

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: P628766

Luminaire Tested: GWS-SA1A-730-U-T3-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P628766
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-23)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1A-730-U-T3-W
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: (16) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2591.3 lumens
Efficiency: N/A
Efficacy: 131.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G1

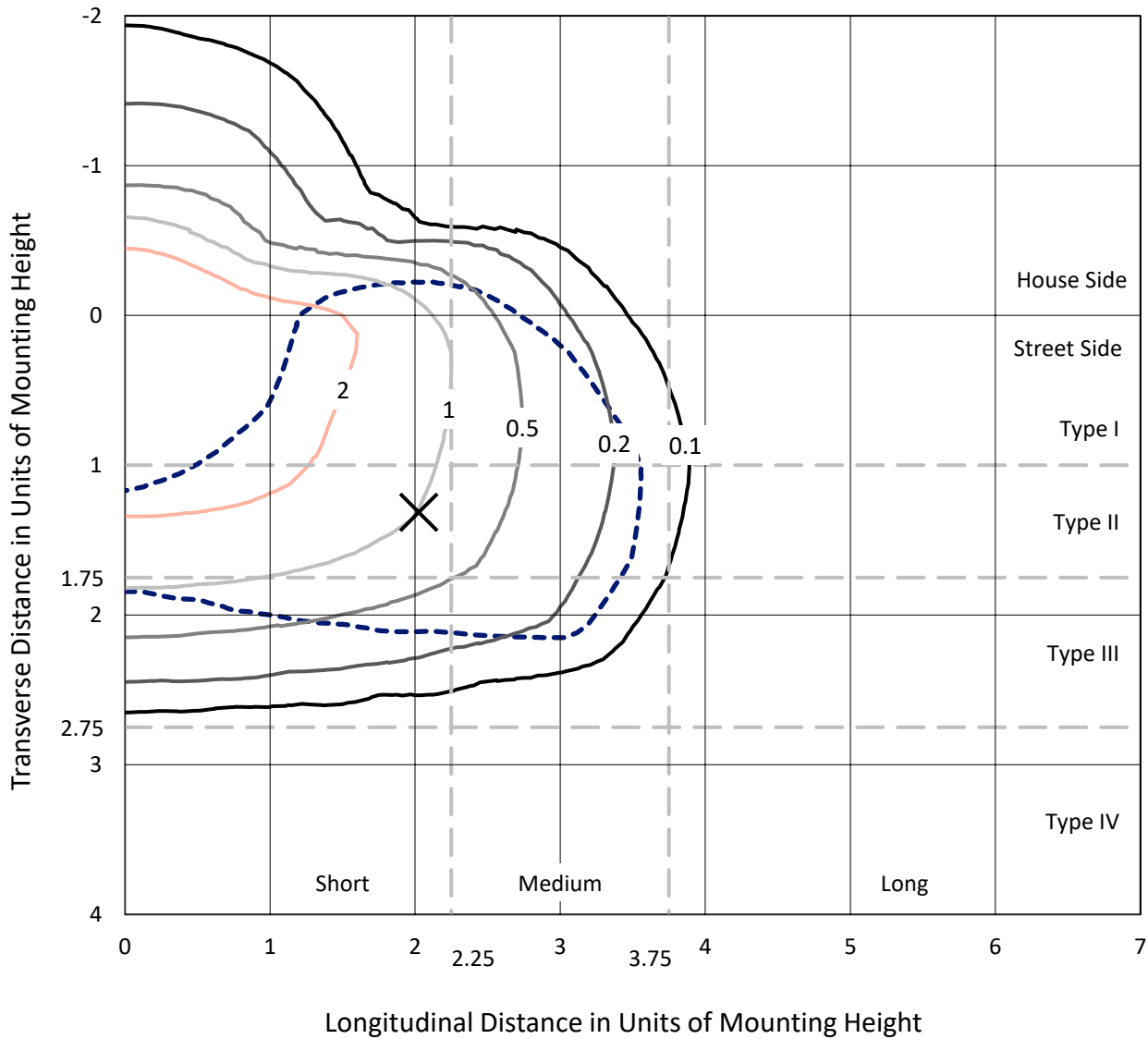
Input Watts (W): 19.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P628766
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Iso-Footcandle Lines of Horizontal Illumination

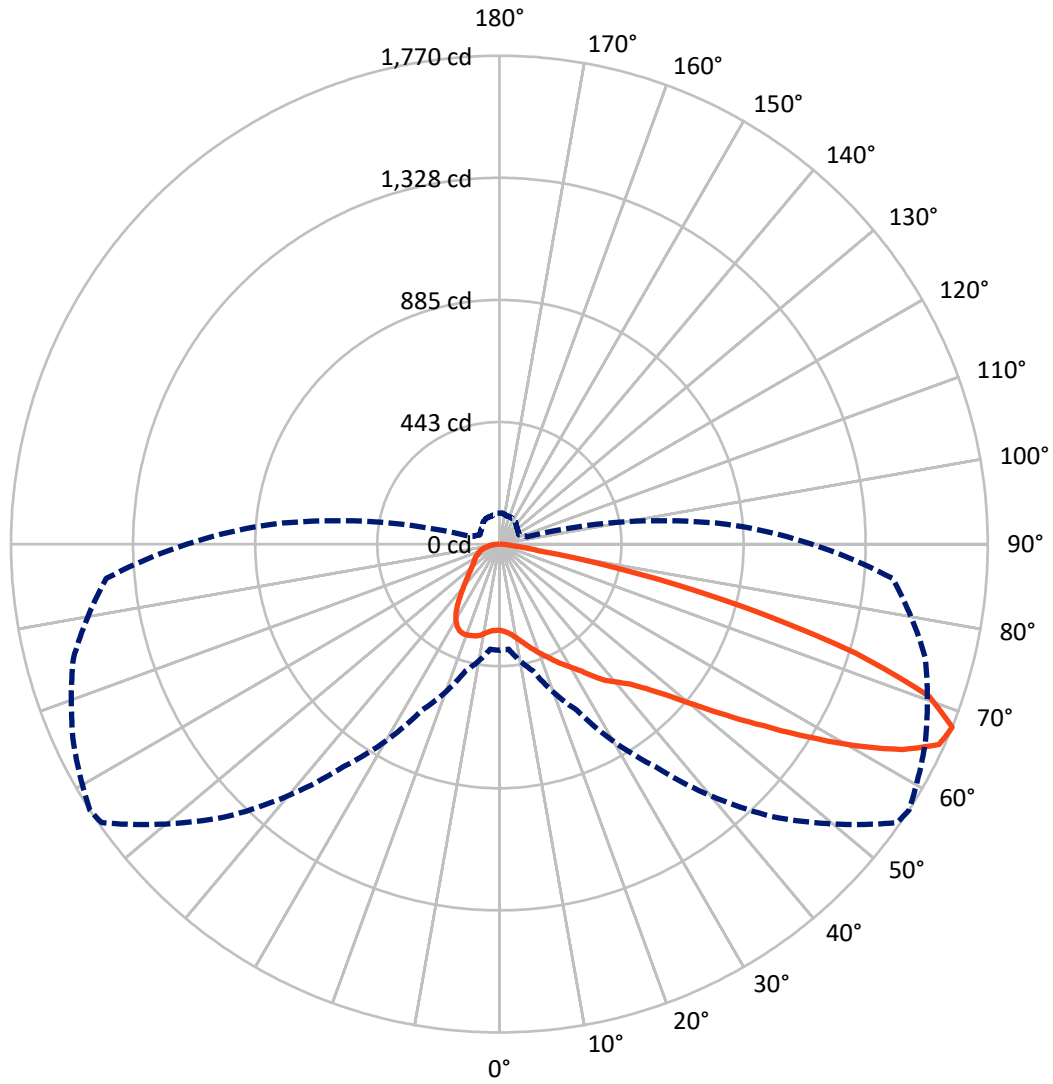
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.7 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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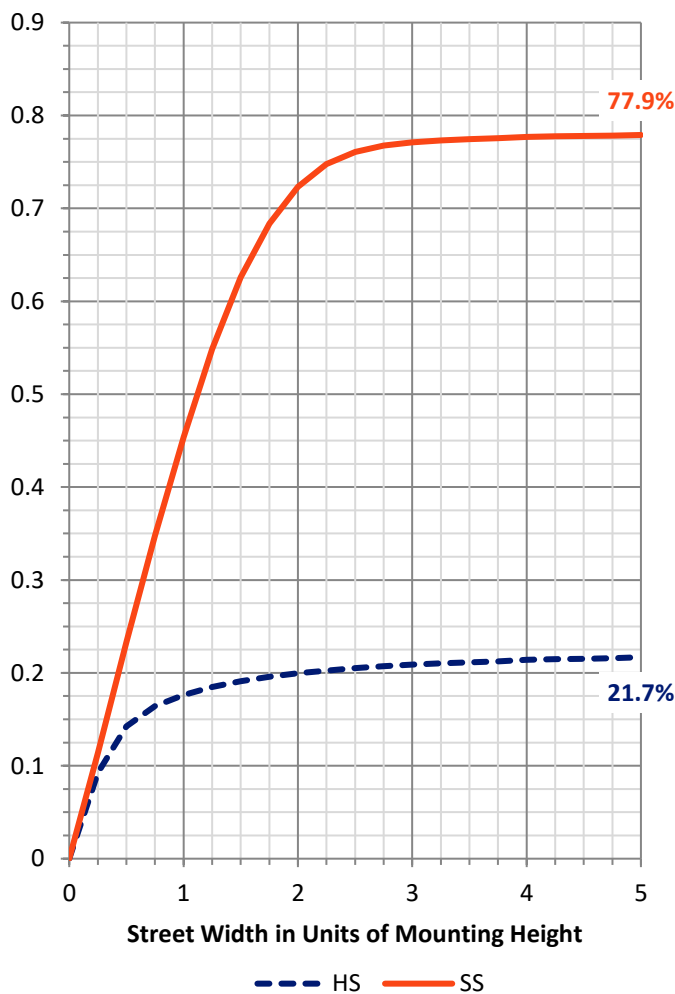
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 569.7 | 0.0 | 569.7 |
| | % Fixture | 22.0 | 0.0 | 22.0 |
| Street Side | Lumens | 2021.6 | 0.0 | 2021.6 |
| | % Fixture | 78.0 | 0.0 | 78.0 |
| Total | Lumens | 2591.3 | 0.0 | 2591.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 31.0 | 1.2 |
| 10°-20° | 102.5 | 4.0 |
| 20°-30° | 182.8 | 7.1 |
| 30°-40° | 265.7 | 10.3 |
| 40°-50° | 384.6 | 14.8 |
| 50°-60° | 601.9 | 23.2 |
| 60°-70° | 702.1 | 27.1 |
