

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: P639514

Luminaire Tested: GWS-SA5C-722-U-SL2-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P639514
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-28)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5C-722-U-SL2-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (80) 2200K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10299.4 lumens
Efficiency: N/A
Efficacy: 65.4 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B2 - U0 - G1

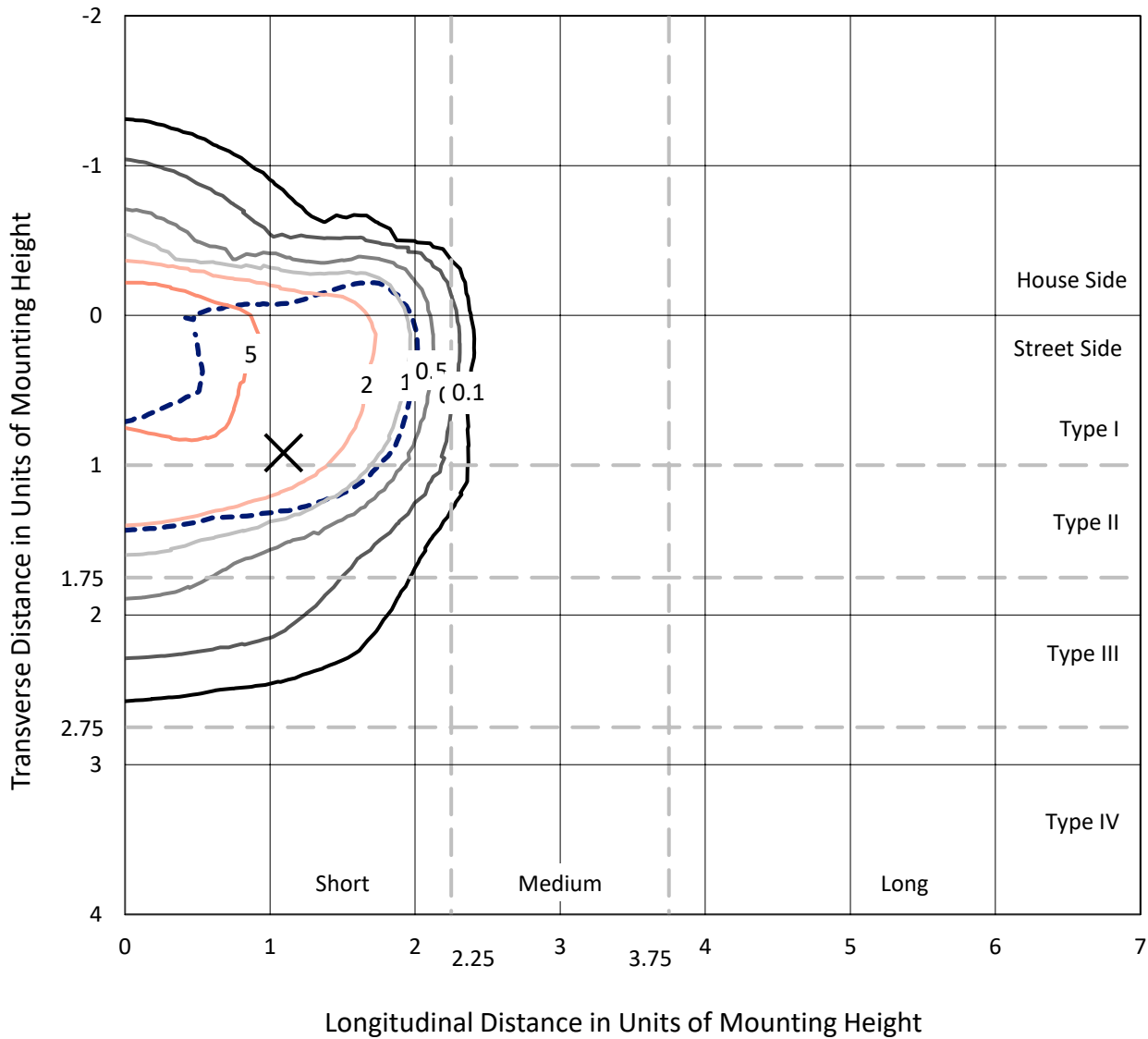
Input Watts (W): 157.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

