

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: P637368

Luminaire Tested: GWS-SA4C-760-U-RW-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P637368
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-49)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA4C-760-U-RW-W
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: (64) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20160.6 lumens
Efficiency: N/A
Efficacy: 156.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B4 - U0 - G4

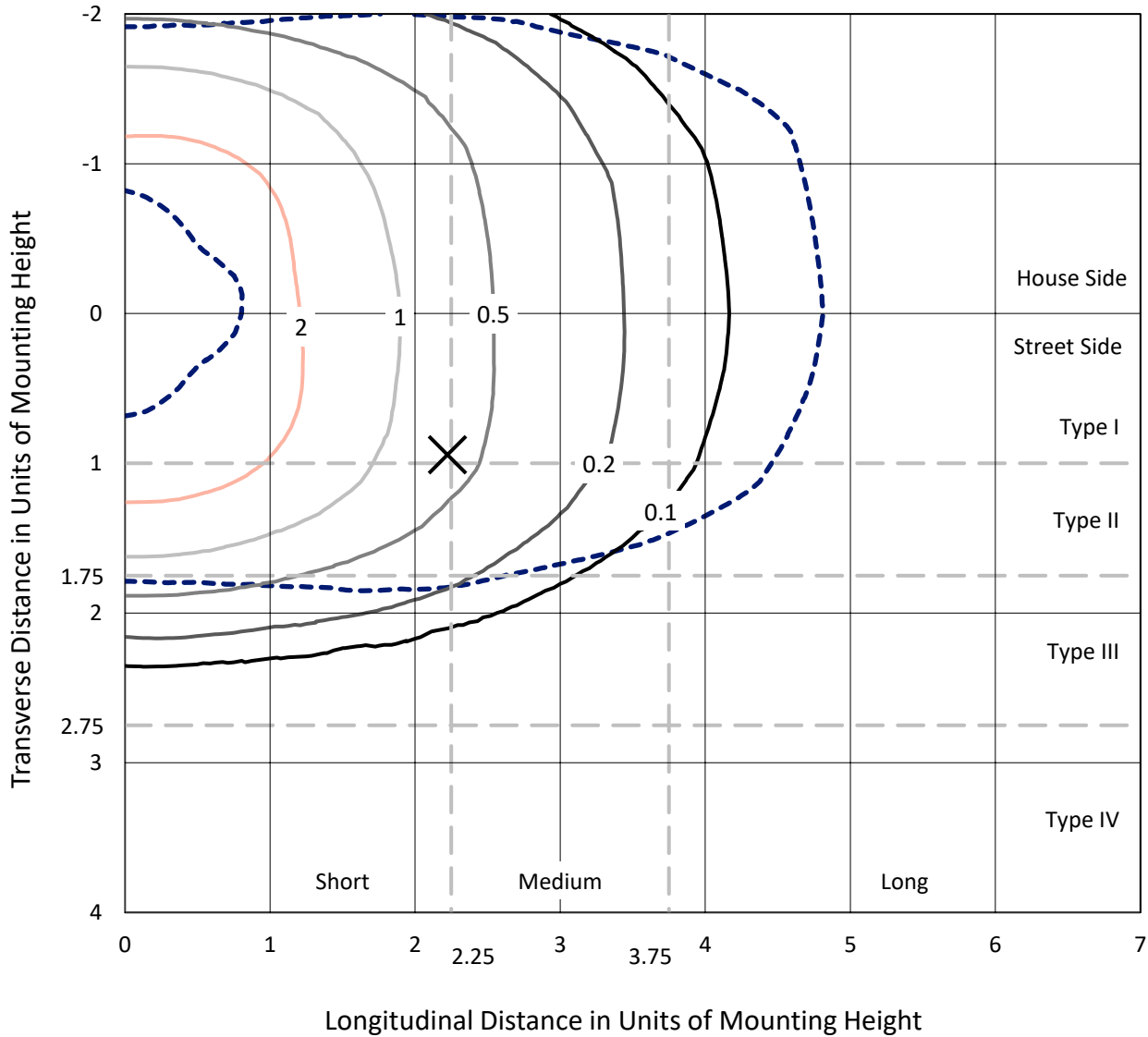
Input Watts (W): 128.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P637368
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Iso-Footcandle Lines of Horizontal Illumination

