

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: P635662

Luminaire Tested: GWS-SA3E-730-U-RW-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P635662
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-51)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3E-730-U-RW-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (48) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17653.5 lumens
Efficiency: N/A
Efficacy: 110.9 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G1

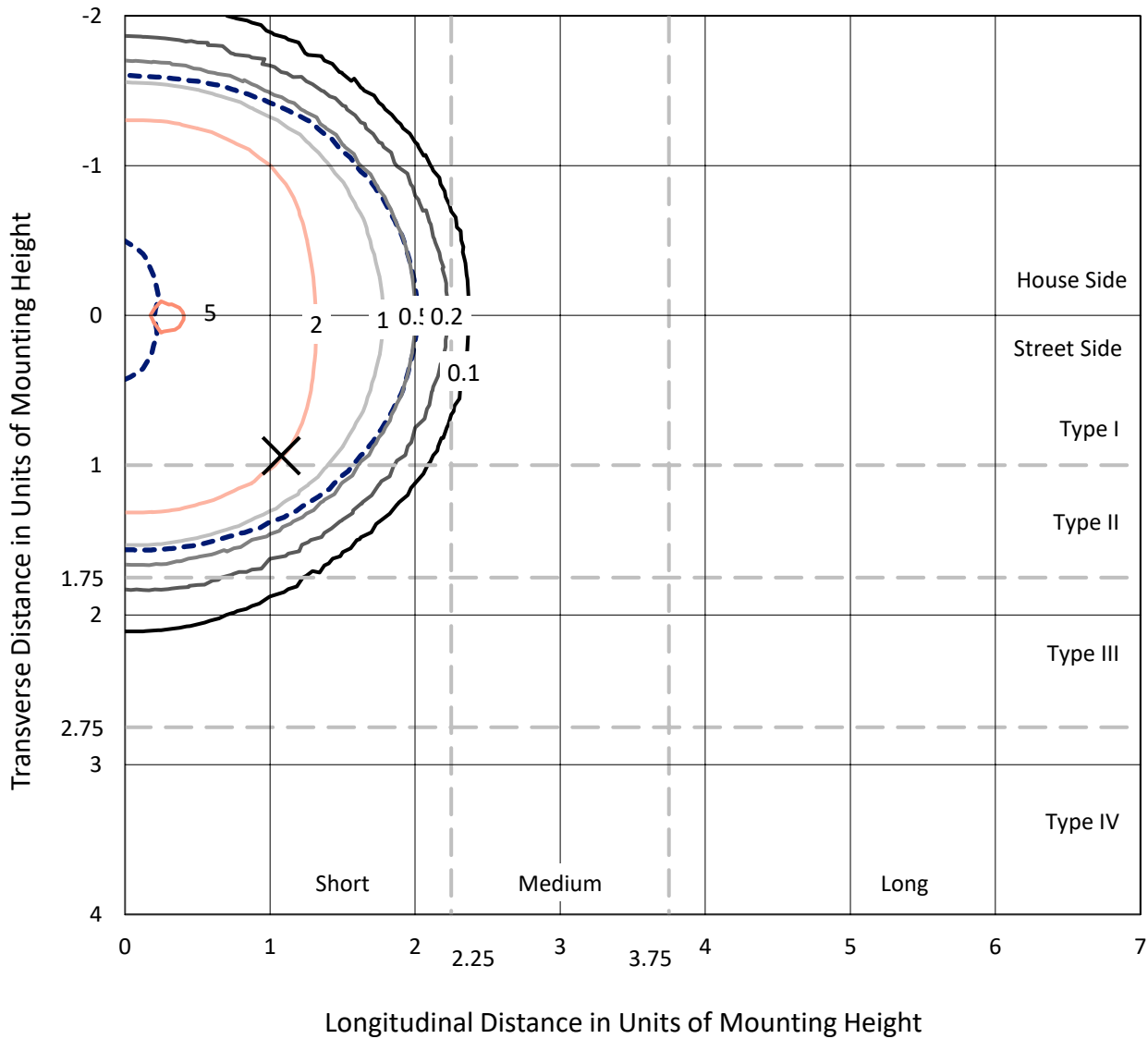
Input Watts (W): 159.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

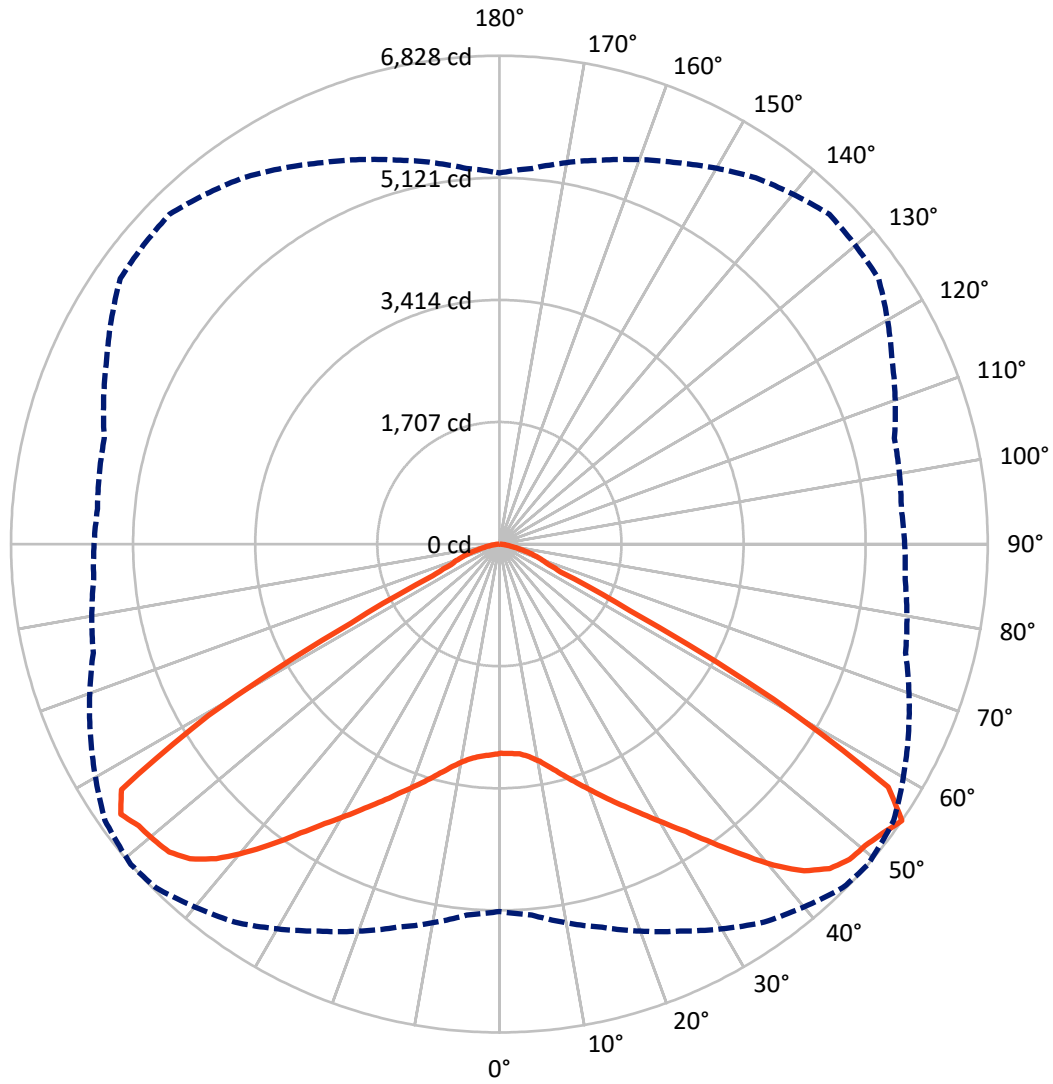
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.2 fc
 Type V - Short - N/A

REPORT NUMBER: P635662
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Luminous Intensity Polar Plot



— Vertical Plane Through 49-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

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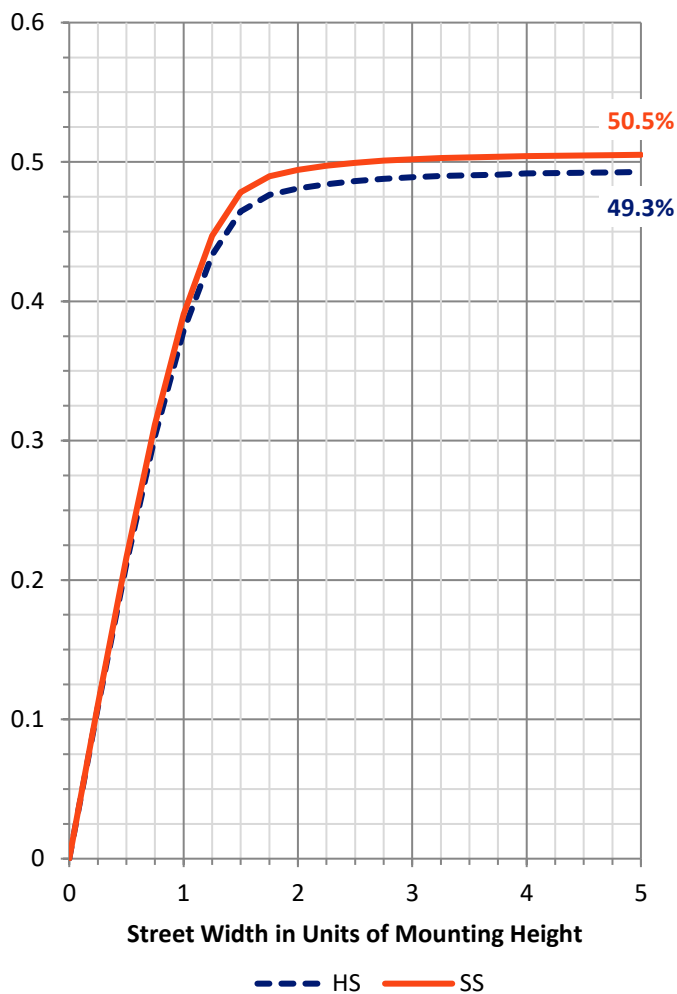
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8740.2 | 0.0 | 8740.2 |
| | % Fixture | 49.5 | 0.0 | 49.5 |
| Street Side | Lumens | 8913.4 | 0.0 | 8913.4 |
| | % Fixture | 50.5 | 0.0 | 50.5 |
| Total | Lumens | 17653.5 | 0.0 | 17653.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 285.3 | 1.6 |
| 10°-20° | 941.0 | 5.3 |
| 20°-30° | 1792.3 | 10.2 |
| 30°-40° | 3038.3 | 17.2 |
