

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: P640302

Luminaire Tested: GWS-SA5D-750-U-T1-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640302
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5D-750-U-T1-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS
Light Source: (80) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30673.1 lumens
Efficiency: N/A
Efficacy: 149.9 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type I - Medium
BUG Rating: B4 - U0 - G4

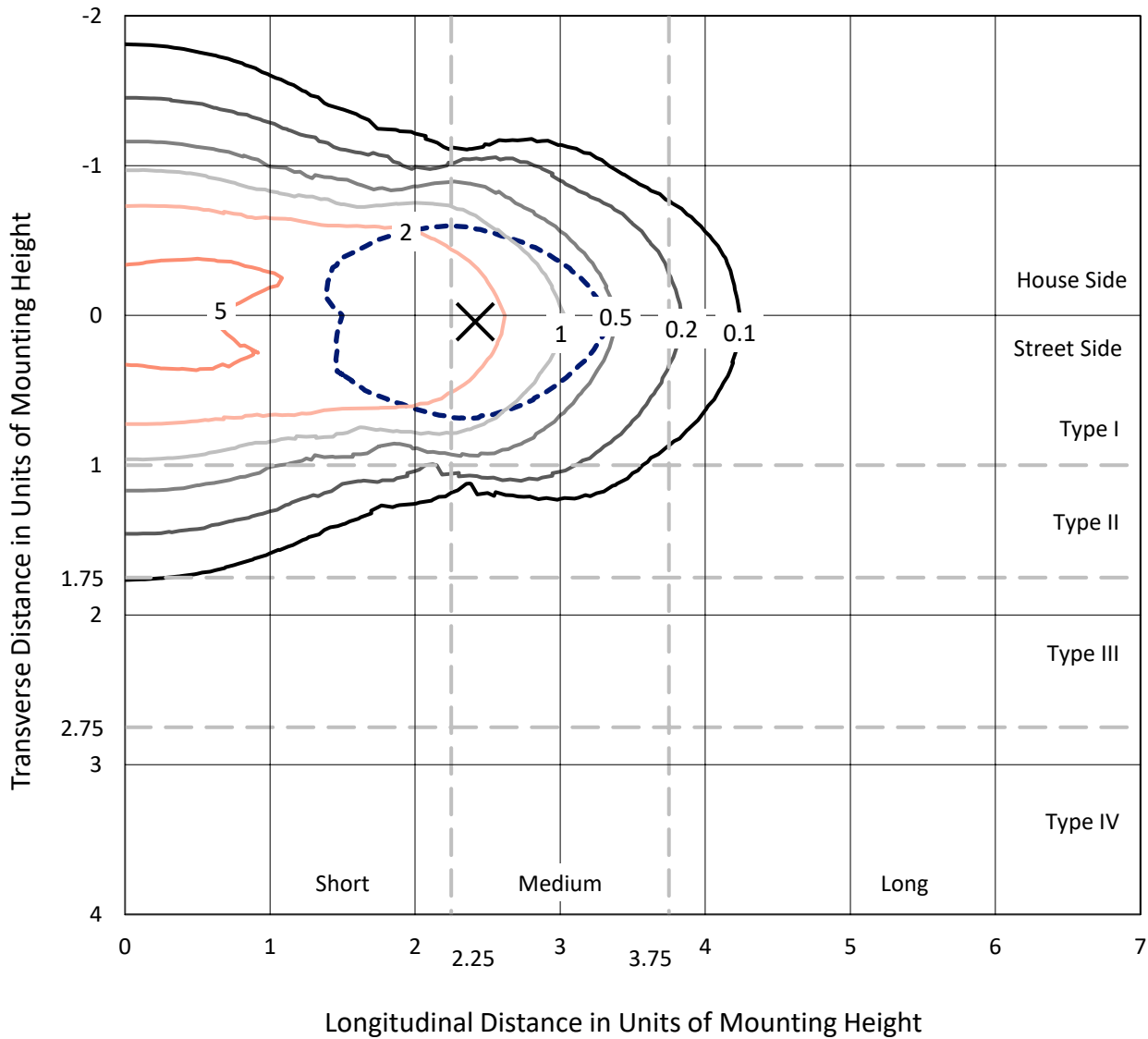
Input Watts (W): 204.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

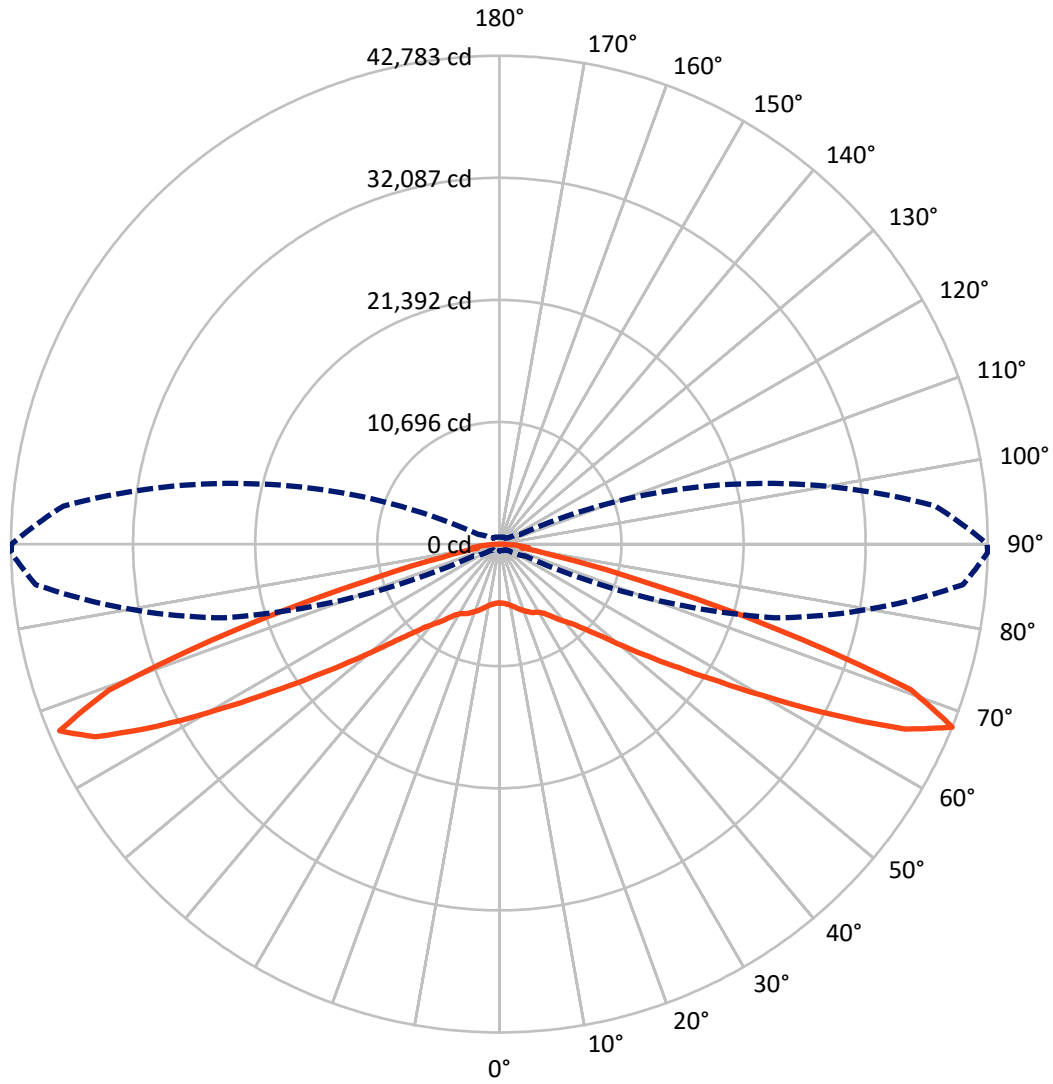
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.2 fc
 Type I - Medium - N/A

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CATALOG NUMBER: GWS-SA5D-750-U-T1-W

Luminous Intensity Polar Plot



— Vertical Plane Through 89-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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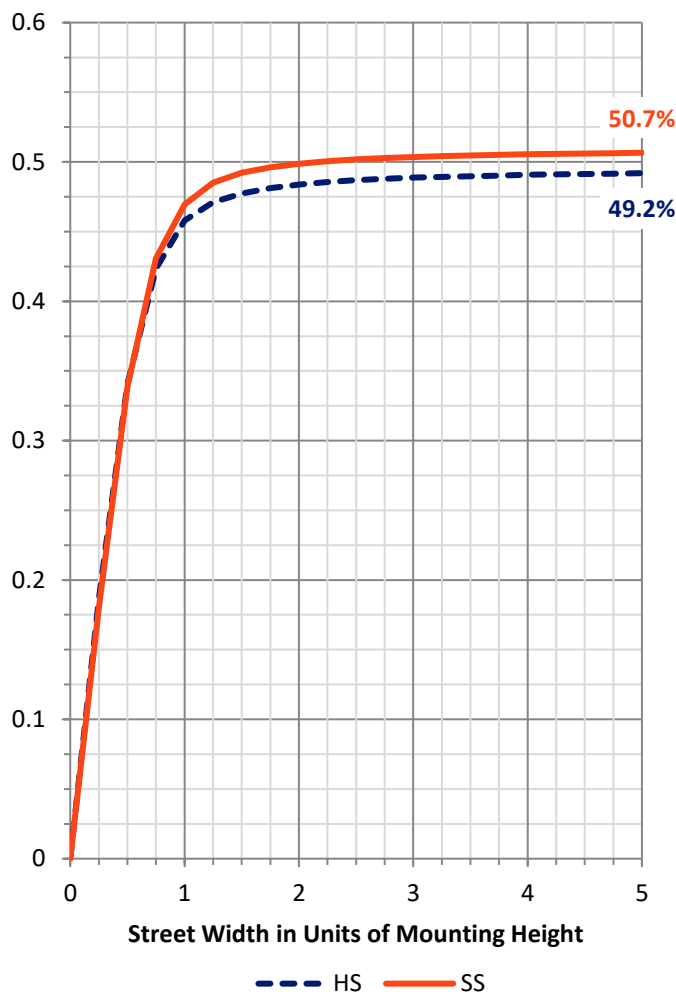
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 15202.1 | 0.0 | 15202.1 |
| | % Fixture | 49.6 | 0.0 | 49.6 |
| Street Side | Lumens | 15471.0 | 0.0 | 15471.0 |
| | % Fixture | 50.4 | 0.0 | 50.4 |
| Total | Lumens | 30673.1 | 0.0 | 30673.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 516.4 | 1.7 |
| 10°-20° | 1681.5 | 5.5 |
| 20°-30° | 2842.5 | 9.3 |
| 30°-40° | 3901.0 | 12.7 |
| 40°-50° | 4974.6 | 16.2 |
| 50°-60° | 6241.4 | 20.3 |
| 60°-70° | 7527.6 | 24.5 |