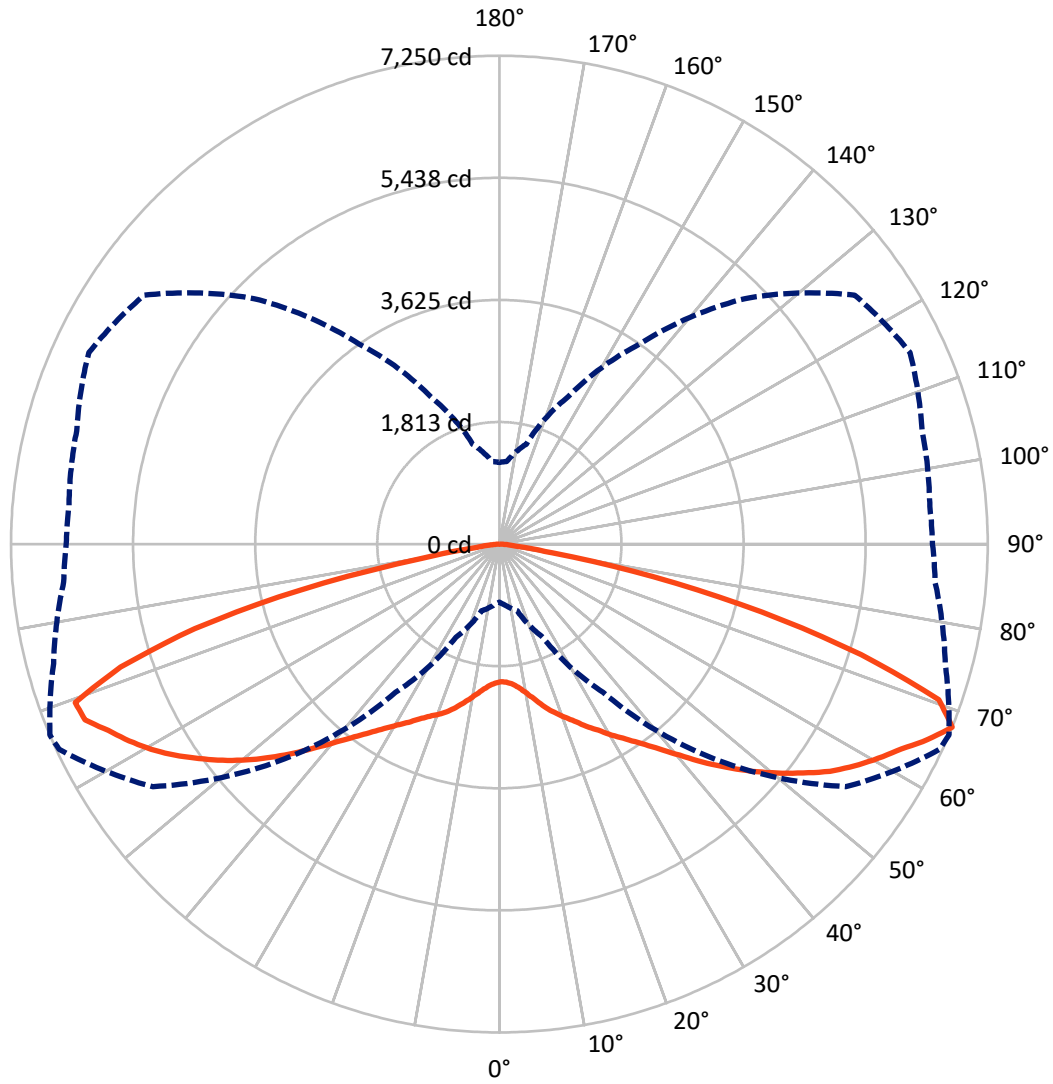
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.8 fc
 Type III - Short - N/A