| 70°-80° | 293.1 | 11.3 |
| 80°-90° | 27.7 | 1.1 |
| 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° | 2591.3 | 100.0 |
| 0°-180° | 2591.3 | 100.0 |

Coefficient of Utilization



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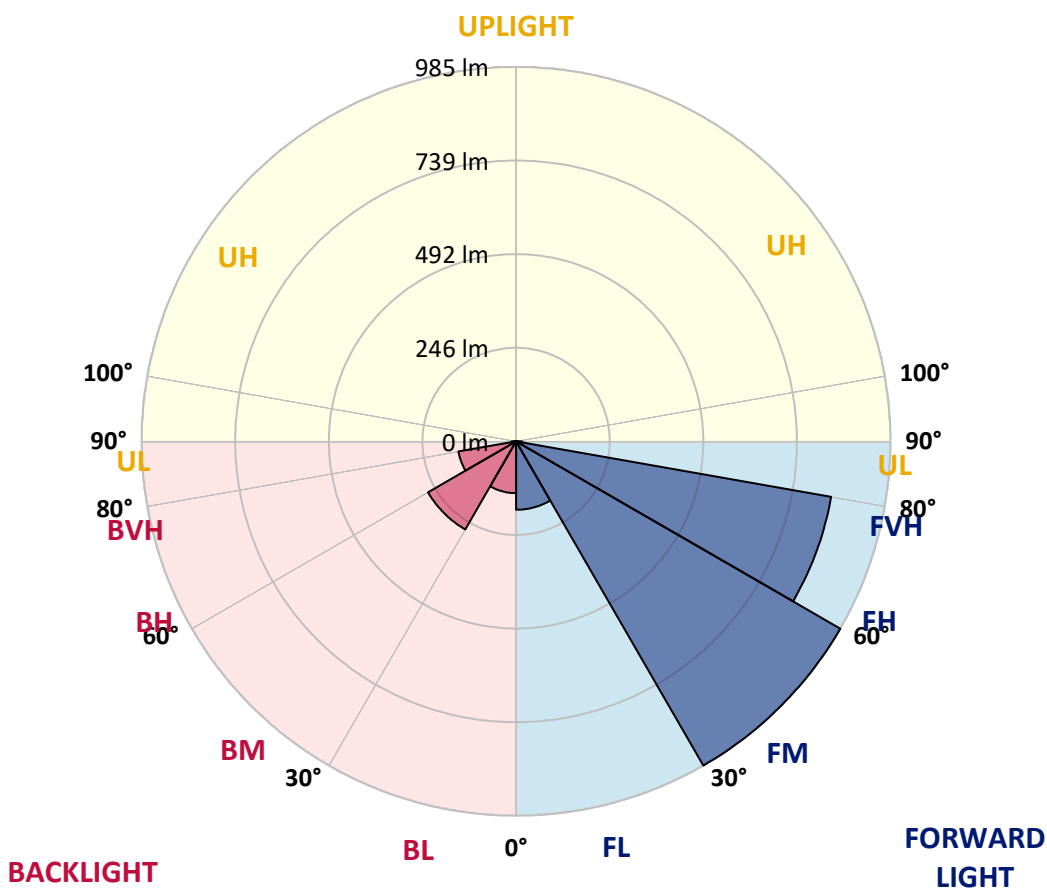
CATALOG NUMBER: GWS-SA1A-730-U-T3-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 180.0 | 6.9 | | | |
| FM (30°-60°) | 984.7 | 38.0 | | | |
| FH (60°-80°) | 841.4 | 32.5 | | | G1/1800 |
| FVH (80°-90°) | 15.4 | 0.6 | | | G1/100 |
| BL (0°-30°) | 136.3 | 5.3 | B1/500 | | |
| BM (30°-60°) | 267.4 | 10.3 | B1/1000 | | |
| BH (60°-80°) | 153.8 | 5.9 | B1/500 | | G1/500 |
| BVH (80°-90°) | 12.2 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 |
| 2.5° | 316.7 | 316.3 | 316.1 | 317.2 | 316.9 | 316.7 | 316.7 | 316.5 | 316.1 | 314.6 | 312.6 |
| 5° | 325.4 | 324.7 | 323.9 | 324.9 | 324.1 | 323.4 | 323.2 | 322.8 | 321.5 | 319.3 | 316.1 |
| 7.5° | 334.5 | 333.8 | 334.0 | 334.5 | 334.0 | 333.6 | 333.0 | 332.7 | 330.6 | 327.1 | 322.8 |
| 10° | 347.3 | 347.3 | 347.7 | 348.2 | 348.4 | 347.9 | 346.8 | 346.2 | 343.8 | 339.3 | 333.4 |
| 12.5° | 365.9 | 365.5 | 365.5 | 365.1 | 365.7 | 365.1 | 364.0 | 363.1 | 360.1 | 354.4 | 345.8 |
| 15° | 390.4 | 388.9 | 387.6 | 385.2 | 384.4 | 382.4 | 382.8 | 382.2 | 379.4 | 371.6 | 360.9 |
| 17.5° | 416.6 | 416.4 | 414.3 | 409.5 | 404.7 | 401.3 | 402.1 | 401.9 | 400.4 | 389.8 | 376.1 |