| 70°-80° | 2723.3 | 8.9 |
| 80°-90° | 264.8 | 0.9 |
| 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° | 30673.1 | 100.0 |
| 0°-180° | 30673.1 | 100.0 |

Coefficient of Utilization



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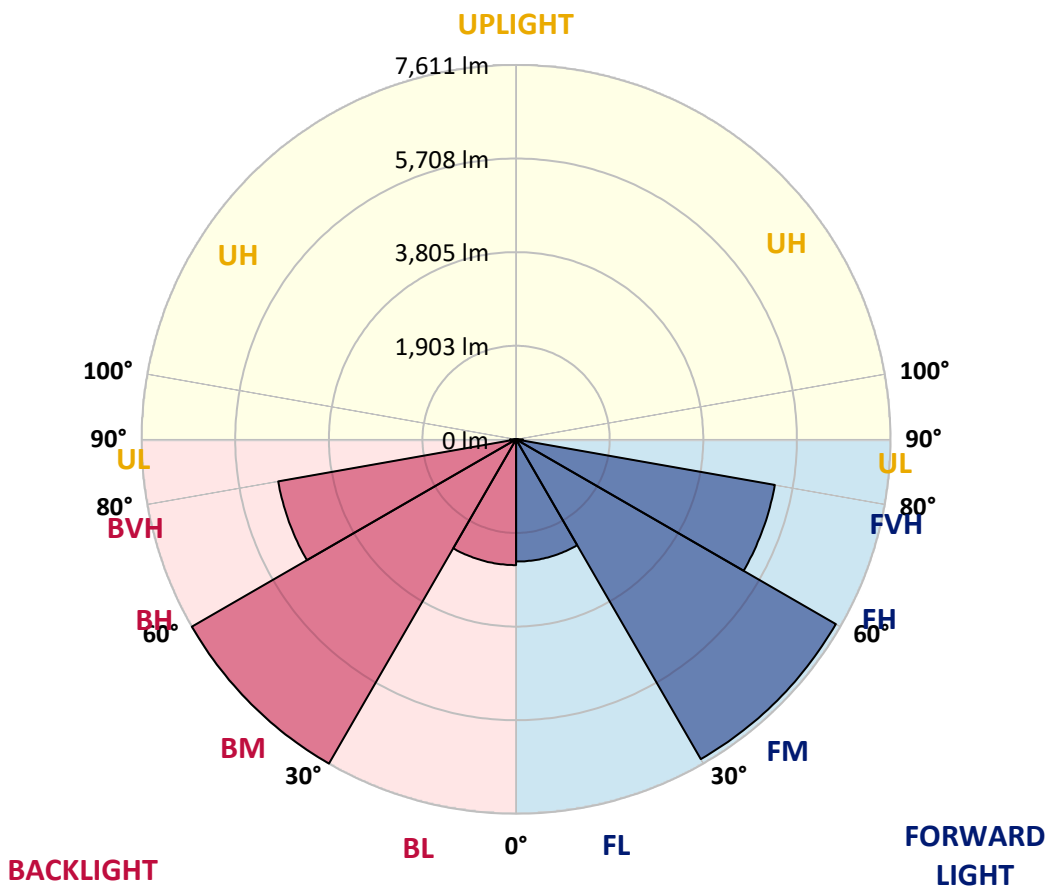
CATALOG NUMBER: GWS-SA5D-750-U-T1-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2484.3 | 8.1 | | | |
| FM (30°-60°) | 7506.3 | 24.5 | | | |
| FH (60°-80°) | 5340.6 | 17.4 | | | G3/7500 |
| FVH (80°-90°) | 139.7 | 0.5 | | | G2/225 |
| BL (0°-30°) | 2556.1 | 8.3 | B4/5000 | | |
| BM (30°-60°) | 7610.6 | 24.8 | B4/8500 | | |
| BH (60°-80°) | 4910.3 | 16.0 | B4/5000 | | G4/5000 |
| BVH (80°-90°) | 125.1 | 0.4 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G4

Type I Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 89° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0° | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 |
| 2.5° | 5163.7 | 5159.2 | 5148.2 | 5181.3 | 5174.7 | 5176.9 | 5190.1 | 5181.3 | 5165.9 | 5139.4 | 5176.9 |
| 5° | 5309.0 | 5306.8 | 5282.6 | 5302.4 | 5280.4 | 5265.0 | 5262.8 | 5240.8 | 5223.1 | 5194.5 | 5234.1 |
| 7.5° | 5450.0 | 5447.8 | 5428.0 | 5463.3 | 5445.6 | 5428.0 | 5408.2 | 5364.1 | 5322.3 | 5280.4 | 5324.5 |
| 10° | 5558.0 | 5555.8 | 5551.4 | 5602.0 | 5606.4 | 5613.0 | 5604.2 | 5529.3 | 5456.6 | 5406.0 | 5450.0 |
| 12.5° | 5619.7 | 5626.3 | 5637.3 | 5729.8 | 5776.1 | 5820.1 | 5831.1 | 5769.5 | 5648.3 | 5575.6 | 5628.5 |
