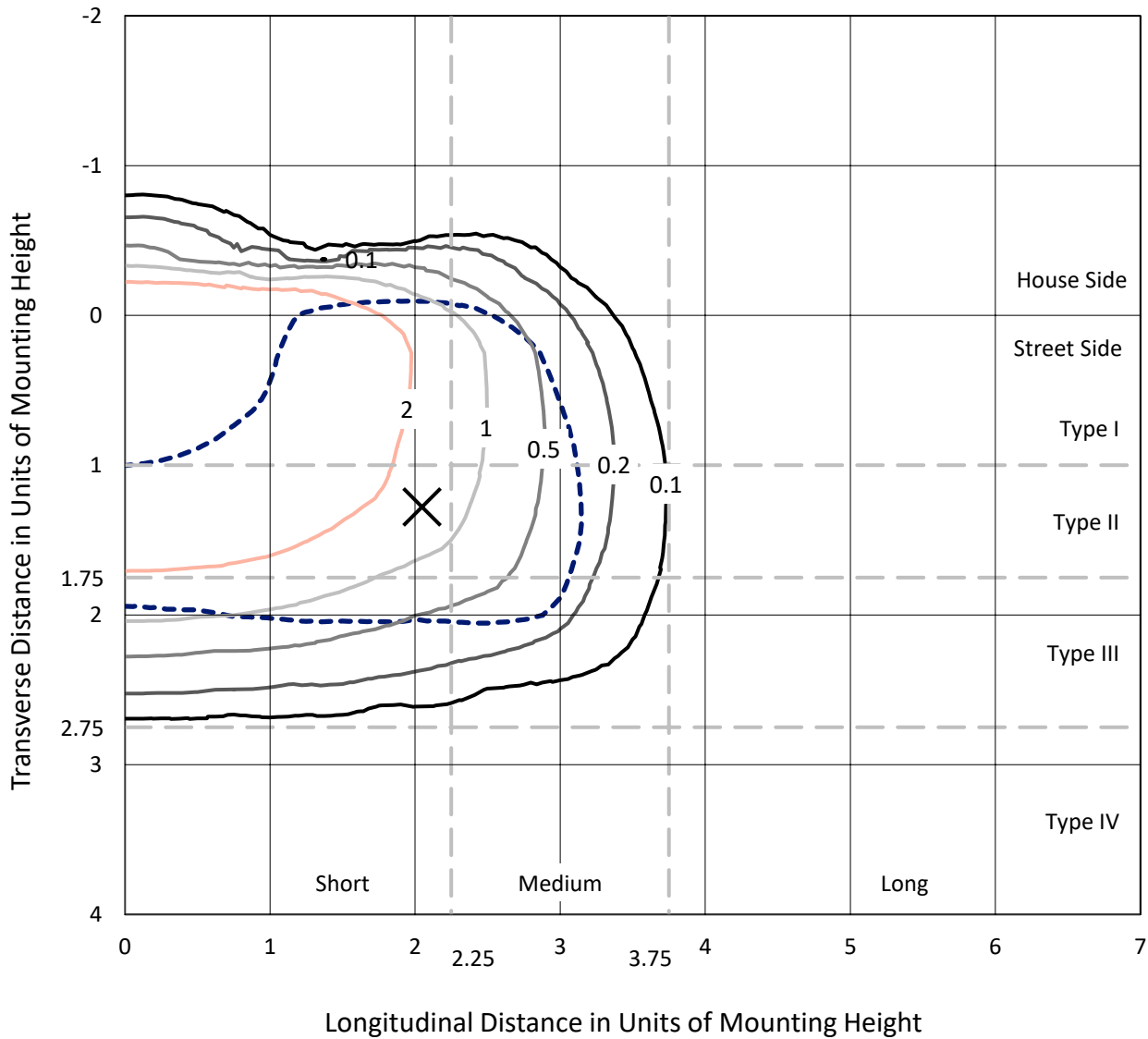
Input Watts (W): 34.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P629755
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Iso-Footcandle Lines of Horizontal Illumination