| 20° | 439.6 | 440.5 | 438.6 | 434.9 | 428.4 | 422.1 | 421.8 | 422.7 | 420.8 | 410.2 | 391.1 |
| 22.5° | 465.4 | 464.6 | 462.8 | 458.0 | 453.1 | 446.4 | 444.2 | 443.5 | 442.7 | 430.7 | 406.5 |
| 25° | 489.9 | 492.1 | 489.7 | 485.2 | 477.8 | 470.6 | 468.7 | 469.5 | 467.4 | 451.5 | 423.1 |
| 27.5° | 520.9 | 521.8 | 520.3 | 514.2 | 507.9 | 497.7 | 494.2 | 494.2 | 493.4 | 470.9 | 436.1 |
| 30° | 553.9 | 556.5 | 553.9 | 548.9 | 542.4 | 527.8 | 520.1 | 519.4 | 517.2 | 491.0 | 451.3 |
| 32.5° | 587.2 | 589.0 | 587.2 | 582.3 | 574.9 | 562.1 | 551.1 | 549.5 | 546.5 | 512.9 | 466.9 |
| 35° | 616.7 | 618.3 | 618.0 | 619.1 | 613.0 | 596.8 | 590.1 | 589.4 | 581.6 | 541.5 | 488.0 |
| 37.5° | 649.0 | 651.0 | 648.2 | 650.5 | 648.0 | 632.8 | 630.8 | 627.1 | 615.9 | 568.4 | 510.3 |
| 40° | 685.7 | 687.6 | 683.1 | 684.1 | 681.3 | 672.7 | 662.3 | 657.3 | 640.8 | 597.6 | 545.4 |
| 42.5° | 725.1 | 729.4 | 731.4 | 729.7 | 723.2 | 718.4 | 700.2 | 693.9 | 680.2 | 650.1 | 603.1 |
| 45° | 782.1 | 788.4 | 791.4 | 787.1 | 784.3 | 777.4 | 755.2 | 747.5 | 740.3 | 724.2 | 683.7 |
| 47.5° | 843.5 | 849.3 | 858.7 | 860.6 | 862.8 | 857.6 | 826.3 | 818.8 | 820.1 | 818.3 | 782.8 |
| 50° | 892.5 | 897.3 | 918.7 | 941.5 | 960.5 | 961.9 | 921.9 | 913.9 | 920.9 | 926.9 | 902.2 |
| 52.5° | 928.2 | 932.4 | 960.6 | 1007.8 | 1050.7 | 1082.4 | 1039.2 | 1030.1 | 1035.8 | 1049.2 | 1037.9 |
| 55° | 957.1 | 963.1 | 992.6 | 1065.0 | 1151.7 | 1201.8 | 1174.1 | 1162.6 | 1160.2 | 1176.7 | 1183.2 |