| 15° | 5577.8 | 5591.0 | 5646.1 | 5813.5 | 5941.3 | 6040.4 | 6082.3 | 6031.6 | 5875.2 | 5754.0 | 5813.5 |
| 17.5° | 5377.3 | 5388.4 | 5496.3 | 5751.8 | 6033.8 | 6262.9 | 6331.2 | 6300.4 | 6126.3 | 5978.7 | 6036.0 |
| 20° | 5099.8 | 5124.0 | 5240.8 | 5597.6 | 6018.4 | 6417.1 | 6600.0 | 6588.9 | 6399.5 | 6172.6 | 6240.9 |
| 22.5° | 4848.6 | 4877.3 | 5000.6 | 5395.0 | 5914.9 | 6456.8 | 6870.9 | 6899.6 | 6648.4 | 6366.4 | 6421.5 |
| 25° | 4566.7 | 4593.1 | 4751.7 | 5154.8 | 5736.4 | 6425.9 | 7102.2 | 7232.2 | 6930.4 | 6588.9 | 6639.6 |
| 27.5° | 4278.1 | 4297.9 | 4454.3 | 4883.9 | 5502.9 | 6368.7 | 7285.1 | 7597.9 | 7208.0 | 6743.1 | 6778.4 |
| 30° | 4024.7 | 4051.2 | 4194.4 | 4612.9 | 5247.4 | 6254.1 | 7434.9 | 7987.8 | 7527.4 | 6917.2 | 6945.8 |
| 32.5° | 3780.2 | 3802.2 | 3958.7 | 4346.4 | 4976.4 | 6077.9 | 7569.2 | 8446.0 | 8001.0 | 7241.0 | 7241.0 |
| 35° | 3471.8 | 3511.5 | 3687.7 | 4090.8 | 4720.9 | 5844.4 | 7666.2 | 8979.1 | 8648.7 | 7719.0 | 7721.2 |
| 37.5° | 3187.6 | 3209.7 | 3394.7 | 3802.2 | 4452.1 | 5580.0 | 7675.0 | 9532.1 | 9468.2 | 8327.1 | 8331.5 |
| 40° | 2863.8 | 2892.4 | 3090.7 | 3493.8 | 4143.7 | 5302.4 | 7591.3 | 10047.5 | 10327.3 | 8952.7 | 8928.4 |
| 42.5° | 2535.6 | 2577.4 | 2766.9 | 3161.2 | 3811.1 | 4963.2 | 7368.8 | 10538.8 | 11417.8 | 9677.4 | 9618.0 |
| 45° | 2218.3 | 2244.8 | 2434.2 | 2806.5 | 3430.0 | 4557.8 | 7011.9 | 11010.2 | 12713.1 | 10778.9 | 10693.0 |
| 47.5° | 1861.5 | 1872.5 | 2068.5 | 2425.4 | 3035.6 | 4106.2 | 6500.8 | 11431.0 | 14136.2 | 12237.2 | 12089.6 |