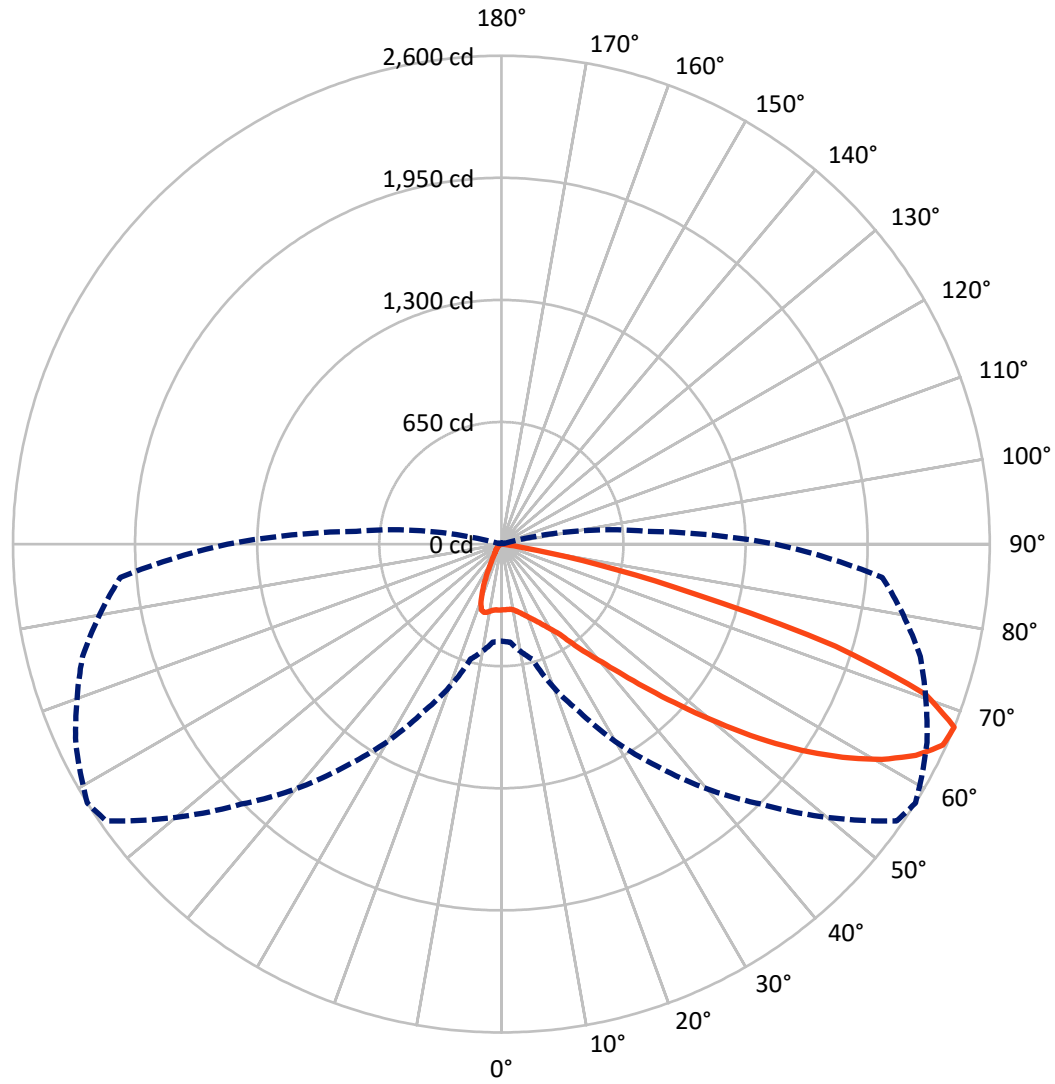
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.9 fc
 Type III - Short - N/A

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CATALOG NUMBER: GWS-SA1C-730-U-T3-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 | 350.6 | 0.0 | 350.6 |
| | % Fixture | 10.9 | 0.0 | 10.9 |
| Street Side | Lumens | 2862.7 | 0.0 | 2862.7 |
| | % Fixture | 89.1 | 0.0 | 89.1 |
| Total | Lumens | 3213.3 | 0.0 | 3213.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 32.9 | 1.0 |
| 10°-20° | 92.4 | 2.9 |
| 20°-30° | 161.2 | 5.0 |
| 30°-40° | 287.9 | 9.0 |
| 40°-50° | 526.2 | 16.4 |
| 50°-60° | 875.1 | 27.2 |
| 60°-70° | 950.6 | 29.6 |
| 70°-80° | 279.1 | 8.7 |
| 80°-90° | 7.9 | 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° | 3213.3 | 100.0 |
| 0°-180° | 3213.3 | 100.0 |