| 40°-50° | 4572.4 | 25.9 |
| 50°-60° | 5004.9 | 28.4 |
| 60°-70° | 1582.6 | 9.0 |
| 70°-80° | 379.8 | 2.2 |
| 80°-90° | 57.0 | 0.3 |
| 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° | 17653.5 | 100.0 |
| 0°-180° | 17653.5 | 100.0 |

Coefficient of Utilization



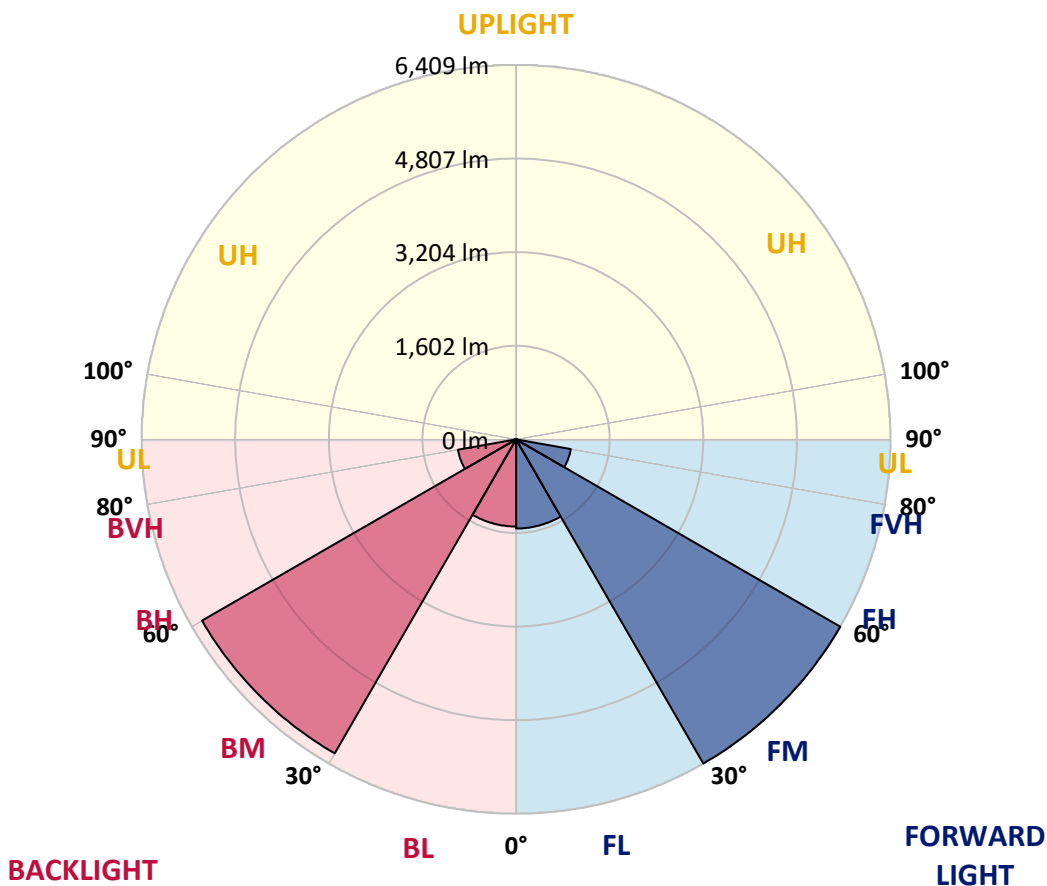
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1526.3 | 8.6 | | | |
| FM (30°-60°) | 6408.7 | 36.3 | | | |
| FH (60°-80°) | 951.9 | 5.4 | | | G1/1800 |
| FVH (80°-90°) | 26.4 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1492.2 | 8.5 | B3/2500 | | |
| BM (30°-60°) | 6206.9 | 35.2 | B4/8500 | | |
| BH (60°-80°) | 1010.5 | 5.7 | B3/2500 | | G1/1800 |
| BVH (80°-90°) | 30.6 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 </tr | | | |

BUG Rating: B4-U0-G1
 Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 49° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 |
| 2.5° | 2881.3 | 2884.2 | 2890.0 | 2900.0 | 2910.1 | 2924.4 | 2930.2 | 2937.3 | 2935.9 | 2944.5 | 2944.5 |
| 5° | 2867.0 | 2871.3 | 2879.9 | 2894.3 | 2911.5 | 2938.8 | 2945.9 | 2963.2 | 2980.4 | 3001.9 | 3009.1 |
| 7.5° | 2884.2 | 2890.0 | 2900.0 | 2923.0 | 2948.8 | 2984.7 | 2999.1 | 3027.8 | 3060.8 | 3099.6 | 3115.4 |
| 10° | 2917.2 | 2924.4 | 2941.6 | 2979.0 | 3020.6 | 3075.2 | 3088.1 | 3124.0 | 3177.1 | 3230.2 | 3261.8 |
| 12.5° | 2954.6 | 2966.0 | 2997.6 | 3056.5 | 3118.2 | 3190.0 | 3210.1 | 3254.6 | 3312.0 | 3380.9 | 3424.0 |