| 50° | 1544.2 | 1559.7 | 1713.9 | 2020.1 | 2553.2 | 3570.9 | 5864.2 | 11677.7 | 15949.2 | 14226.5 | 13970.9 |
| 52.5° | 1249.1 | 1264.5 | 1387.8 | 1632.4 | 2110.4 | 2960.7 | 5075.5 | 11620.4 | 17788.6 | 16696.0 | 16323.7 |
| 55° | 1008.9 | 1020.0 | 1103.7 | 1295.3 | 1661.0 | 2354.9 | 4143.7 | 11107.1 | 19830.7 | 19921.0 | 19119.2 |
| 57.5° | 852.5 | 856.9 | 914.2 | 1031.0 | 1297.5 | 1815.2 | 3198.6 | 9895.5 | 21972.0 | 24036.1 | 22718.8 |
| 60° | 762.2 | 764.4 | 790.8 | 863.5 | 1024.4 | 1385.6 | 2343.9 | 7965.8 | 24190.3 | 29184.3 | 27377.9 |
| 62.5° | 704.9 | 704.9 | 727.0 | 768.8 | 850.3 | 1066.2 | 1722.7 | 5721.0 | 25783.0 | 34786.4 | 32991.0 |
| 65° | 649.9 | 649.9 | 665.3 | 700.5 | 744.6 | 870.2 | 1293.1 | 3689.9 | 26565.1 | 39469.8 | 39071.1 |
| 67.5° | 579.4 | 581.6 | 592.6 | 630.0 | 669.7 | 727.0 | 980.3 | 2495.9 | 24941.5 | 40765.1 | 42783.0 |
| 70° | 513.3 | 515.5 | 530.9 | 555.1 | 588.2 | 627.8 | 766.6 | 1720.5 | 18154.3 | 33951.5 | 38253.8 |
| 72.5° | 440.6 | 449.4 | 460.4 | 486.8 | 506.7 | 535.3 | 625.6 | 1114.7 | 10563.0 | 21839.8 | 25287.4 |
| 75° | 361.3 | 372.3 | 385.5 | 411.9 | 425.2 | 436.2 | 515.5 | 795.3 | 5082.1 | 11067.5 | 12602.9 |
| 77.5° | 279.8 | 290.8 | 306.2 | 330.4 | 339.3 | 352.5 | 394.3 | 575.0 | 2434.2 | 4905.9 | 5289.2 |
| 80° | 187.2 | 191.7 | 204.9 | 233.5 | 248.9 | 257.7 | 290.8 | 392.1 | 1057.4 | 1969.4 | 1951.8 |
| 82.5° | 114.6 | 116.8 | 121.2 | 138.8 | 145.4 | 154.2 | 189.5 | 240.1 | 504.5 | 2238.2 | 2566.4 |