Coefficient of Utilization



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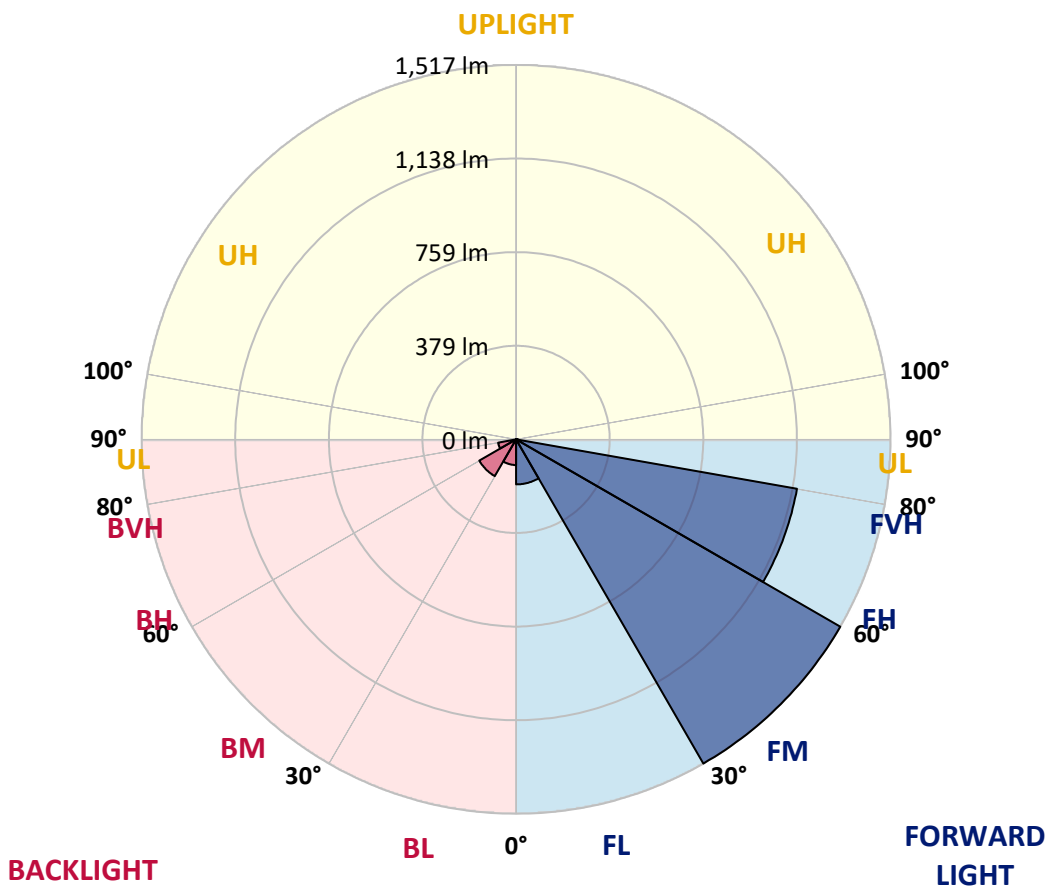
CATALOG NUMBER: GWS-SA1C-730-U-T3-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 182.5 | 5.7 | | | |
| FM (30°-60°) | 1517.1 | 47.2 | | | |
| FH (60°-80°) | 1155.6 | 36.0 | | | G1/1800 |
| FVH (80°-90°) | 7.6 | 0.2 | | | G0/10 |
| BL (0°-30°) | 104.0 | 3.2 | B0/110 | | |
| BM (30°-60°) | 172.2 | 5.4 | B0/220 | | |
| BH (60°-80°) | 74.0 | 2.3 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.4 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B0-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 |
| 2.5° | 343.6 | 342.9 | 342.9 | 345.4 | 345.8 | 347.0 | 349.8 | 350.2 | 351.7 | 351.1 | 348.9 |
| 5° | 325.7 | 326.0 | 327.9 | 332.3 | 336.0 | 340.7 | 347.6 | 349.2 | 352.7 | 354.5 | 353.3 |
| 7.5° | 309.1 | 309.4 | 312.2 | 319.1 | 326.3 | 335.7 | 347.0 | 350.2 | 357.1 | 362.1 | 362.4 |
| 10° | 302.8 | 302.5 | 305.3 | 313.1 | 322.5 | 335.7 | 352.0 | 356.1 | 366.5 | 375.3 | 376.8 |
| 12.5° | 304.7 | 304.3 | 307.2 | 314.4 | 324.7 | 341.4 | 360.8 | 366.5 | 379.6 | 393.1 | 396.0 |
| 15° | 312.2 | 311.9 | 313.8 | 319.7 | 331.0 | 348.3 | 372.1 | 380.6 | 397.2 | 413.5 | 417.9 |
| 17.5° | 334.8 | 333.2 | 331.3 | 332.0 | 338.5 | 356.4 | 386.5 | 396.9 | 417.6 | 437.1 | 440.8 |
| 20° | 374.9 | 370.9 | 365.8 | 359.3 | 356.1 | 368.4 | 403.2 | 415.1 | 440.2 | 462.5 | 463.1 |
| 22.5° | 435.5 | 433.9 | 422.3 | 403.2 | 389.7 | 390.0 | 422.6 | 436.4 | 467.2 | 491.7 | 488.2 |
| 25° | 519.9 | 519.0 | 501.1 | 469.7 | 434.6 | 422.6 | 447.4 | 461.5 | 499.2 | 525.2 | 514.2 |
| 27.5° | 624.7 | 618.1 | 597.1 | 554.7 | 502.3 | 465.0 | 478.8 | 491.3 | 533.1 | 557.5 | 536.8 |
| 30° | 716.0 | 716.3 | 696.5 | 652.3 | 593.3 | 528.7 | 517.1 | 528.1 | 564.1 | 589.9 | 564.8 |
| 32.5° | 803.8 | 806.7 | 785.0 | 745.2 | 680.5 | 611.8 | 572.0 | 573.9 | 604.0 | 631.9 | 601.5 |
| 35° | 885.4 | 887.6 | 872.6 | 838.7 | 778.4 | 698.7 | 648.5 | 647.6 | 663.9 | 692.5 | 652.6 |
| 37.5° | 976.7 | 978.9 | 964.2 | 933.7 | 877.3 | 798.2 | 735.4 | 734.2 | 740.8 | 764.0 | 718.5 |