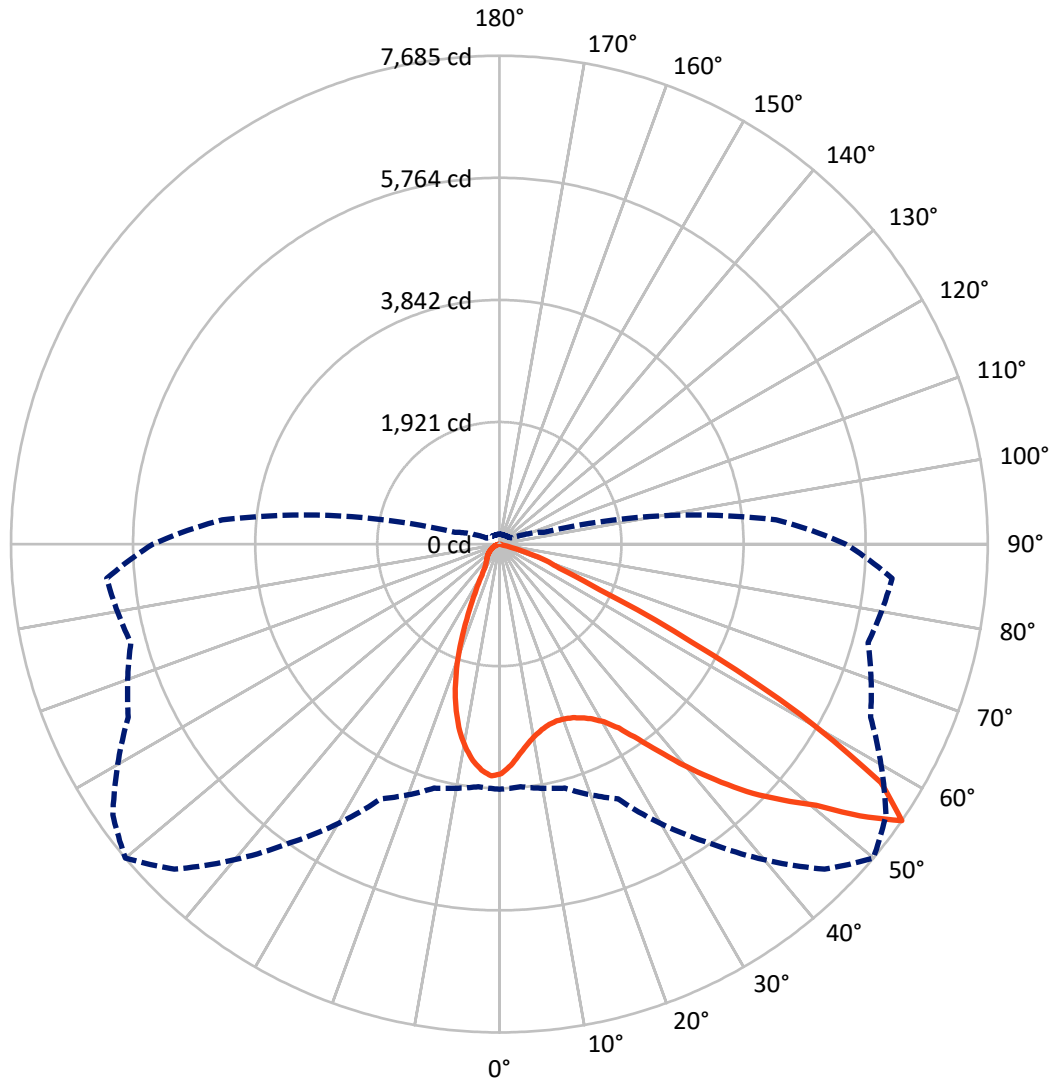
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9 fc
 Type II - Short - N/A

REPORT NUMBER: P639514
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Luminous Intensity Polar Plot



