

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: P634204

Luminaire Tested: GWS-SA3B-730-U-T2R-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P634204
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3B-730-U-T2R-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD
Light Source: (48) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7638.8 lumens
Efficiency: N/A
Efficacy: 111.8 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G1

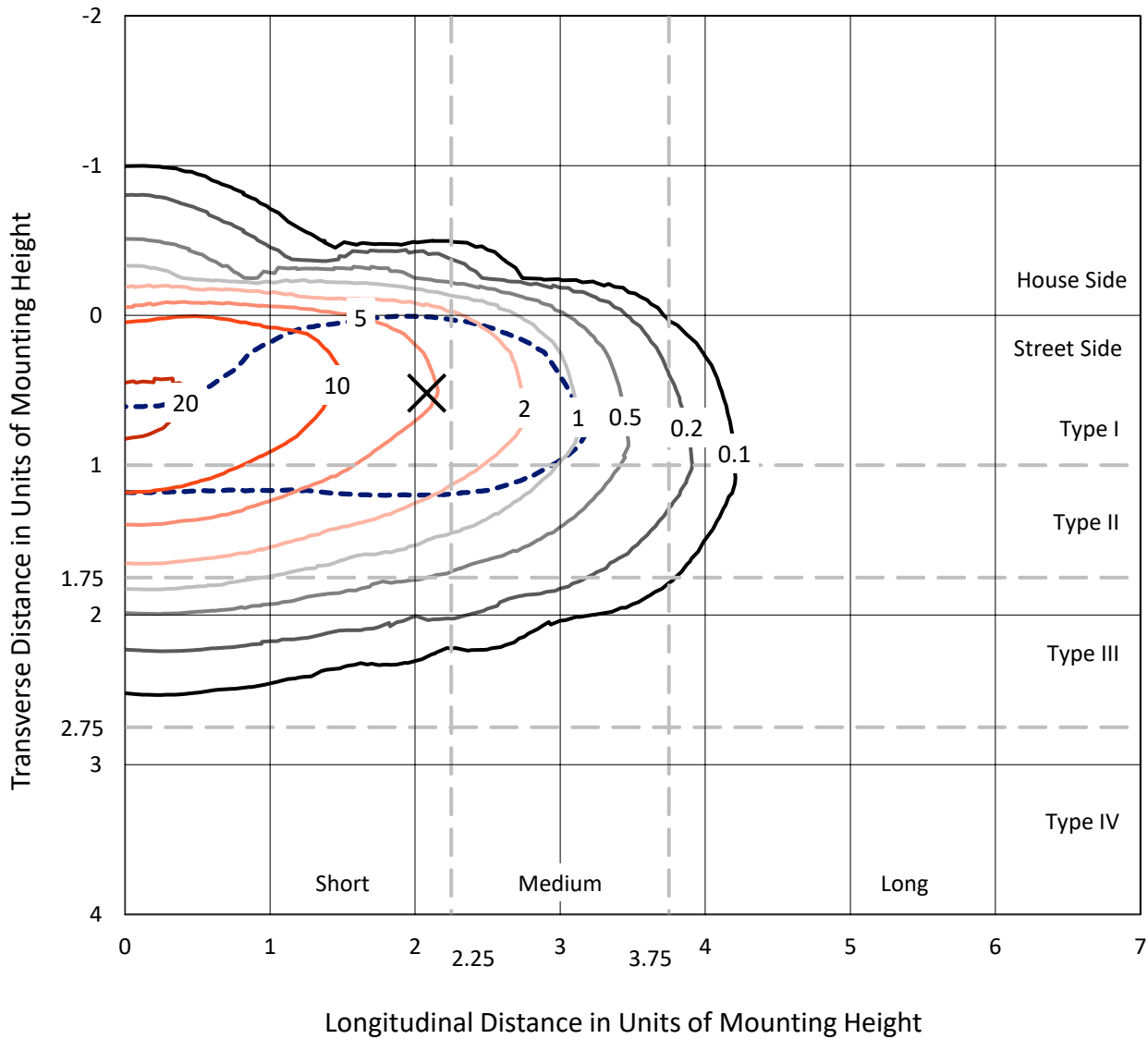
Input Watts (W): 68.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

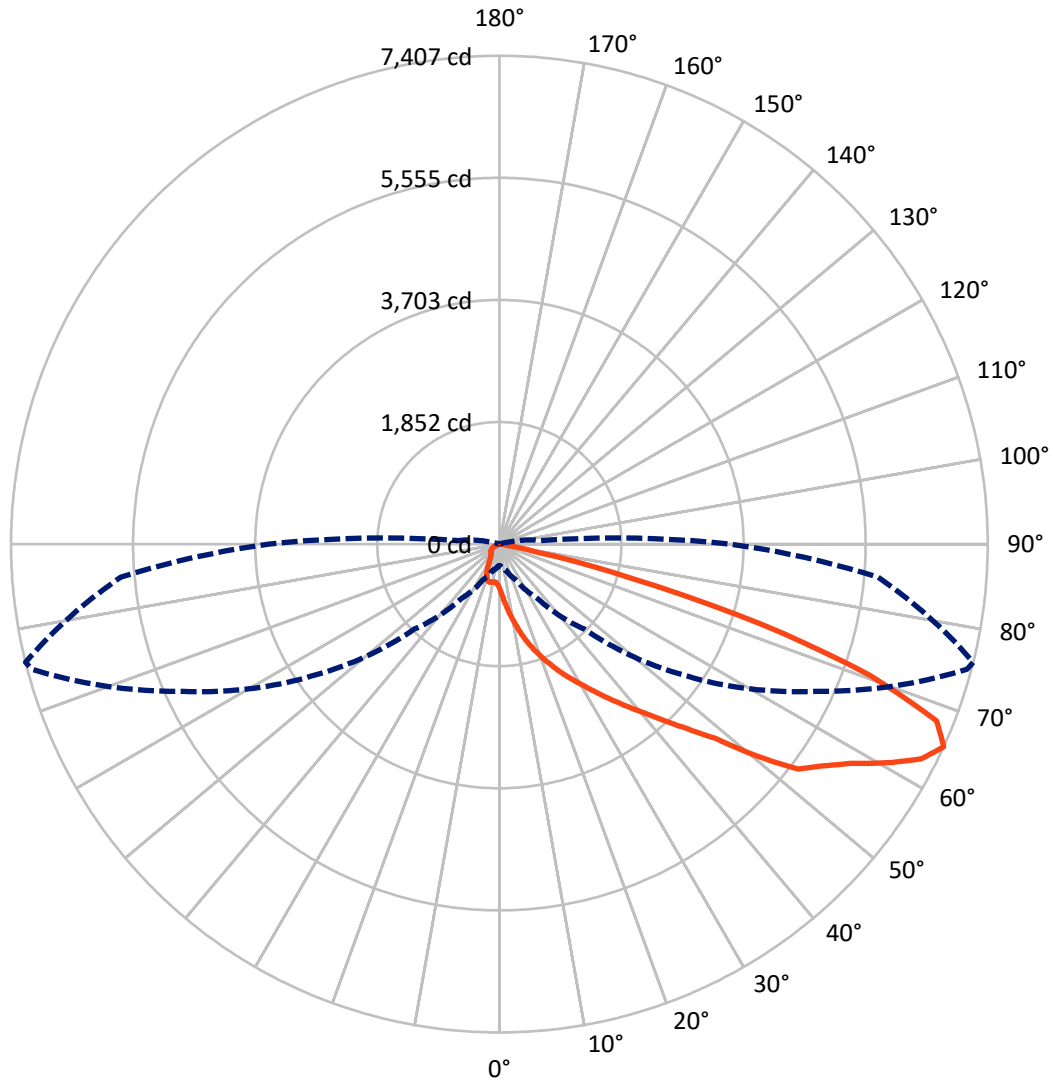
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 22.9 fc
 Type II - Short - N/A

REPORT NUMBER: P634204
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Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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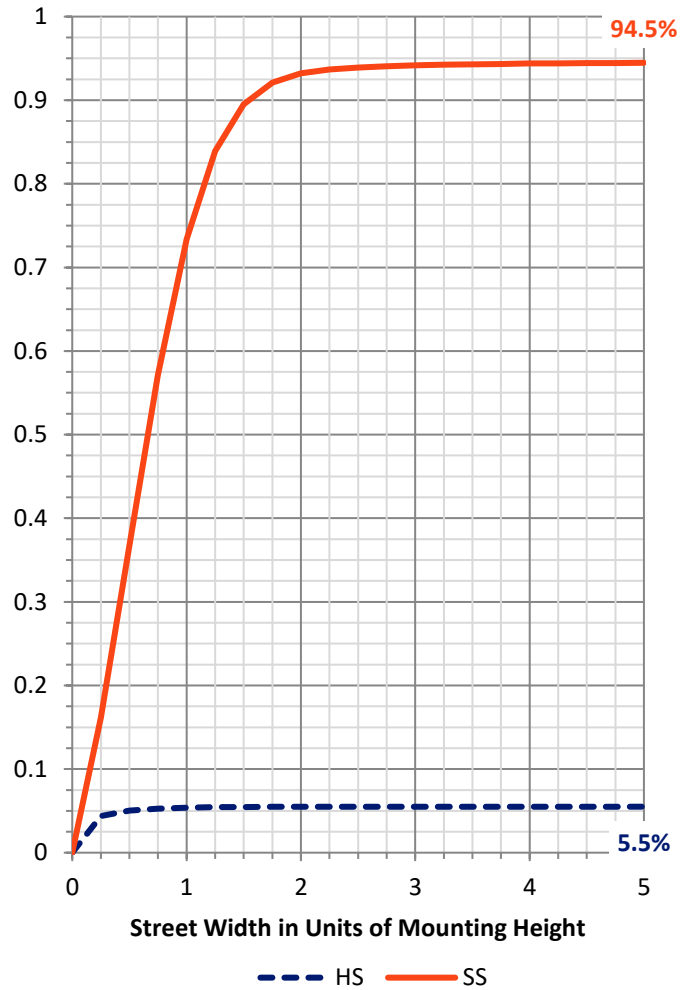
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 422.4 | 0.0 | 422.4 |
| | % Fixture | 5.5 | 0.0 | 5.5 |
| Street Side | Lumens | 7216.4 | 0.0 | 7216.4 |
| | % Fixture | 94.5 | 0.0 | 94.5 |
| Total | Lumens | 7638.8 | 0.0 | 7638.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 82.3 | 1.1 |
| 10°-20° | 312.2 | 4.1 |
| 20°-30° | 636.9 | 8.3 |
| 30°-40° | 1132.8 | 14.8 |