| 57.5° | 972.3 | 974.2 | 1015.6 | 1109.7 | 1225.7 | 1318.9 | 1331.0 | 1318.0 | 1295.0 | 1304.1 | 1337.9 |
| 60° | 937.6 | 940.8 | 997.4 | 1121.2 | 1284.2 | 1435.1 | 1495.6 | 1484.9 | 1435.9 | 1440.9 | 1478.2 |
| 62.5° | 841.7 | 846.1 | 914.2 | 1066.5 | 1289.0 | 1512.7 | 1647.7 | 1640.8 | 1575.1 | 1548.0 | 1559.1 |
| 65° | 675.1 | 676.6 | 747.2 | 930.9 | 1193.1 | 1522.4 | 1753.7 | 1752.0 | 1672.4 | 1608.9 | 1561.2 |
| 67.5° | 385.0 | 382.4 | 476.7 | 664.0 | 984.6 | 1396.9 | 1760.5 | 1770.4 | 1703.9 | 1598.9 | 1431.2 |
| 70° | 166.9 | 167.3 | 210.7 | 327.6 | 637.3 | 1129.0 | 1635.2 | 1652.1 | 1612.6 | 1432.0 | 1138.7 |
| 72.5° | 77.2 | 78.3 | 97.1 | 141.8 | 272.1 | 700.4 | 1333.4 | 1348.6 | 1314.6 | 1146.1 | 828.5 |
| 75° | 54.6 | 55.5 | 64.8 | 81.3 | 125.1 | 272.9 | 892.0 | 923.9 | 940.4 | 857.3 | 545.9 |
| 77.5° | 41.4 | 42.7 | 47.3 | 56.4 | 77.2 | 96.7 | 426.8 | 502.9 | 599.0 | 533.3 | 281.2 |
| 80° | 26.4 | 26.4 | 31.4 | 37.7 | 47.2 | 50.3 | 123.3 | 146.1 | 293.1 | 219.8 | 110.5 |
| 82.5° | 17.8 | 18.4 | 21.3 | 23.9 | 27.1 | 28.6 | 52.9 | 56.4 | 84.6 | 74.8 | 45.5 |
| 85° | 9.5 | 9.8 | 11.1 | 11.0 | 13.0 | 11.3 | 22.3 | 22.1 | 31.0 | 34.0 | 17.3 |
| 87.5° | 0.0 | 0.0 | 0.2 | 0.2 | 0.4 | 0.6 | 2.4 | 2.6 | 6.5 | 10.4 | 5.8 |
| 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: P628766
 CATALOG NUMBER: GWS-SA1A-730-U-T3-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 | 312.2 |