| 40° | 1074.0 | 1078.1 | 1061.8 | 1036.0 | 982.1 | 915.2 | 836.5 | 825.2 | 818.6 | 845.9 | 803.8 |
| 42.5° | 1172.5 | 1178.8 | 1173.1 | 1147.4 | 1101.3 | 1046.1 | 967.6 | 950.1 | 935.9 | 970.1 | 925.6 |
| 45° | 1294.9 | 1302.4 | 1299.9 | 1280.1 | 1244.4 | 1199.5 | 1125.4 | 1105.1 | 1098.5 | 1130.2 | 1077.1 |
| 47.5° | 1412.5 | 1420.7 | 1429.8 | 1425.4 | 1400.0 | 1379.3 | 1297.1 | 1285.5 | 1283.6 | 1317.5 | 1235.3 |
| 50° | 1500.1 | 1507.6 | 1542.4 | 1567.5 | 1584.8 | 1580.4 | 1509.2 | 1491.9 | 1489.1 | 1510.7 | 1402.2 |
| 52.5° | 1562.8 | 1570.0 | 1618.0 | 1696.5 | 1759.9 | 1794.4 | 1722.5 | 1718.8 | 1703.4 | 1695.9 | 1558.4 |
| 55° | 1611.5 | 1621.5 | 1672.0 | 1790.6 | 1918.3 | 1994.9 | 1950.0 | 1936.5 | 1897.0 | 1853.7 | 1703.4 |
| 57.5° | 1621.2 | 1625.3 | 1696.5 | 1856.5 | 2041.3 | 2165.2 | 2165.2 | 2141.7 | 2065.5 | 2005.5 | 1870.9 |
| 60° | 1534.0 | 1546.5 | 1642.8 | 1851.2 | 2094.0 | 2276.6 | 2343.8 | 2327.5 | 2224.5 | 2150.8 | 2032.2 |
| 62.5° | 1340.4 | 1354.5 | 1471.8 | 1723.5 | 2041.3 | 2299.5 | 2479.0 | 2476.5 | 2360.4 | 2271.0 | 2165.9 |
| 65° | 1027.9 | 1038.2 | 1140.5 | 1441.7 | 1818.5 | 2211.4 | 2575.6 | 2582.5 | 2467.7 | 2350.4 | 2212.0 |
| 67.5° | 516.4 | 523.7 | 634.1 | 984.9 | 1441.4 | 1957.5 | 2569.0 | 2599.8 | 2500.3 | 2308.3 | 2036.0 |
| 70° | 180.4 | 187.6 | 239.7 | 422.6 | 877.3 | 1494.7 | 2346.9 | 2397.1 | 2308.6 | 1970.4 | 1502.0 |
| 72.5° | 61.8 | 65.3 | 99.5 | 156.9 | 341.4 | 886.1 | 1784.7 | 1860.3 | 1701.8 | 1322.8 | 863.1 |
| 75° | 35.1 | 37.3 | 53.3 | 85.0 | 143.1 | 291.5 | 1012.5 | 1058.9 | 992.1 | 721.0 | 355.2 |
| 77.5° | 23.8 | 25.7 | 33.3 | 48.3 | 79.1 | 93.8 | 412.9 | 519.9 | 453.4 | 235.3 | 90.7 |
| 80° | 14.1 | 15.4 | 20.4 | 28.6 | 40.5 | 36.4 | 88.5 | 117.7 | 151.5 | 70.3 | 27.3 |
| 82.5° | 6.6 | 7.5 | 13.2 | 18.8 | 20.4 | 15.4 | 26.0 | 31.7 | 42.7 | 34.5 | 11.3 |
| 85° | 0.0 | 0.0 | 4.4 | 7.8 | 7.5 | 4.4 | 7.2 | 7.8 | 11.6 | 17.3 | 4.4 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 0.9 | 1.9 | 3.5 | 1.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CATALOG NUMBER: GWS-SA1C-730-U-T3-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 | 350.2 |