— Vertical Plane Through 50-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

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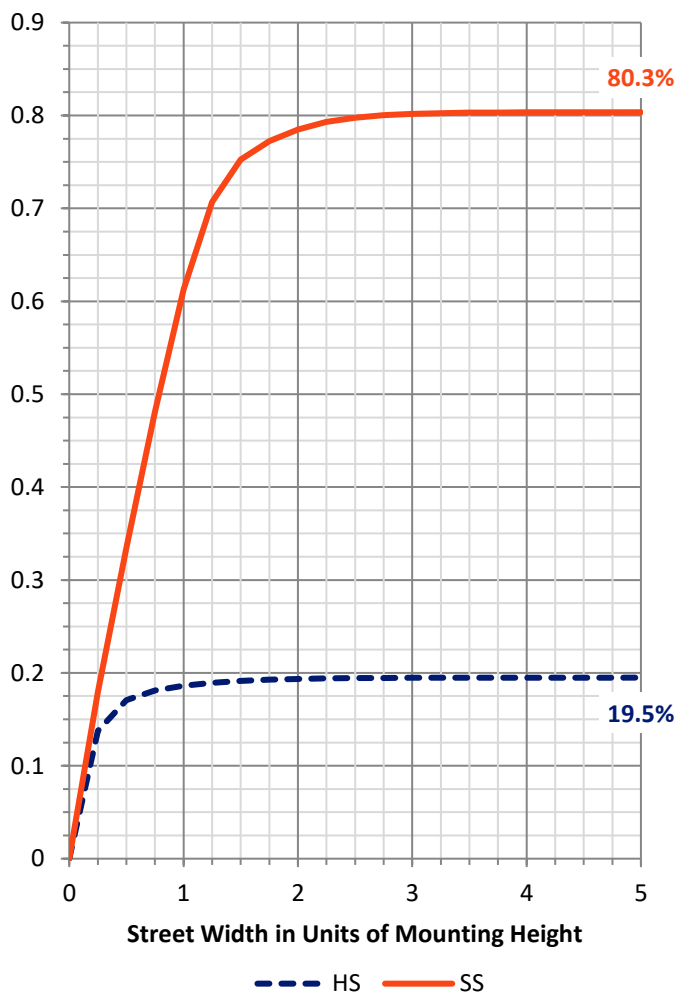
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2029.5 | 0.0 | 2029.5 |
| | % Fixture | 19.7 | 0.0 | 19.7 |
| Street Side | Lumens | 8269.9 | 0.0 | 8269.9 |
| | % Fixture | 80.3 | 0.0 | 80.3 |
| Total | Lumens | 10299.4 | 0.0 | 10299.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 317.3 | 3.1 |
| 10°-20° | 780.9 | 7.6 |
| 20°-30° | 1101.5 | 10.7 |
| 30°-40° | 1630.1 | 15.8 |
| 40°-50° | 2351.7 | 22.8 |
| 50°-60° | 2774.0 | 26.9 |
| 60°-70° | 1237.4 | 12.0 |
| 70°-80° | 106.4 | 1.0 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 10299.4 | 100.0 |
| 0°-180° | 10299.4 | 100.0 |