| 2.5° | 313.7 | 311.5 | 312.6 | 312.2 | 313.3 | 313.3 | 311.3 | 310.7 | 310.9 | 308.7 | 308.0 |
| 5° | 316.5 | 313.9 | 314.5 | 313.7 | 314.8 | 315.8 | 314.8 | 314.8 | 315.9 | 314.3 | 313.3 |
| 7.5° | 322.8 | 319.8 | 319.8 | 318.9 | 320.2 | 321.0 | 320.2 | 321.3 | 323.4 | 321.7 | 320.8 |
| 10° | 332.8 | 329.3 | 329.5 | 328.4 | 328.9 | 328.6 | 325.6 | 324.7 | 325.2 | 323.7 | 323.0 |
| 12.5° | 345.8 | 341.0 | 341.0 | 338.8 | 337.5 | 333.6 | 327.5 | 325.2 | 325.6 | 324.3 | 323.7 |
| 15° | 358.3 | 353.8 | 352.9 | 348.4 | 342.5 | 335.3 | 329.7 | 328.2 | 328.6 | 327.3 | 326.3 |
| 17.5° | 372.9 | 367.2 | 363.8 | 355.7 | 344.7 | 337.3 | 331.7 | 328.2 | 325.2 | 322.3 | 321.5 |
| 20° | 386.5 | 379.2 | 373.1 | 360.5 | 347.1 | 336.9 | 326.5 | 317.8 | 310.6 | 306.7 | 305.7 |
| 22.5° | 400.4 | 391.1 | 380.4 | 363.8 | 346.9 | 330.2 | 311.1 | 297.9 | 287.2 | 281.4 | 282.5 |
| 25° | 413.6 | 401.9 | 387.2 | 367.0 | 341.0 | 315.4 | 289.4 | 269.7 | 257.5 | 253.0 | 251.7 |
| 27.5° | 424.5 | 410.1 | 393.5 | 365.5 | 328.8 | 294.0 | 259.7 | 237.8 | 225.9 | 220.9 | 219.6 |
| 30° | 436.8 | 420.5 | 402.6 | 358.6 | 309.4 | 264.2 | 226.1 | 208.3 | 199.7 | 194.9 | 195.1 |
| 32.5° | 450.9 | 433.8 | 415.4 | 345.5 | 284.8 | 231.9 | 198.4 | 186.2 | 179.3 | 174.5 | 173.8 |
| 35° | 469.8 | 452.9 | 424.0 | 325.6 | 253.4 | 202.2 | 179.5 | 169.5 | 160.9 | 154.6 | 153.3 |
| 37.5° | 493.2 | 481.7 | 424.9 | 299.1 | 219.8 | 181.7 | 166.0 | 155.2 | 144.8 | 136.4 | 135.5 |