| 40°-50° | 1674.6 | 21.9 |
| 50°-60° | 1917.2 | 25.1 |
| 60°-70° | 1462.8 | 19.1 |
| 70°-80° | 409.8 | 5.4 |
| 80°-90° | 10.3 | 0.1 |
| 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° | 7638.8 | 100.0 |
| 0°-180° | 7638.8 | 100.0 |

Coefficient of Utilization



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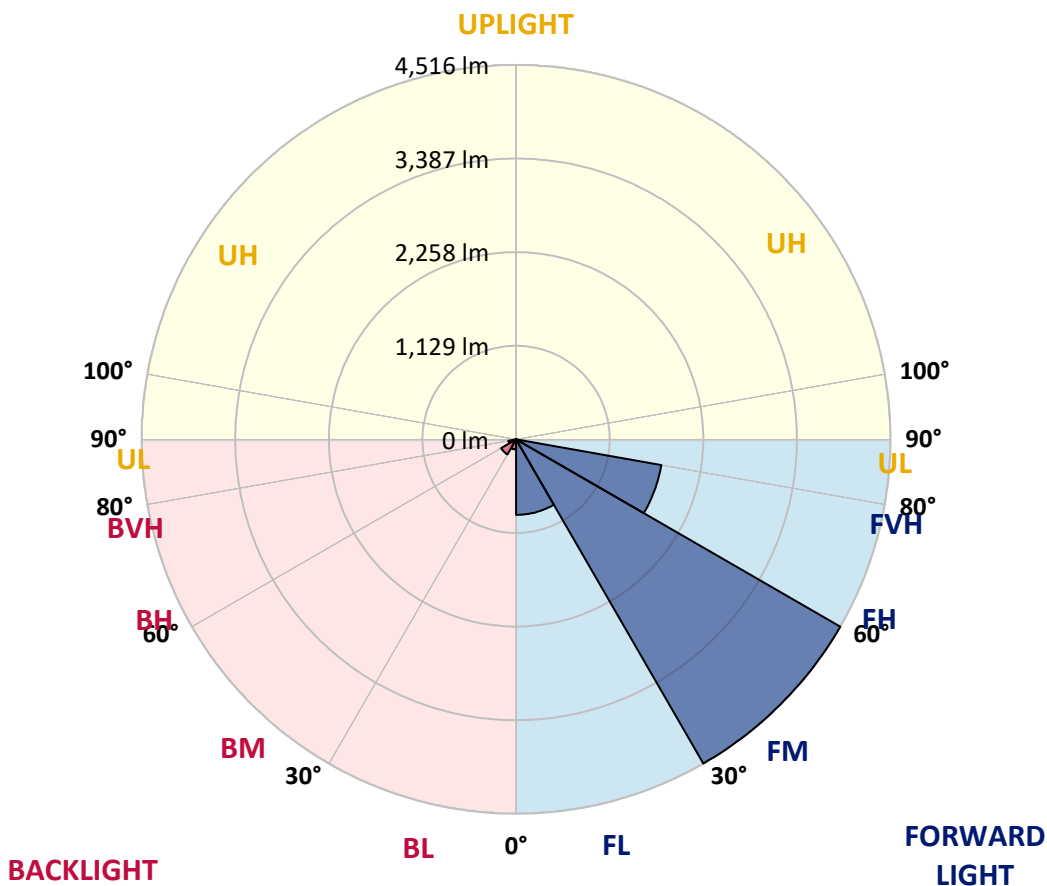
CATALOG NUMBER: GWS-SA3B-730-U-T2R-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 910.9 | 11.9 | | | |
| FM (30°-60°) | 4516.2 | 59.1 | | | |
| FH (60°-80°) | 1779.7 | 23.3 | | | G1/1800 |
| FVH (80°-90°) | 9.7 | 0.1 | | | G0/10 |
| BL (0°-30°) | 120.5 | 1.6 | B1/500 | | |
| BM (30°-60°) | 208.4 | 2.7 | B0/220 | | |
| BH (60°-80°) | 92.9 | 1.2 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.6 | 0.0 | | | 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° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 |
| 2.5° | 1042.3 | 1057.9 | 1045.7 | 1025.3 | 985.9 | 947.9 | 899.0 | 831.8 | 778.2 | 771.4 | 721.1 |
| 5° | 1407.6 | 1406.3 | 1379.8 | 1353.3 | 1311.9 | 1246.7 | 1148.2 | 1023.3 | 903.1 | 892.9 | 780.2 |
| 7.5° | 1624.9 | 1627.0 | 1612.0 | 1591.6 | 1550.9 | 1483.7 | 1381.1 | 1230.4 | 1054.5 | 1034.2 | 861.0 |
| 10° | 1807.6 | 1806.9 | 1796.0 | 1786.5 | 1749.9 | 1705.0 | 1595.0 | 1429.4 | 1217.5 | 1185.6 | 951.3 |