REPORT NUMBER: P637368
CATALOG NUMBER: GWS-SA4C-760-U-RW-W

Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P637368

CATALOG NUMBER: GWS-SA4C-760-U-RW-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9969.0 | 0.0 | 9969.0 |
| | % Fixture | 49.4 | 0.0 | 49.4 |
| Street Side | Lumens | 10191.5 | 0.0 | 10191.5 |
| | % Fixture | 50.6 | 0.0 | 50.6 |
| Total | Lumens | 20160.6 | 0.0 | 20160.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 200.3 | 1.0 |
| 10°-20° | 676.6 | 3.4 |
| 20°-30° | 1327.6 | 6.6 |
| 30°-40° | 2261.7 | 11.2 |
| 40°-50° | 3631.9 | 18.0 |
| 50°-60° | 4934.9 | 24.5 |
| 60°-70° | 4720.6 | 23.4 |
| 70°-80° | 2244.3 | 11.1 |
| 80°-90° | 162.6 | 0.8 |
| 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° | 20160.6 | 100.0 |
| 0°-180° | 20160.6 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P637368

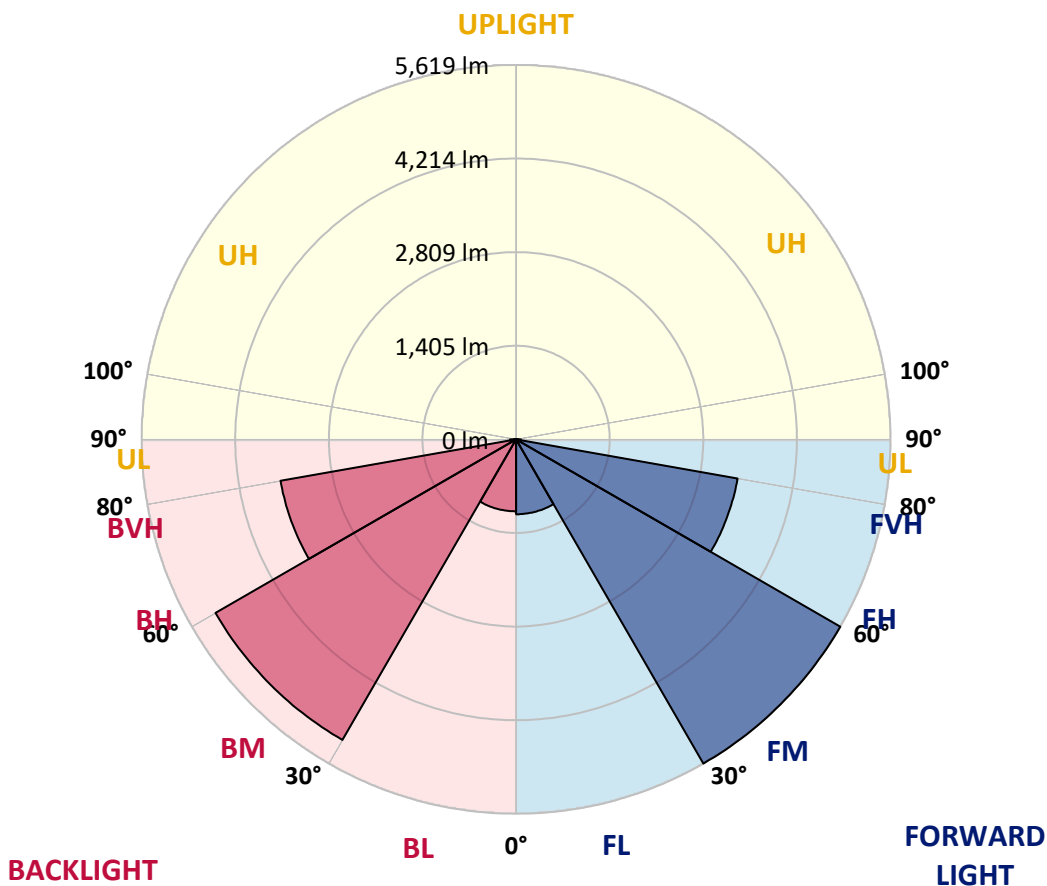
CATALOG NUMBER: GWS-SA4C-760-U-RW-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1124.1 | 5.6 | | | |
| FM (30°-60°) | 5618.9 | 27.9 | | | |
| FH (60°-80°) | 3375.4 | 16.7 | | | G2/5000 |
| FVH (80°-90°) | 73.1 | 0.4 | | | G1/100 |
| BL (0°-30°) | 1080.4 | 5.4 | B3/2500 | | |
| BM (30°-60°) | 5209.6 | 25.8 | B4/8500 | | |
| BH (60°-80°) | 3589.6 | 17.8 | B4/5000 | | G4/5000 |
| BVH (80°-90°) | 89.5 | 0.4 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 </tr | | | |