| 15° | 2997.6 | 3007.7 | 3056.5 | 3139.8 | 3235.9 | 3330.7 | 3353.7 | 3396.7 | 3461.3 | 3528.8 | 3589.1 |
| 17.5° | 3088.1 | 3105.3 | 3162.7 | 3258.9 | 3370.9 | 3482.9 | 3508.7 | 3557.5 | 3609.2 | 3662.3 | 3719.8 |
| 20° | 3211.5 | 3225.9 | 3299.1 | 3418.3 | 3550.4 | 3652.3 | 3678.1 | 3721.2 | 3745.6 | 3772.9 | 3821.7 |
| 22.5° | 3335.0 | 3355.1 | 3438.4 | 3579.1 | 3734.1 | 3844.7 | 3864.8 | 3905.0 | 3887.7 | 3879.1 | 3910.7 |
| 25° | 3488.6 | 3515.9 | 3597.7 | 3751.3 | 3909.3 | 4045.6 | 4061.4 | 4095.9 | 4067.2 | 4022.7 | 4021.2 |
| 27.5° | 3679.6 | 3704.0 | 3788.7 | 3946.6 | 4103.1 | 4245.2 | 4275.4 | 4321.3 | 4258.1 | 4203.6 | 4164.8 |
| 30° | 3906.4 | 3922.2 | 4015.5 | 4183.5 | 4344.3 | 4479.2 | 4518.0 | 4563.9 | 4516.5 | 4426.1 | 4387.3 |
| 32.5° | 4170.5 | 4192.1 | 4299.8 | 4476.3 | 4619.9 | 4754.9 | 4793.6 | 4851.0 | 4799.4 | 4697.4 | 4648.6 |
| 35° | 4487.8 | 4509.4 | 4622.8 | 4815.2 | 4961.6 | 5100.8 | 5128.1 | 5175.5 | 5110.9 | 4993.2 | 4954.4 |
| 37.5° | 4832.4 | 4859.7 | 5003.2 | 5185.6 | 5339.2 | 5501.4 | 5502.8 | 5517.2 | 5425.3 | 5278.9 | 5235.8 |
| 40° | 5220.0 | 5255.9 | 5399.5 | 5589.0 | 5774.2 | 5906.2 | 5904.8 | 5864.6 | 5709.6 | 5482.7 | 5416.7 |
| 42.5° | 5603.3 | 5632.0 | 5777.0 | 5972.3 | 6157.5 | 6282.4 | 6245.1 | 6147.4 | 5923.5 | 5614.8 | 5527.2 |
| 45° | 5880.4 | 5901.9 | 6054.1 | 6273.8 | 6461.8 | 6539.4 | 6471.9 | 6354.2 | 6051.2 | 5698.1 | 5568.9 |