| 12.5° | 1944.7 | 1949.5 | 1954.9 | 1964.4 | 1948.8 | 1904.7 | 1800.8 | 1620.2 | 1382.5 | 1347.2 | 1054.5 |
| 15° | 2053.4 | 2054.7 | 2075.1 | 2111.8 | 2124.7 | 2101.6 | 2007.2 | 1804.9 | 1545.5 | 1514.9 | 1173.4 |
| 17.5° | 2086.0 | 2088.7 | 2123.3 | 2190.5 | 2258.4 | 2271.4 | 2200.1 | 1990.9 | 1705.7 | 1673.1 | 1288.8 |
| 20° | 2154.6 | 2160.7 | 2186.5 | 2245.5 | 2331.1 | 2400.4 | 2372.5 | 2179.0 | 1866.0 | 1823.2 | 1406.9 |
| 22.5° | 2370.5 | 2373.9 | 2365.1 | 2372.5 | 2416.7 | 2496.8 | 2513.8 | 2361.0 | 2030.3 | 1984.8 | 1534.6 |
| 25° | 2741.9 | 2743.3 | 2681.5 | 2623.1 | 2589.8 | 2604.8 | 2642.1 | 2528.7 | 2193.3 | 2148.4 | 1653.4 |
| 27.5° | 3127.6 | 3132.4 | 3058.3 | 2959.2 | 2840.4 | 2772.5 | 2761.6 | 2682.2 | 2357.6 | 2308.0 | 1770.9 |
| 30° | 3490.9 | 3490.9 | 3412.8 | 3291.9 | 3133.0 | 3000.6 | 2922.5 | 2837.0 | 2533.5 | 2479.1 | 1891.1 |
| 32.5° | 3817.5 | 3814.8 | 3715.0 | 3583.9 | 3427.1 | 3281.7 | 3117.4 | 2998.6 | 2729.0 | 2668.6 | 2029.6 |
| 35° | 4087.1 | 4080.3 | 3966.9 | 3841.3 | 3673.5 | 3565.6 | 3382.2 | 3172.4 | 2940.9 | 2880.4 | 2172.2 |
| 37.5° | 4290.8 | 4283.3 | 4179.4 | 4046.3 | 3890.8 | 3820.9 | 3667.4 | 3380.9 | 3164.3 | 3109.3 | 2330.4 |
| 40° | 4401.5 | 4386.5 | 4314.5 | 4215.4 | 4085.0 | 4023.9 | 3960.1 | 3639.6 | 3427.1 | 3358.5 | 2517.2 |