Coefficient of Utilization



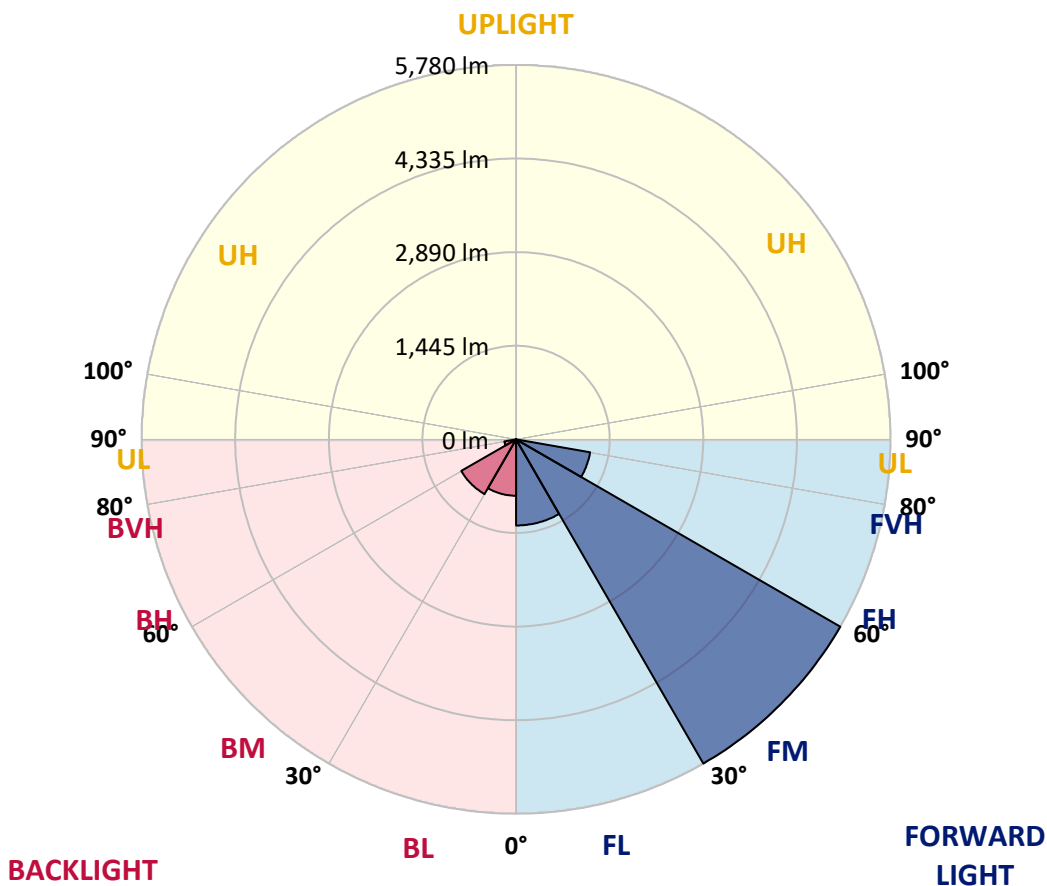
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1329.7 | 12.9 | | | |
| FM (30°-60°) | 5779.7 | 56.1 | | | |
| FH (60°-80°) | 1160.6 | 11.3 | | | G1/1800 |
| FVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL (0°-30°) | 870.2 | 8.4 | B2/1000 | | |
| BM (30°-60°) | 976.0 | 9.5 | B1/1000 | | |
| BH (60°-80°) | 183.2 | 1.8 | B1/500 | | G1/500 |
| BVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G1
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 50° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 |
| 2.5° | 3357.1 | 3359.6 | 3360.9 | 3394.8 | 3407.4 | 3457.7 | 3484.1 | 3497.9 | 3534.4 | 3577.1 | 3612.3 |
| 5° | 3132.0 | 3128.3 | 3134.6 | 3177.3 | 3205.0 | 3279.1 | 3319.4 | 3347.0 | 3427.5 | 3528.1 | 3612.3 |
| 7.5° | 2935.9 | 2943.4 | 2951.0 | 2997.5 | 3039.0 | 3119.5 | 3177.3 | 3218.8 | 3330.7 | 3480.3 | 3622.4 |
| 10° | 2797.6 | 2797.6 | 2808.9 | 2861.7 | 2910.7 | 3010.1 | 3067.9 | 3120.7 | 3254.0 | 3437.6 | 3633.7 |
| 12.5° | 2695.7 | 2697.0 | 2710.8 | 2771.2 | 2827.8 | 2930.9 | 2991.2 | 3042.8 | 3189.9 | 3394.8 | 3636.2 |
| 15° | 2648.0 | 2644.2 | 2655.5 | 2719.6 | 2782.5 | 2879.3 | 2942.2 | 2992.5 | 3144.6 | 3370.9 | 3648.8 |
| 17.5° | 2635.4 | 2632.9 | 2641.7 | 2704.5 | 2768.7 | 2863.0 | 2924.6 | 2974.9 | 3138.3 | 3378.5 | 3686.5 |
| 20° | 2671.9 | 2666.8 | 2663.1 | 2717.1 | 2777.5 | 2870.5 | 2934.6 | 2991.2 | 3168.5 | 3420.0 | 3744.4 |
| 22.5° | 2758.6 | 2758.6 | 2749.8 | 2776.2 | 2816.4 | 2900.7 | 2967.3 | 3041.5 | 3247.7 | 3503.0 | 3829.9 |
| 25° | 2918.3 | 2905.7 | 2889.4 | 2900.7 | 2895.7 | 2948.5 | 3027.7 | 3130.8 | 3397.3 | 3640.0 | 3934.2 |
| 27.5° | 3100.6 | 3111.9 | 3084.3 | 3085.5 | 3041.5 | 3022.7 | 3114.4 | 3270.3 | 3619.9 | 3833.6 | 4088.9 |
| 30° | 3348.3 | 3339.5 | 3340.8 | 3337.0 | 3235.1 | 3145.9 | 3245.2 | 3452.7 | 3900.3 | 4129.1 | 4290.1 |
| 32.5° | 3541.9 | 3554.5 | 3596.0 | 3619.9 | 3486.6 | 3343.3 | 3448.9 | 3700.4 | 4219.6 | 4466.1 | 4536.5 |