| 85° | 41.9 | 39.7 | 37.4 | 48.5 | 57.3 | 66.1 | 88.1 | 121.2 | 220.3 | 1537.6 | 1720.5 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.2 | 4.4 | 4.4 | 8.8 | 17.6 | 52.9 | 575.0 | 394.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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 CATALOG NUMBER: GWS-SA5D-750-U-T1-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 | 5148.2 |
| 2.5° | 5165.9 | 5141.6 | 5172.5 | 5194.5 | 5243.0 | 5260.6 | 5265.0 | 5249.6 | 5249.6 | 5223.1 | 5227.5 |
| 5° | 5225.3 | 5209.9 | 5260.6 | 5298.0 | 5368.5 | 5395.0 | 5412.6 | 5401.6 | 5408.2 | 5390.6 | 5395.0 |
| 7.5° | 5315.7 | 5302.4 | 5390.6 | 5463.3 | 5535.9 | 5566.8 | 5582.2 | 5573.4 | 5575.6 | 5553.6 | 5560.2 |
| 10° | 5441.2 | 5445.6 | 5551.4 | 5646.1 | 5743.0 | 5773.9 | 5780.5 | 5754.0 | 5732.0 | 5692.4 | 5694.6 |
| 12.5° | 5613.0 | 5635.1 | 5784.9 | 5890.6 | 5989.7 | 6033.8 | 5985.3 | 5888.4 | 5798.1 | 5729.8 | 5721.0 |
| 15° | 5800.3 | 5840.0 | 6055.8 | 6190.2 | 6298.2 | 6276.1 | 6132.9 | 5914.9 | 5736.4 | 5635.1 | 5615.3 |
| 17.5° | 6025.0 | 6084.5 | 6355.4 | 6516.2 | 6608.8 | 6467.8 | 6168.2 | 5842.2 | 5593.2 | 5456.6 | 5430.2 |
| 20° | 6236.5 | 6331.2 | 6672.7 | 6881.9 | 6892.9 | 6575.7 | 6152.8 | 5694.6 | 5381.7 | 5214.3 | 5179.1 |
| 22.5° | 6430.3 | 6551.5 | 7005.3 | 7271.9 | 7128.7 | 6624.2 | 6058.0 | 5485.3 | 5126.2 | 4930.1 | 4899.3 |
| 25° | 6641.8 | 6813.6 | 7393.0 | 7641.9 | 7364.4 | 6604.4 | 5859.8 | 5225.3 | 4817.8 | 4617.3 | 4595.3 |
| 27.5° | 6787.2 | 7003.1 | 7782.9 | 8020.8 | 7558.2 | 6492.0 | 5604.2 | 4941.2 | 4535.8 | 4346.4 | 4315.5 |