BUG Rating: B4-U0-G4

Type III Short





REPORT NUMBER: P637368
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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 |
| 2.5° | 1999.3 | 2002.1 | 2006.3 | 2014.7 | 2023.1 | 2035.8 | 2048.4 | 2047.0 | 2052.6 | 2056.8 | 2061.0 |
| 5° | 1988.0 | 1990.8 | 1997.9 | 2009.1 | 2021.7 | 2042.8 | 2069.5 | 2080.7 | 2089.1 | 2104.6 | 2118.6 |
| 7.5° | 2011.9 | 2017.5 | 2027.3 | 2042.8 | 2062.4 | 2089.1 | 2125.6 | 2145.3 | 2157.9 | 2186.0 | 2209.8 |
| 10° | 2044.2 | 2051.2 | 2070.9 | 2100.3 | 2129.8 | 2170.5 | 2216.9 | 2246.4 | 2254.8 | 2291.3 | 2336.2 |
| 12.5° | 2075.1 | 2083.5 | 2115.8 | 2169.1 | 2222.5 | 2277.2 | 2332.0 | 2368.5 | 2371.3 | 2420.4 | 2471.0 |
| 15° | 2124.2 | 2131.2 | 2174.8 | 2243.5 | 2325.0 | 2400.8 | 2468.2 | 2493.5 | 2504.7 | 2539.8 | 2603.0 |
| 17.5° | 2232.3 | 2240.7 | 2296.9 | 2371.3 | 2456.9 | 2537.0 | 2604.4 | 2625.4 | 2625.4 | 2654.9 | 2706.9 |
| 20° | 2348.8 | 2357.3 | 2431.7 | 2527.1 | 2631.0 | 2712.5 | 2764.4 | 2744.8 | 2737.7 | 2746.2 | 2782.7 |
| 22.5° | 2479.4 | 2494.9 | 2566.5 | 2677.4 | 2805.1 | 2904.8 | 2931.5 | 2872.5 | 2852.9 | 2833.2 | 2841.6 |
| 25° | 2646.5 | 2664.7 | 2734.9 | 2852.9 | 2977.8 | 3083.1 | 3098.6 | 3007.3 | 2996.1 | 2927.3 | 2902.0 |
| 27.5° | 2838.8 | 2852.9 | 2939.9 | 3056.4 | 3173.0 | 3261.4 | 3278.3 | 3166.0 | 3128.0 | 3032.6 | 2973.6 |
| 30° | 3087.3 | 3100.0 | 3175.8 | 3290.9 | 3392.0 | 3453.8 | 3474.8 | 3320.4 | 3290.9 | 3144.9 | 3053.6 |
| 32.5° | 3358.3 | 3363.9 | 3441.1 | 3552.0 | 3641.9 | 3700.9 | 3671.4 | 3491.7 | 3448.2 | 3283.9 | 3158.9 |
| 35° | 3668.6 | 3668.6 | 3768.3 | 3858.1 | 3929.7 | 3946.6 | 3890.4 | 3685.4 | 3634.9 | 3456.6 | 3300.7 |
| 37.5° | 3973.2 | 3981.7 | 4074.3 | 4181.0 | 4244.2 | 4241.4 | 4138.9 | 3914.3 | 3856.7 | 3663.0 | 3490.3 |
| 40° | 4303.2 | 4321.4 | 4414.1 | 4533.4 | 4593.8 | 4585.4 | 4428.1 | 4178.2 | 4119.2 | 3890.4 | 3721.9 |
| 42.5° | 4606.4 | 4635.9 | 4744.0 | 4866.2 | 4932.1 | 4926.5 | 4762.3 | 4481.5 | 4423.9 | 4165.6 | 3997.1 |
| 45° | 4847.9 | 4878.8 | 5013.6 | 5183.5 | 5288.8 | 5278.9 | 5113.3 | 4796.0 | 4725.8 | 4454.8 | 4269.5 |
| 47.5° | 5059.9 | 5092.2 | 5242.4 | 5422.1 | 5589.2 | 5606.1 | 5454.4 | 5113.3 | 5038.9 | 4765.1 | 4555.9 |