| 2.5° | 351.4 | 349.2 | 351.7 | 350.5 | 351.7 | 351.4 | 348.9 | 347.3 | 347.3 | 344.5 | 343.6 |
| 5° | 355.8 | 353.6 | 354.2 | 351.4 | 350.8 | 349.2 | 346.1 | 344.8 | 344.8 | 342.0 | 341.1 |
| 7.5° | 365.5 | 362.1 | 361.4 | 355.8 | 353.3 | 348.9 | 343.3 | 341.1 | 340.7 | 337.9 | 337.0 |
| 10° | 380.9 | 376.8 | 374.0 | 366.8 | 359.6 | 350.8 | 338.9 | 328.8 | 323.2 | 315.6 | 315.0 |
| 12.5° | 399.7 | 394.7 | 390.3 | 379.3 | 367.4 | 347.6 | 312.5 | 275.8 | 253.2 | 235.3 | 236.6 |
| 15° | 420.7 | 416.0 | 409.1 | 392.5 | 368.0 | 316.6 | 243.2 | 186.7 | 159.1 | 144.3 | 143.7 |
| 17.5° | 443.7 | 436.8 | 425.5 | 402.9 | 348.3 | 241.9 | 158.1 | 111.7 | 97.3 | 92.2 | 91.0 |
| 20° | 465.0 | 456.5 | 442.4 | 405.1 | 291.2 | 163.8 | 98.8 | 86.6 | 84.1 | 82.5 | 82.5 |
| 22.5° | 487.6 | 476.9 | 455.9 | 388.1 | 216.5 | 104.8 | 84.1 | 81.3 | 79.4 | 77.2 | 76.9 |
| 25° | 510.5 | 496.7 | 468.1 | 343.9 | 141.8 | 82.5 | 78.8 | 75.6 | 72.2 | 68.7 | 67.8 |
| 27.5° | 529.9 | 512.1 | 477.5 | 278.0 | 91.0 | 74.4 | 71.9 | 66.5 | 61.8 | 58.0 | 57.4 |
| 30° | 553.2 | 530.3 | 481.6 | 203.3 | 71.5 | 65.6 | 61.8 | 56.2 | 50.5 | 46.7 | 45.5 |
| 32.5° | 584.2 | 559.1 | 475.3 | 132.4 | 63.4 | 57.7 | 51.8 | 45.2 | 39.5 | 35.5 | 34.8 |
| 35° | 632.5 | 602.7 | 446.5 | 84.4 | 57.4 | 49.9 | 42.7 | 35.8 | 31.1 | 27.9 | 27.3 |
| 37.5° | 691.5 | 663.9 | 399.1 | 63.4 | 51.5 | 43.3 | 34.8 | 28.2 | 24.8 | 22.6 | 22.0 |
| 40° | 779.1 | 740.5 | 340.4 | 55.5 | 45.5 | 36.7 | 28.6 | 23.2 | 20.7 | 18.8 | 18.2 |
| 42.5° | 892.6 | 830.8 | 273.0 | 50.5 | 39.8 | 30.7 | 23.2 | 19.1 | 16.9 | 15.7 | 15.4 |
| 45° | 1025.4 | 919.0 | 201.7 | 45.5 | 34.5 | 25.4 | 19.1 | 15.7 | 14.1 | 13.2 | 12.9 |
| 47.5° | 1161.2 | 996.2 | 139.3 | 40.2 | 29.5 | 21.0 | 16.0 | 13.5 | 12.2 | 11.0 | 10.7 |
| 50° | 1306.2 | 1061.4 | 95.1 | 34.8 | 25.1 | 17.3 | 13.8 | 12.2 | 10.7 | 9.7 | 9.4 |
| 52.5° | 1412.5 | 1085.6 | 66.2 | 30.1 | 21.3 | 14.7 | 12.2 | 11.0 | 9.7 | 8.5 | 8.2 |