| 30° | 6954.6 | 7230.0 | 8212.5 | 8432.8 | 7677.2 | 6326.8 | 5331.1 | 4676.8 | 4273.7 | 4068.8 | 4046.8 |
| 32.5° | 7258.6 | 7604.5 | 8745.6 | 8869.0 | 7714.6 | 6121.9 | 5068.9 | 4421.3 | 4000.5 | 3795.6 | 3764.8 |
| 35° | 7747.7 | 8153.0 | 9494.6 | 9355.8 | 7686.0 | 5897.2 | 4820.0 | 4121.7 | 3720.7 | 3529.1 | 3498.2 |
| 37.5° | 8364.5 | 8869.0 | 10329.5 | 9794.2 | 7606.7 | 5650.5 | 4524.8 | 3870.5 | 3469.6 | 3275.7 | 3258.1 |
| 40° | 8939.5 | 9560.7 | 11265.8 | 10173.1 | 7445.9 | 5346.5 | 4240.6 | 3608.4 | 3198.6 | 2993.8 | 2954.1 |
| 42.5° | 9659.8 | 10485.9 | 12349.6 | 10501.3 | 7181.5 | 4983.0 | 3921.2 | 3284.6 | 2859.4 | 2674.3 | 2625.9 |
| 45° | 10754.7 | 11781.2 | 13609.7 | 10816.4 | 6787.2 | 4535.8 | 3520.3 | 2890.2 | 2487.1 | 2297.6 | 2260.2 |
| 47.5° | 12120.5 | 13400.4 | 14975.5 | 11003.6 | 6188.0 | 4064.4 | 3066.5 | 2473.9 | 2070.7 | 1857.1 | 1839.4 |
| 50° | 14039.2 | 15755.3 | 16440.4 | 10970.6 | 5518.3 | 3504.9 | 2555.4 | 1978.2 | 1641.2 | 1487.0 | 1462.7 |
| 52.5° | 16376.5 | 18711.6 | 18024.3 | 10574.0 | 4806.8 | 2868.2 | 1991.4 | 1553.1 | 1301.9 | 1191.8 | 1172.0 |
| 55° | 19308.6 | 22251.7 | 19691.9 | 9723.7 | 3908.0 | 2196.3 | 1564.1 | 1224.8 | 1053.0 | 986.9 | 978.1 |
| 57.5° | 22939.0 | 26836.0 | 21297.9 | 8291.8 | 2938.7 | 1676.4 | 1205.0 | 1011.1 | 929.6 | 890.0 | 887.8 |
| 60° | 27730.4 | 31702.3 | 22692.3 | 6443.6 | 2103.8 | 1282.1 | 995.7 | 903.2 | 839.3 | 812.9 | 810.7 |
| 62.5° | 33427.2 | 36121.3 | 23560.3 | 4388.2 | 1581.7 | 1022.2 | 876.8 | 819.5 | 782.0 | 766.6 | 764.4 |