| 35° | 3746.9 | 3769.5 | 3853.8 | 3931.7 | 3819.8 | 3655.1 | 3768.3 | 4028.5 | 4520.1 | 4799.3 | 4819.4 |
| 37.5° | 3963.1 | 4008.4 | 4109.0 | 4246.0 | 4228.4 | 4082.6 | 4185.7 | 4414.5 | 4756.5 | 5000.5 | 5053.3 |
| 40° | 4210.8 | 4254.8 | 4419.6 | 4617.0 | 4658.5 | 4625.8 | 4659.7 | 4793.0 | 4912.4 | 5009.3 | 5153.8 |
| 42.5° | 4482.4 | 4542.8 | 4751.5 | 5015.5 | 5171.4 | 5200.4 | 5121.2 | 5107.3 | 4980.3 | 4908.7 | 5132.5 |
| 45° | 4803.0 | 4873.5 | 5109.8 | 5451.8 | 5699.5 | 5738.5 | 5601.5 | 5424.2 | 5023.1 | 4834.5 | 5068.3 |
| 47.5° | 5162.6 | 5229.3 | 5464.4 | 5875.6 | 6244.0 | 6259.1 | 6020.2 | 5734.7 | 5150.1 | 4920.0 | 5117.4 |
| 50° | 5283.4 | 5324.8 | 5528.5 | 6011.4 | 6690.3 | 6806.0 | 6460.2 | 6084.3 | 5405.3 | 5171.4 | 5356.3 |
| 52.5° | 4868.4 | 4884.8 | 5062.1 | 5549.9 | 6599.8 | 7342.9 | 7102.7 | 6606.1 | 5859.2 | 5554.9 | 5724.7 |
| 55° | 3857.5 | 3831.1 | 3974.5 | 4422.1 | 5736.0 | 7233.5 | 7684.9 | 7425.9 | 6443.9 | 6005.1 | 6203.7 |
| 57.5° | 2698.3 | 2666.8 | 2634.1 | 2937.2 | 4280.0 | 6132.1 | 7081.4 | 7540.3 | 7000.9 | 6451.4 | 6720.5 |
| 60° | 2218.0 | 2187.8 | 2029.4 | 1889.8 | 2587.6 | 4403.2 | 5439.3 | 6303.1 | 6955.6 | 6428.8 | 6704.1 |
| 62.5° | 1916.2 | 1898.6 | 1834.5 | 1644.6 | 1522.6 | 2513.4 | 3406.1 | 4233.5 | 5337.4 | 5048.2 | 5063.3 |
| 65° | 1505.0 | 1500.0 | 1544.0 | 1564.1 | 1346.6 | 1390.6 | 1737.6 | 2200.3 | 2885.6 | 2720.9 | 2580.1 |
| 67.5° | 1028.5 | 1017.2 | 1100.2 | 1352.9 | 1295.1 | 1097.7 | 1017.2 | 1026.0 | 1248.5 | 763.2 | 606.0 |
| 70° | 653.8 | 627.4 | 628.7 | 838.6 | 1053.7 | 866.3 | 784.6 | 690.3 | 621.1 | 113.2 | 128.2 |
| 72.5° | 418.7 | 402.3 | 345.8 | 378.5 | 487.8 | 422.5 | 426.2 | 367.1 | 245.2 | 60.4 | 70.4 |
| 75° | 176.0 | 162.2 | 124.5 | 99.3 | 98.1 | 61.6 | 54.1 | 50.3 | 33.9 | 33.9 | 36.5 |
| 77.5° | 1.3 | 0.0 | 0.0 | 1.3 | 2.5 | 1.3 | 1.3 | 2.5 | 5.0 | 7.5 | 8.8 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 |