| 55° | 1510.7 | 1085.0 | 50.2 | 25.4 | 18.2 | 12.9 | 11.0 | 9.7 | 8.5 | 7.5 | 7.2 |
| 57.5° | 1608.6 | 1076.5 | 39.5 | 21.6 | 15.7 | 11.6 | 9.7 | 8.5 | 7.8 | 6.6 | 6.3 |
| 60° | 1672.0 | 1044.5 | 30.7 | 18.2 | 13.5 | 10.0 | 8.5 | 7.5 | 6.6 | 5.6 | 5.3 |
| 62.5° | 1705.6 | 999.9 | 23.5 | 14.4 | 11.0 | 8.8 | 7.5 | 6.6 | 5.6 | 4.7 | 4.4 |
| 65° | 1660.1 | 920.9 | 18.5 | 11.3 | 8.5 | 7.5 | 6.3 | 5.3 | 4.4 | 3.5 | 3.1 |
| 67.5° | 1458.3 | 776.6 | 14.4 | 9.1 | 6.6 | 5.6 | 5.3 | 4.4 | 3.1 | 2.5 | 2.2 |
| 70° | 1030.7 | 531.8 | 11.3 | 6.9 | 5.0 | 4.4 | 4.1 | 3.5 | 2.5 | 1.9 | 1.6 |
| 72.5° | 565.7 | 268.3 | 8.2 | 5.0 | 3.8 | 3.5 | 3.1 | 2.8 | 2.2 | 1.6 | 1.6 |
| 75° | 217.7 | 73.7 | 6.0 | 3.5 | 2.5 | 2.5 | 2.2 | 2.2 | 1.9 | 1.3 | 1.3 |
| 77.5° | 56.8 | 22.0 | 3.8 | 2.2 | 1.6 | 1.6 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 |
| 80° | 18.2 | 7.2 | 2.2 | 1.6 | 1.3 | 0.9 | 0.9 | 0.6 | 0.9 | 0.6 | 0.6 |
| 82.5° | 6.0 | 2.5 | 1.3 | 1.3 | 0.9 | 0.6 | 0.6 | 0.3 | 0.3 | 0.0 | 0.0 |
| 85° | 2.2 | 1.3 | 0.9 | 0.6 | 0.6 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.3 | 0.6 | 0.6 | 0.6 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

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

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

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

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 2993 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| Rf: | 75.7 | | | | |
| Rg: | 93.9 | | | | |



Test Conditions

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

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| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength



#####

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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Summary

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



Color Vector Graphics



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

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



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)