| 65° | 39282.5 | 38914.6 | 23146.1 | 2874.8 | 1200.6 | 868.0 | 786.4 | 755.6 | 722.6 | 707.1 | 707.1 |
| 67.5° | 42741.1 | 38324.3 | 19967.3 | 1995.8 | 951.7 | 762.2 | 709.3 | 680.7 | 625.6 | 612.4 | 612.4 |
| 70° | 37857.2 | 31054.6 | 13087.6 | 1460.5 | 771.0 | 667.5 | 616.8 | 577.2 | 555.1 | 541.9 | 539.7 |
| 72.5° | 25038.4 | 20207.4 | 6959.0 | 1013.3 | 643.3 | 568.4 | 522.1 | 506.7 | 480.2 | 467.0 | 464.8 |
| 75° | 12461.9 | 10613.7 | 3566.5 | 731.4 | 535.3 | 456.0 | 436.2 | 429.6 | 407.5 | 389.9 | 385.5 |
| 77.5° | 5194.5 | 4725.3 | 1663.2 | 530.9 | 407.5 | 367.9 | 350.3 | 350.3 | 326.0 | 306.2 | 297.4 |
| 80° | 1958.4 | 1744.7 | 786.4 | 363.5 | 301.8 | 273.2 | 262.1 | 253.3 | 233.5 | 209.3 | 196.1 |
| 82.5° | 2619.3 | 1711.7 | 385.5 | 226.9 | 198.3 | 176.2 | 160.8 | 154.2 | 143.2 | 132.2 | 123.4 |
| 85° | 1696.3 | 1216.0 | 174.0 | 116.8 | 99.1 | 74.9 | 66.1 | 61.7 | 55.1 | 48.5 | 44.1 |
| 87.5° | 345.9 | 407.5 | 52.9 | 22.0 | 13.2 | 6.6 | 6.6 | 2.2 | 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: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-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-750-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): | 4884 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



Test Conditions
 Stabilization Time: 240M
 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 5000K 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

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TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)