| 42.5° | 4434.1 | 4416.4 | 4368.9 | 4322.7 | 4243.9 | 4195.7 | 4264.3 | 3931.6 | 3715.6 | 3656.6 | 2730.4 |
| 45° | 4337.6 | 4327.4 | 4323.4 | 4356.6 | 4370.9 | 4384.5 | 4553.6 | 4254.8 | 4034.1 | 3989.3 | 2998.6 |
| 47.5° | 4105.4 | 4102.7 | 4138.7 | 4277.2 | 4427.9 | 4571.2 | 4868.0 | 4653.4 | 4447.0 | 4398.7 | 3373.4 |
| 50° | 3676.3 | 3704.1 | 3804.6 | 4047.7 | 4349.2 | 4677.1 | 5162.0 | 5206.1 | 5115.1 | 5044.5 | 3862.3 |
| 52.5° | 3005.4 | 3059.0 | 3284.5 | 3653.9 | 4087.1 | 4647.3 | 5297.8 | 5648.8 | 5741.9 | 5668.5 | 4212.7 |
| 55° | 2358.3 | 2408.5 | 2609.5 | 3078.0 | 3655.9 | 4419.8 | 5303.9 | 5801.6 | 6004.6 | 5936.7 | 4449.7 |
| 57.5° | 1756.6 | 1802.8 | 1985.5 | 2433.6 | 3069.2 | 3972.3 | 5158.6 | 5886.5 | 6316.3 | 6272.9 | 4823.8 |
| 60° | 1148.2 | 1193.7 | 1358.7 | 1750.5 | 2380.7 | 3320.4 | 4800.7 | 5868.8 | 6740.7 | 6736.6 | 5283.5 |
| 62.5° | 636.9 | 672.9 | 792.4 | 1098.0 | 1661.6 | 2571.5 | 4238.5 | 5691.6 | 7151.5 | 7177.3 | 5662.4 |
| 65° | 325.9 | 349.0 | 421.7 | 603.7 | 1005.6 | 1823.2 | 3499.0 | 5285.6 | 7341.7 | 7406.8 | 5762.2 |
| 67.5° | 213.2 | 220.7 | 238.3 | 313.7 | 538.5 | 1146.9 | 2633.3 | 4634.4 | 7074.1 | 7150.2 | 5427.5 |
| 70° | 173.2 | 179.3 | 189.4 | 209.1 | 277.7 | 609.1 | 1729.5 | 3701.4 | 5910.9 | 5962.5 | 4322.0 |
| 72.5° | 127.0 | 135.1 | 154.8 | 167.7 | 200.3 | 334.1 | 899.7 | 2429.6 | 4059.2 | 4150.2 | 2716.1 |