| 50° | 5222.8 | 5238.2 | 5406.7 | 5603.2 | 5797.0 | 5891.1 | 5759.1 | 5432.0 | 5342.1 | 5071.1 | 4835.3 |
| 52.5° | 5210.1 | 5231.2 | 5439.0 | 5705.7 | 5965.5 | 6119.9 | 6028.6 | 5732.4 | 5645.4 | 5350.5 | 5120.3 |
| 55° | 4953.2 | 4974.3 | 5221.4 | 5610.3 | 6059.5 | 6287.0 | 6277.2 | 6018.8 | 5955.6 | 5635.5 | 5416.5 |
| 57.5° | 4578.3 | 4624.7 | 4870.4 | 5290.2 | 5936.0 | 6420.4 | 6459.7 | 6280.0 | 6214.0 | 5914.9 | 5709.9 |
| 60° | 3907.2 | 3969.0 | 4252.6 | 4797.4 | 5540.1 | 6375.4 | 6654.8 | 6500.4 | 6459.7 | 6174.7 | 5975.3 |
| 62.5° | 2838.8 | 2883.8 | 3261.4 | 3976.0 | 4953.2 | 6055.3 | 6819.1 | 6727.8 | 6696.9 | 6407.7 | 6215.4 |
| 65° | 1700.2 | 1802.7 | 2106.0 | 2812.2 | 3995.7 | 5451.6 | 6729.2 | 7025.5 | 6993.2 | 6647.8 | 6420.4 |
| 67.5° | 860.6 | 907.0 | 1026.3 | 1524.7 | 2687.2 | 4511.0 | 6278.6 | 7210.8 | 7250.1 | 6852.8 | 6493.4 |
| 70° | 533.5 | 546.1 | 579.8 | 752.5 | 1342.2 | 2963.8 | 5134.3 | 6727.8 | 6920.2 | 6820.5 | 6303.8 |
| 72.5° | 428.2 | 431.0 | 436.6 | 468.9 | 644.4 | 1385.7 | 3246.0 | 5269.1 | 5615.9 | 6369.8 | 6032.9 |
| 75° | 355.2 | 356.6 | 358.0 | 367.8 | 401.5 | 565.8 | 1579.5 | 3620.8 | 4026.6 | 5413.7 | 5593.4 |
| 77.5° | 285.0 | 278.0 | 283.6 | 287.8 | 296.2 | 315.9 | 544.7 | 1931.9 | 2343.2 | 3553.4 | 4325.6 |
| 80° | 185.3 | 182.5 | 193.7 | 198.0 | 206.4 | 219.0 | 290.6 | 655.7 | 796.1 | 1293.1 | 1375.9 |
| 82.5° | 99.7 | 94.1 | 117.9 | 113.7 | 117.9 | 127.8 | 171.3 | 240.1 | 269.6 | 390.3 | 329.9 |
| 85° | 30.9 | 30.9 | 32.3 | 37.9 | 46.3 | 44.9 | 74.4 | 117.9 | 130.6 | 167.1 | 123.5 |
| 87.5° | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 7.0 | 15.4 | 23.9 | 32.3 | 57.6 | 43.5 |
| 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: P637368
 CATALOG NUMBER: GWS-SA4C-760-U-RW-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 | 2041.4 |
| 2.5° | 2069.5 | 2056.8 | 2063.8 | 2068.0 | 2066.6 | 2063.8 | 2049.8 | 2047.0 | 2040.0 | 2028.7 | 2025.9 |
| 5° | 2131.2 | 2117.2 | 2118.6 | 2114.4 | 2100.3 | 2082.1 | 2051.2 | 2035.8 | 2023.1 | 2009.1 | 2007.7 |
| 7.5° | 2228.1 | 2212.7 | 2208.4 | 2188.8 | 2149.5 | 2107.4 | 2058.2 | 2030.1 | 2009.1 | 1990.8 | 1988.0 |
| 10° | 2351.7 | 2336.2 | 2322.2 | 2275.8 | 2211.3 | 2155.1 | 2090.5 | 2049.8 | 2018.9 | 1996.4 | 1992.2 |