| 40° | 533.3 | 520.1 | 417.3 | 265.8 | 191.2 | 168.6 | 154.6 | 142.2 | 130.1 | 120.8 | 119.5 |
| 42.5° | 590.5 | 563.4 | 401.0 | 228.3 | 169.7 | 158.2 | 143.9 | 128.1 | 115.8 | 109.3 | 108.4 |
| 45° | 663.3 | 611.7 | 376.5 | 193.1 | 153.7 | 147.9 | 132.5 | 116.0 | 109.5 | 104.9 | 104.0 |
| 47.5° | 752.4 | 667.9 | 348.2 | 165.6 | 141.3 | 138.7 | 121.0 | 111.9 | 106.2 | 102.3 | 101.4 |
| 50° | 858.9 | 739.6 | 325.0 | 144.1 | 130.1 | 127.9 | 117.3 | 109.5 | 104.9 | 101.7 | 101.0 |
| 52.5° | 980.5 | 819.2 | 313.7 | 128.6 | 120.5 | 118.2 | 116.0 | 109.0 | 105.1 | 102.7 | 101.7 |
| 55° | 1106.7 | 903.1 | 303.1 | 116.8 | 112.3 | 113.6 | 116.2 | 110.8 | 107.9 | 104.7 | 103.8 |
| 57.5° | 1228.7 | 981.8 | 277.1 | 107.5 | 106.4 | 111.4 | 117.1 | 112.7 | 109.2 | 106.0 | 104.9 |
| 60° | 1312.8 | 1024.9 | 233.2 | 100.1 | 101.9 | 108.6 | 114.7 | 109.9 | 105.4 | 104.1 | 103.6 |
| 62.5° | 1335.4 | 1019.7 | 181.0 | 92.4 | 96.5 | 102.5 | 108.4 | 105.3 | 100.6 | 102.7 | 102.8 |
| 65° | 1282.5 | 964.0 | 135.9 | 85.0 | 89.5 | 94.5 | 101.9 | 100.6 | 98.9 | 104.5 | 104.7 |
| 67.5° | 1132.7 | 827.2 | 103.6 | 78.5 | 82.2 | 88.4 | 99.9 | 105.3 | 105.6 | 112.7 | 111.9 |
| 70° | 857.1 | 618.0 | 81.1 | 72.4 | 76.7 | 88.4 | 106.4 | 108.8 | 104.3 | 110.8 | 109.3 |
| 72.5° | 592.5 | 407.8 | 69.1 | 67.0 | 69.8 | 84.3 | 106.2 | 106.2 | 101.4 | 101.4 | 98.6 |