| 75° | 93.7 | 98.5 | 114.8 | 132.4 | 163.6 | 211.2 | 344.3 | 1277.3 | 2096.2 | 2043.2 | 1140.8 |
| 77.5° | 56.4 | 59.8 | 73.3 | 84.9 | 116.8 | 131.7 | 120.2 | 471.9 | 637.6 | 599.6 | 275.7 |
| 80° | 27.8 | 31.2 | 48.2 | 63.8 | 74.7 | 53.0 | 50.2 | 131.7 | 141.9 | 141.9 | 69.3 |
| 82.5° | 9.5 | 12.2 | 25.8 | 42.1 | 36.7 | 20.4 | 23.8 | 34.0 | 38.0 | 40.1 | 20.4 |
| 85° | 0.0 | 0.0 | 6.1 | 12.2 | 5.4 | 2.7 | 6.1 | 7.5 | 9.5 | 10.2 | 6.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 2.0 | 2.7 | 2.7 |
| 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: P634204

CATALOG NUMBER: GWS-SA3B-730-U-T2R-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 | 676.3 |
| 2.5° | 694.0 | 662.1 | 613.8 | 570.4 | 537.1 | 505.9 | 482.1 | 463.1 | 459.7 | 448.8 | 450.2 |
| 5° | 725.2 | 667.5 | 578.5 | 510.0 | 461.7 | 429.1 | 402.0 | 381.6 | 372.8 | 364.0 | 357.2 |
| 7.5° | 773.4 | 689.9 | 565.0 | 481.4 | 425.1 | 374.8 | 332.7 | 298.8 | 282.5 | 272.3 | 265.5 |
| 10° | 832.5 | 721.1 | 565.6 | 464.5 | 380.9 | 304.2 | 246.5 | 209.1 | 191.5 | 186.1 | 185.4 |
| 12.5° | 903.1 | 760.5 | 571.1 | 436.6 | 317.1 | 226.1 | 182.7 | 165.7 | 160.3 | 155.5 | 155.5 |
| 15° | 977.8 | 804.6 | 571.1 | 385.7 | 241.7 | 176.5 | 158.2 | 147.3 | 140.6 | 137.8 | 136.5 |