REPORT NUMBER: P639514

CATALOG NUMBER: GWS-SA5C-722-U-SL2-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 | 3613.6 |
| 2.5° | 3633.7 | 3603.5 | 3637.5 | 3650.1 | 3648.8 | 3650.1 | 3613.6 | 3588.5 | 3587.2 | 3555.8 | 3540.7 |
| 5° | 3647.6 | 3623.7 | 3648.8 | 3632.5 | 3593.5 | 3544.4 | 3479.1 | 3422.5 | 3397.3 | 3360.9 | 3343.3 |
| 7.5° | 3674.0 | 3648.8 | 3645.0 | 3579.7 | 3482.8 | 3379.7 | 3264.1 | 3161.0 | 3105.6 | 3039.0 | 3042.8 |
| 10° | 3692.8 | 3663.9 | 3614.9 | 3481.6 | 3320.6 | 3155.9 | 2983.7 | 2830.3 | 2733.5 | 2644.2 | 2629.1 |
| 12.5° | 3700.4 | 3657.6 | 3543.2 | 3342.0 | 3115.7 | 2900.7 | 2648.0 | 2429.2 | 2278.3 | 2161.4 | 2145.0 |
| 15° | 3714.2 | 3645.0 | 3451.4 | 3173.5 | 2863.0 | 2558.7 | 2236.8 | 1937.6 | 1737.6 | 1603.1 | 1614.4 |
| 17.5° | 3735.6 | 3631.2 | 3348.3 | 2984.9 | 2591.4 | 2161.4 | 1726.3 | 1383.1 | 1199.5 | 1121.5 | 1122.8 |
| 20° | 3765.7 | 3614.9 | 3235.1 | 2777.5 | 2265.7 | 1712.5 | 1207.0 | 948.0 | 896.5 | 894.0 | 890.2 |
| 22.5° | 3806.0 | 3598.5 | 3114.4 | 2549.9 | 1879.7 | 1199.5 | 803.4 | 723.0 | 744.3 | 785.8 | 793.4 |
| 25° | 3853.8 | 3578.4 | 2979.9 | 2293.4 | 1458.5 | 787.1 | 602.3 | 589.7 | 641.2 | 696.6 | 709.1 |
| 27.5° | 3927.9 | 3568.3 | 2826.5 | 2001.7 | 1023.5 | 564.5 | 492.9 | 500.4 | 546.9 | 593.5 | 604.8 |
| 30° | 4053.7 | 3587.2 | 2659.3 | 1674.8 | 657.6 | 450.1 | 427.5 | 438.8 | 464.0 | 487.8 | 497.9 |
| 32.5° | 4224.7 | 3642.5 | 2497.1 | 1317.7 | 469.0 | 391.0 | 386.0 | 392.3 | 402.3 | 416.2 | 420.0 |
| 35° | 4424.6 | 3738.1 | 2329.9 | 943.0 | 387.3 | 357.1 | 352.1 | 352.1 | 357.1 | 359.6 | 360.9 |
| 37.5° | 4589.3 | 3838.7 | 2172.7 | 627.4 | 347.0 | 330.7 | 323.1 | 319.4 | 318.1 | 320.6 | 321.9 |
| 40° | 4661.0 | 3880.2 | 2001.7 | 456.4 | 318.1 | 306.8 | 295.5 | 284.2 | 284.2 | 293.0 | 294.2 |
| 42.5° | 4610.7 | 3833.6 | 1804.3 | 377.2 | 298.0 | 281.6 | 264.0 | 254.0 | 259.0 | 267.8 | 270.3 |
| 45° | 4503.8 | 3719.2 | 1586.8 | 333.2 | 277.9 | 256.5 | 236.4 | 230.1 | 235.1 | 246.4 | 249.0 |
| 47.5° | 4486.2 | 3643.8 | 1326.5 | 304.3 | 256.5 | 235.1 | 213.7 | 207.5 | 213.7 | 222.5 | 225.1 |
| 50° | 4661.0 | 3709.2 | 1037.3 | 279.1 | 236.4 | 212.5 | 194.9 | 188.6 | 192.4 | 197.4 | 199.9 |