| 75° | 368.1 | 239.8 | 60.1 | 60.1 | 60.1 | 73.7 | 103.2 | 97.8 | 89.3 | 85.4 | 83.2 |
| 77.5° | 181.7 | 116.6 | 50.5 | 52.3 | 50.3 | 61.6 | 84.3 | 80.0 | 74.8 | 70.7 | 69.2 |
| 80° | 77.6 | 58.3 | 40.8 | 42.9 | 40.5 | 46.4 | 66.8 | 65.9 | 60.9 | 55.5 | 53.8 |
| 82.5° | 35.6 | 30.1 | 32.7 | 33.6 | 29.5 | 34.9 | 48.8 | 48.8 | 46.0 | 38.6 | 35.8 |
| 85° | 15.2 | 16.0 | 22.6 | 22.6 | 18.6 | 19.7 | 26.2 | 24.9 | 22.3 | 18.2 | 16.7 |
| 87.5° | 5.2 | 7.8 | 11.5 | 10.0 | 3.9 | 1.7 | 0.9 | 0.4 | 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
 CIE u': 0.2508
 CIE v': 0.5215
 Duv: 0.0000
 CIE x: 0.4374
 CIE y: 0.4043
 CIE z: 0.1583
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 53

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.8 | | |
| R1: | 67.5 | R9: | -38.3 |
| R2: | 82.9 | R10: | 62.5 |
| R3: | 94.7 | R11: | 63.7 |
| R4: | 67.7 | R12: | 57.8 |
| R5: | 67.9 | R13: | 70.4 |
| R6: | 77.6 | R14: | 97.3 |
| R7: | 76.0 | | |
| R8: | 40.5 | | |

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

REPORT NUMBER: SP1-1908-441-2-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 3000K 4-step quadrangle

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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 | 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 (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 | | | |

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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)