| 17.5° | 1056.6 | 846.1 | 557.5 | 315.7 | 185.4 | 155.5 | 140.6 | 130.4 | 124.9 | 120.9 | 119.5 |
| 20° | 1140.8 | 885.5 | 523.5 | 241.7 | 158.9 | 139.2 | 124.9 | 114.8 | 109.3 | 105.2 | 105.2 |
| 22.5° | 1226.3 | 922.1 | 468.5 | 186.1 | 140.6 | 123.6 | 110.0 | 100.5 | 95.1 | 91.0 | 91.0 |
| 25° | 1305.8 | 946.6 | 397.9 | 153.5 | 127.0 | 110.0 | 97.8 | 88.3 | 82.2 | 79.4 | 78.1 |
| 27.5° | 1379.8 | 962.2 | 319.8 | 135.1 | 114.1 | 98.5 | 85.6 | 76.7 | 72.0 | 69.9 | 68.6 |
| 30° | 1456.5 | 966.3 | 244.5 | 122.9 | 103.2 | 86.9 | 74.7 | 67.9 | 63.8 | 61.1 | 61.1 |
| 32.5° | 1531.2 | 961.5 | 186.7 | 112.7 | 93.7 | 76.7 | 66.5 | 60.4 | 57.0 | 55.0 | 54.3 |
| 35° | 1607.3 | 939.8 | 151.4 | 103.9 | 84.2 | 67.2 | 59.1 | 54.3 | 52.3 | 49.6 | 49.6 |
| 37.5° | 1690.1 | 910.6 | 131.7 | 95.1 | 74.7 | 60.4 | 53.0 | 49.6 | 46.9 | 44.8 | 44.1 |
| 40° | 1793.3 | 876.6 | 120.9 | 87.6 | 65.9 | 54.3 | 47.5 | 44.1 | 42.1 | 40.1 | 39.4 |
| 42.5° | 1915.5 | 843.4 | 115.4 | 79.4 | 59.1 | 48.2 | 42.8 | 38.7 | 36.7 | 34.0 | 33.3 |
| 45° | 2088.7 | 835.9 | 109.3 | 70.6 | 53.0 | 43.5 | 37.3 | 33.3 | 30.6 | 28.5 | 27.8 |
| 47.5° | 2367.1 | 856.9 | 99.1 | 61.1 | 46.9 | 38.0 | 31.9 | 28.5 | 25.1 | 23.1 | 21.7 |
| 50° | 2643.5 | 851.5 | 89.0 | 53.0 | 41.4 | 32.6 | 27.2 | 23.8 | 20.4 | 18.3 | 17.7 |
| 52.5° | 2794.2 | 825.7 | 79.4 | 46.9 | 36.0 | 27.8 | 23.1 | 19.0 | 17.0 | 14.9 | 14.3 |