| 12.5° | 2489.2 | 2476.6 | 2441.5 | 2374.1 | 2296.9 | 2230.9 | 2164.9 | 2114.4 | 2069.5 | 2035.8 | 2031.5 |
| 15° | 2642.3 | 2614.2 | 2560.8 | 2473.8 | 2400.8 | 2347.4 | 2267.4 | 2198.6 | 2127.0 | 2082.1 | 2072.3 |
| 17.5° | 2749.0 | 2725.1 | 2661.9 | 2577.7 | 2520.1 | 2473.8 | 2379.7 | 2281.5 | 2184.6 | 2118.6 | 2104.6 |
| 20° | 2824.8 | 2799.5 | 2727.9 | 2666.1 | 2647.9 | 2608.6 | 2499.1 | 2385.3 | 2273.0 | 2191.6 | 2173.3 |
| 22.5° | 2879.5 | 2852.9 | 2779.9 | 2749.0 | 2774.2 | 2767.2 | 2660.5 | 2531.4 | 2398.0 | 2301.1 | 2278.6 |
| 25° | 2931.5 | 2906.2 | 2841.6 | 2852.9 | 2920.3 | 2941.3 | 2826.2 | 2676.0 | 2524.3 | 2410.6 | 2383.9 |
| 27.5° | 2980.6 | 2948.3 | 2918.9 | 2980.6 | 3076.1 | 3115.4 | 2993.3 | 2823.4 | 2659.1 | 2542.6 | 2521.5 |
| 30° | 3056.4 | 3018.5 | 3014.3 | 3104.2 | 3255.8 | 3289.5 | 3154.7 | 2984.8 | 2822.0 | 2704.0 | 2677.4 |
| 32.5° | 3151.9 | 3116.8 | 3119.6 | 3254.4 | 3429.9 | 3458.0 | 3342.9 | 3184.2 | 3021.3 | 2903.4 | 2866.9 |
| 35° | 3281.1 | 3237.6 | 3261.4 | 3427.1 | 3604.0 | 3655.9 | 3563.3 | 3431.3 | 3272.7 | 3151.9 | 3111.2 |
| 37.5° | 3459.4 | 3396.2 | 3445.3 | 3619.4 | 3797.7 | 3875.0 | 3803.4 | 3705.1 | 3547.8 | 3425.7 | 3387.8 |
| 40° | 3686.8 | 3634.9 | 3654.5 | 3846.9 | 4030.8 | 4123.5 | 4078.5 | 3981.7 | 3825.8 | 3698.1 | 3654.5 |
| 42.5° | 3956.4 | 3904.4 | 3897.4 | 4102.4 | 4286.3 | 4426.7 | 4383.2 | 4294.7 | 4133.3 | 3987.3 | 3945.2 |
| 45° | 4220.3 | 4172.6 | 4182.4 | 4391.6 | 4598.0 | 4751.0 | 4707.5 | 4603.6 | 4428.1 | 4259.6 | 4226.0 |
| 47.5° | 4495.5 | 4456.2 | 4464.6 | 4686.5 | 4913.9 | 5066.9 | 5012.2 | 4885.8 | 4680.8 | 4501.1 | 4460.4 |
| 50° | 4777.7 | 4732.8 | 4745.4 | 4978.5 | 5224.2 | 5368.8 | 5284.5 | 5097.8 | 4871.8 | 4696.3 | 4661.2 |
| 52.5° | 5058.5 | 5005.2 | 5037.4 | 5257.9 | 5512.0 | 5627.1 | 5471.3 | 5245.2 | 5026.2 | 4852.1 | 4812.8 |
| 55° | 5381.4 | 5325.3 | 5290.2 | 5526.0 | 5777.3 | 5825.1 | 5611.7 | 5347.7 | 5088.0 | 4890.0 | 4866.2 |
| 57.5° | 5676.3 | 5628.5 | 5562.5 | 5798.4 | 5983.7 | 5948.6 | 5719.8 | 5319.6 | 4937.8 | 4683.6 | 4650.0 |
| 60° | 5940.2 | 5899.5 | 5841.9 | 6042.7 | 6126.9 | 6048.3 | 5632.7 | 4986.9 | 4567.1 | 4301.8 | 4286.3 |