| 52.5° | 4980.3 | 3951.8 | 837.4 | 255.2 | 212.5 | 189.9 | 178.5 | 171.0 | 171.0 | 176.0 | 177.3 |
| 55° | 5451.8 | 4375.6 | 723.0 | 227.6 | 184.8 | 172.3 | 162.2 | 154.7 | 154.7 | 157.2 | 158.4 |
| 57.5° | 5995.0 | 4888.5 | 749.4 | 191.1 | 162.2 | 155.9 | 147.1 | 140.8 | 143.3 | 143.3 | 143.3 |
| 60° | 5919.6 | 4850.8 | 802.2 | 160.9 | 143.3 | 140.8 | 133.3 | 130.8 | 137.1 | 132.0 | 129.5 |
| 62.5° | 4360.5 | 3350.8 | 420.0 | 132.0 | 123.2 | 120.7 | 115.7 | 120.7 | 129.5 | 115.7 | 110.6 |
| 65° | 2117.4 | 1622.0 | 168.5 | 108.1 | 104.4 | 101.8 | 99.3 | 106.9 | 111.9 | 90.5 | 85.5 |
| 67.5° | 497.9 | 404.9 | 109.4 | 91.8 | 86.8 | 81.7 | 84.2 | 85.5 | 81.7 | 61.6 | 59.1 |
| 70° | 129.5 | 127.0 | 85.5 | 76.7 | 69.2 | 64.1 | 64.1 | 62.9 | 54.1 | 39.0 | 36.5 |
| 72.5° | 70.4 | 69.2 | 61.6 | 57.8 | 47.8 | 42.7 | 44.0 | 39.0 | 30.2 | 22.6 | 21.4 |
| 75° | 35.2 | 37.7 | 35.2 | 32.7 | 26.4 | 23.9 | 23.9 | 21.4 | 15.1 | 8.8 | 8.8 |
| 77.5° | 7.5 | 8.8 | 8.8 | 7.5 | 6.3 | 5.0 | 5.0 | 6.3 | 2.5 | 0.0 | 0.0 |
| 80° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

Test Information

Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-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-722-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): 2237
 CIE u': 0.2876
 CIE v': 0.5346
 Duv: -0.0006
 CIE x: 0.5005
 CIE y: 0.4134
 CIE z: 0.0860
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 587
 Purity: 74.5
 Rf: 69.8
 Rg: 99.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.9 | R9: | -17.4 |
| R2: | 83.0 | R10: | 61.3 |
| R3: | 95.2 | R11: | 59.8 |
| R4: | 66.2 | R12: | 50.5 |
| R5: | 65.9 | R13: | 71.1 |
| R6: | 76.3 | R14: | 96.9 |
| R7: | 76.7 | | |
| R8: | 43.8 | | |



Test Conditions
 Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/41%
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-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 2200K 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1470.8 M/P: 0.27

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

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Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_g = -17.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)