| 47.5° | 6011.0 | 6039.8 | 6193.4 | 6411.6 | 6624.1 | 6668.6 | 6588.2 | 6477.6 | 6125.9 | 5775.6 | 5601.9 |
| 50° | 5940.7 | 5978.0 | 6151.7 | 6354.2 | 6593.9 | 6685.8 | 6628.4 | 6517.8 | 6204.9 | 5851.7 | 5660.7 |
| 52.5° | 5758.4 | 5794.3 | 6013.9 | 6259.4 | 6530.8 | 6713.1 | 6711.6 | 6621.2 | 6295.3 | 5873.2 | 5663.6 |
| 55° | 5135.3 | 5205.6 | 5547.3 | 5970.8 | 6453.2 | 6793.5 | 6827.9 | 6731.7 | 6309.7 | 5879.0 | 5693.8 |
| 57.5° | 3342.2 | 3465.6 | 3790.1 | 4341.4 | 5309.0 | 6179.0 | 6411.6 | 6434.6 | 6206.3 | 5854.6 | 5699.5 |
| 60° | 1395.4 | 1494.5 | 1751.5 | 2117.6 | 2917.2 | 3952.3 | 4403.1 | 4855.4 | 5400.9 | 5599.0 | 5646.4 |
| 62.5° | 867.1 | 875.7 | 901.6 | 984.9 | 1251.9 | 1757.2 | 2047.2 | 2470.7 | 3281.9 | 3972.4 | 4291.1 |
| 65° | 782.4 | 786.7 | 792.5 | 786.7 | 799.7 | 861.4 | 938.9 | 1086.8 | 1417.0 | 1760.1 | 2167.8 |
| 67.5° | 689.1 | 694.9 | 699.2 | 694.9 | 699.2 | 702.0 | 710.6 | 723.6 | 783.9 | 832.7 | 870.0 |
| 70° | 557.0 | 565.6 | 572.8 | 570.0 | 587.2 | 587.2 | 595.8 | 605.8 | 636.0 | 671.9 | 697.7 |
| 72.5° | 425.0 | 417.8 | 426.4 | 429.3 | 445.1 | 453.7 | 466.6 | 478.1 | 512.5 | 534.1 | 567.1 |
| 75° | 275.6 | 268.5 | 281.4 | 288.6 | 310.1 | 321.6 | 333.1 | 344.6 | 369.0 | 383.3 | 414.9 |
| 77.5° | 149.3 | 147.9 | 160.8 | 170.8 | 193.8 | 208.2 | 216.8 | 225.4 | 245.5 | 249.8 | 269.9 |