| 62.5° | 6183.1 | 6139.6 | 6086.2 | 6257.5 | 6246.3 | 6063.7 | 5236.8 | 4475.9 | 3914.3 | 3629.3 | 3604.0 |
| 65° | 6375.4 | 6336.1 | 6320.7 | 6455.5 | 6437.2 | 5761.9 | 4620.5 | 3639.1 | 2859.9 | 2538.4 | 2528.6 |
| 67.5° | 6430.2 | 6414.7 | 6497.6 | 6726.4 | 6441.4 | 5155.4 | 3623.6 | 2413.4 | 1535.9 | 1231.3 | 1213.0 |
| 70° | 6225.2 | 6223.8 | 6461.1 | 6788.2 | 5857.4 | 3938.1 | 2138.2 | 1088.1 | 772.2 | 685.1 | 673.9 |
| 72.5° | 5958.5 | 5954.2 | 6142.4 | 5856.0 | 4343.9 | 2155.1 | 899.9 | 582.6 | 483.0 | 459.1 | 459.1 |
| 75° | 5520.4 | 5509.2 | 5651.0 | 4454.8 | 2442.9 | 811.5 | 477.3 | 400.1 | 379.1 | 374.9 | 374.9 |
| 77.5° | 4499.7 | 4405.7 | 4182.4 | 2753.2 | 852.2 | 398.7 | 315.9 | 314.5 | 301.9 | 300.4 | 300.4 |
| 80° | 1479.8 | 1479.8 | 1719.9 | 1050.2 | 376.3 | 245.7 | 223.2 | 234.5 | 221.8 | 213.4 | 212.0 |
| 82.5° | 241.5 | 332.7 | 473.1 | 300.4 | 203.6 | 153.0 | 137.6 | 146.0 | 153.0 | 122.1 | 122.1 |
| 85° | 95.5 | 125.0 | 182.5 | 140.4 | 94.1 | 61.8 | 66.0 | 73.0 | 64.6 | 56.2 | 54.8 |
| 87.5° | 36.5 | 44.9 | 64.6 | 33.7 | 19.7 | 11.2 | 7.0 | 7.0 | 5.6 | 5.6 | 5.6 |
| 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: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

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

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-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-760-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): 5474
 CIE u': 0.2052
 CIE v': 0.4804
 Duv: 0.0025
 CIE x: 0.3330
 CIE y: 0.3466
 CIE z: 0.3204
 Peak Wavelength (nm): 442
 Dominant Wavelength (nm): 554
 Purity: 4.1

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 70.6 | R9: | -27.1 |
| R2: | 74.6 | R10: | 40.8 |
| R3: | 78.3 | R11: | 74.6 |
| R4: | 73.8 | R12: | 50.4 |
| R5: | 72.4 | R13: | 70.0 |
| R6: | 67.5 | R14: | 87.8 |
| R7: | 77.5 | | |
| R8: | 58.9 | | |

Rf: 72.1
 Rg: 97.2



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-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 5700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-9-R4

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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-1908-441-9-R4

TM-30-18

Measure Comparisons



(END OF REPORT)