| 55° | 2930.7 | 815.5 | 69.9 | 40.7 | 30.6 | 24.4 | 19.0 | 15.6 | 14.3 | 12.2 | 11.5 |
| 57.5° | 3198.2 | 839.3 | 61.8 | 35.3 | 26.5 | 21.0 | 16.3 | 12.9 | 11.5 | 9.5 | 8.8 |
| 60° | 3478.0 | 842.0 | 53.0 | 30.6 | 23.1 | 17.7 | 12.9 | 10.2 | 8.8 | 6.8 | 6.1 |
| 62.5° | 3624.0 | 773.4 | 43.5 | 25.8 | 19.0 | 14.9 | 10.9 | 8.1 | 6.8 | 4.1 | 4.1 |
| 65° | 3501.8 | 625.4 | 36.7 | 21.0 | 14.9 | 11.5 | 8.1 | 6.1 | 4.1 | 2.0 | 0.7 |
| 67.5° | 3099.1 | 444.8 | 30.6 | 17.0 | 10.9 | 8.1 | 6.1 | 4.1 | 0.7 | 0.0 | 0.0 |
| 70° | 2269.3 | 254.0 | 23.8 | 12.2 | 8.1 | 5.4 | 4.1 | 2.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1394.7 | 135.8 | 17.7 | 8.1 | 6.1 | 4.1 | 3.4 | 1.4 | 0.0 | 0.0 | 0.0 |
| 75° | 529.0 | 65.2 | 10.9 | 5.4 | 4.8 | 3.4 | 2.0 | 0.7 | 0.0 | 0.0 | 0.0 |
| 77.5° | 143.3 | 31.9 | 6.1 | 4.1 | 3.4 | 2.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 37.3 | 14.9 | 4.1 | 2.7 | 2.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 12.9 | 6.8 | 2.0 | 2.0 | 1.4 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 5.4 | 2.7 | 1.4 | 1.4 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 2.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 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
 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)