| 80° | 86.1 | 86.1 | 94.8 | 101.9 | 116.3 | 132.1 | 140.7 | 147.9 | 162.2 | 166.5 | 175.1 |
| 82.5° | 47.4 | 47.4 | 51.7 | 56.0 | 67.5 | 76.1 | 83.3 | 89.0 | 101.9 | 106.2 | 110.5 |
| 85° | 23.0 | 21.5 | 24.4 | 27.3 | 31.6 | 35.9 | 40.2 | 43.1 | 53.1 | 56.0 | 61.7 |
| 87.5° | 2.9 | 2.9 | 2.9 | 4.3 | 5.7 | 8.6 | 10.0 | 10.0 | 15.8 | 18.7 | 21.5 |
| 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: P635662

CATALOG NUMBER: GWS-SA3E-730-U-RW-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 | 2924.4 |
| 2.5° | 2953.1 | 2934.5 | 2945.9 | 2950.3 | 2950.3 | 2945.9 | 2927.3 | 2921.5 | 2912.9 | 2900.0 | 2900.0 |
| 5° | 3019.2 | 3004.8 | 3007.7 | 3000.5 | 2983.3 | 2961.7 | 2927.3 | 2910.1 | 2895.7 | 2879.9 | 2878.5 |
| 7.5° | 3132.6 | 3113.9 | 3111.0 | 3083.8 | 3037.8 | 2991.9 | 2940.2 | 2908.6 | 2887.1 | 2867.0 | 2865.5 |
| 10° | 3280.4 | 3263.2 | 3241.7 | 3187.1 | 3119.7 | 3052.2 | 2981.8 | 2938.8 | 2907.2 | 2878.5 | 2877.0 |
| 12.5° | 3445.5 | 3425.4 | 3385.3 | 3304.9 | 3220.2 | 3154.1 | 3073.7 | 3007.7 | 2960.3 | 2921.5 | 2914.4 |
| 15° | 3625.0 | 3596.3 | 3527.4 | 3432.6 | 3349.4 | 3279.0 | 3192.9 | 3098.1 | 3026.3 | 2964.6 | 2957.4 |
| 17.5° | 3762.8 | 3725.5 | 3650.8 | 3561.8 | 3492.9 | 3422.6 | 3310.6 | 3191.4 | 3088.1 | 3010.5 | 2999.1 |
| 20° | 3857.6 | 3827.4 | 3742.7 | 3676.7 | 3636.5 | 3574.8 | 3444.1 | 3309.2 | 3192.9 | 3095.3 | 3089.5 |
| 22.5° | 3945.2 | 3909.3 | 3826.0 | 3787.2 | 3787.2 | 3745.6 | 3620.7 | 3461.3 | 3325.0 | 3211.5 | 3197.2 |
| 25° | 4044.2 | 4005.5 | 3942.3 | 3938.0 | 3958.1 | 3939.4 | 3788.7 | 3617.8 | 3458.5 | 3330.7 | 3307.7 |
| 27.5° | 4182.0 | 4139.0 | 4101.6 | 4127.5 | 4156.2 | 4136.1 | 3968.1 | 3770.0 | 3602.0 | 3472.8 | 3452.7 |
| 30° | 4401.7 | 4348.6 | 4314.1 | 4345.7 | 4401.7 | 4342.8 | 4160.5 | 3950.9 | 3781.5 | 3639.4 | 3629.3 |
| 32.5° | 4657.2 | 4596.9 | 4561.0 | 4611.3 | 4661.5 | 4569.7 | 4388.8 | 4187.8 | 4009.8 | 3860.5 | 3843.2 |
| 35° | 4964.5 | 4888.4 | 4835.3 | 4902.7 | 4954.4 | 4864.0 | 4684.5 | 4493.6 | 4295.5 | 4140.4 | 4117.4 |
| 37.5° | 5237.2 | 5145.4 | 5109.5 | 5204.2 | 5273.1 | 5214.3 | 5019.0 | 4839.6 | 4622.8 | 4453.4 | 4443.3 |
| 40° | 5435.4 | 5344.9 | 5319.1 | 5475.6 | 5596.1 | 5581.8 | 5406.6 | 5201.3 | 4997.5 | 4802.2 | 4783.6 |
| 42.5° | 5521.5 | 5458.3 | 5464.1 | 5675.1 | 5861.7 | 5953.6 | 5797.1 | 5577.5 | 5380.8 | 5178.4 | 5165.5 |
| 45° | 5540.2 | 5501.4 | 5547.3 | 5811.5 | 6057.0 | 6245.1 | 6111.5 | 5927.8 | 5705.3 | 5510.0 | 5504.3 |
| 47.5° | 5560.3 | 5538.7 | 5609.1 | 5889.0 | 6180.5 | 6398.7 | 6324.0 | 6134.5 | 5909.1 | 5718.2 | 5703.8 |
| 50° | 5607.6 | 5599.0 | 5678.0 | 5943.6 | 6239.3 | 6440.3 | 6355.6 | 6167.5 | 5936.4 | 5748.3 | 5713.9 |
| 52.5° | 5622.0 | 5607.6 | 5721.0 | 6028.3 | 6336.9 | 6438.9 | 6256.5 | 6011.0 | 5778.5 | 5568.9 | 5533.0 |
| 55° | 5666.5 | 5640.7 | 5718.2 | 6059.9 | 6471.9 | 6522.1 | 6250.8 | 5883.3 | 5558.8 | 5273.1 | 5188.4 |
| 57.5° | 5678.0 | 5649.3 | 5699.5 | 6008.2 | 6325.5 | 6280.9 | 5494.2 | 4747.7 | 4136.1 | 3818.8 | 3854.7 |
| 60° | 5616.2 | 5624.9 | 5538.7 | 5504.3 | 5073.6 | 4479.2 | 3363.7 | 2689.0 | 2111.8 | 1867.8 | 1920.9 |
| 62.5° | 4275.4 | 4311.2 | 4016.9 | 3492.9 | 2686.1 | 2129.1 | 1408.4 | 1094.0 | 926.0 | 882.9 | 890.1 |
| 65° | 2157.8 | 2206.6 | 1900.8 | 1572.0 | 1168.6 | 944.7 | 816.9 | 791.0 | 782.4 | 772.4 | 772.4 |
| 67.5° | 854.2 | 868.6 | 857.1 | 802.5 | 746.5 | 726.4 | 720.7 | 717.8 | 707.8 | 702.0 | 703.5 |
| 70° | 686.2 | 697.7 | 680.5 | 646.0 | 623.1 | 621.6 | 618.8 | 613.0 | 605.8 | 605.8 | 610.1 |
| 72.5° | 559.9 | 571.4 | 547.0 | 525.4 | 508.2 | 495.3 | 488.1 | 483.8 | 473.8 | 473.8 | 478.1 |
| 75° | 412.0 | 419.2 | 399.1 | 396.2 | 377.6 | 364.7 | 353.2 | 347.4 | 334.5 | 328.8 | 333.1 |
| 77.5° | 274.2 | 272.8 | 262.7 | 262.7 | 255.5 | 239.8 | 226.8 | 213.9 | 196.7 | 185.2 | 188.1 |
| 80° | 178.0 | 178.0 | 173.7 | 173.7 | 166.5 | 153.6 | 137.8 | 124.9 | 114.9 | 106.2 | 106.2 |
| 82.5° | 113.4 | 112.0 | 110.5 | 109.1 | 106.2 | 93.3 | 81.8 | 73.2 | 66.0 | 60.3 | 61.7 |
| 85° | 63.2 | 63.2 | 60.3 | 60.3 | 54.6 | 47.4 | 41.6 | 35.9 | 31.6 | 30.1 | 30.1 |
| 87.5° | 21.5 | 21.5 | 20.1 | 20.1 | 17.2 | 12.9 | 10.0 | 8.6 | 7.2 | 5.7 | 7.2 |
| 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 (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)