

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: P636156

Luminaire Tested: GWS-SA3F-730-U-RW-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P636156
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-50)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3F-730-U-RW-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (48) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14430.5 lumens
Efficiency: N/A
Efficacy: 78.8 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G0

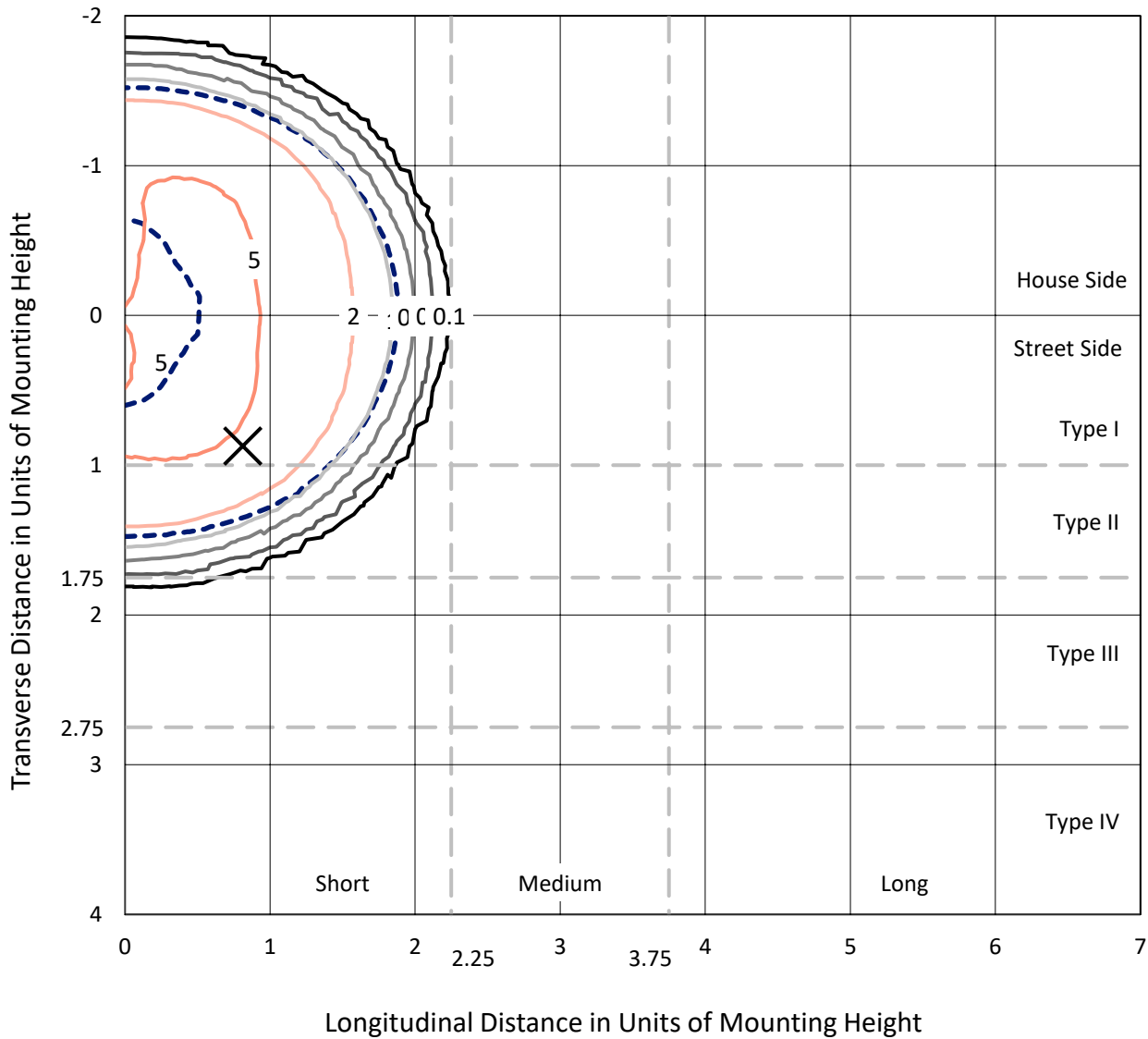
Input Watts (W): 183.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P636156
 CATALOG NUMBER: GWS-SA3F-730-U-RW-W-GRSBK

Iso-Footcandle Lines of Horizontal Illumination

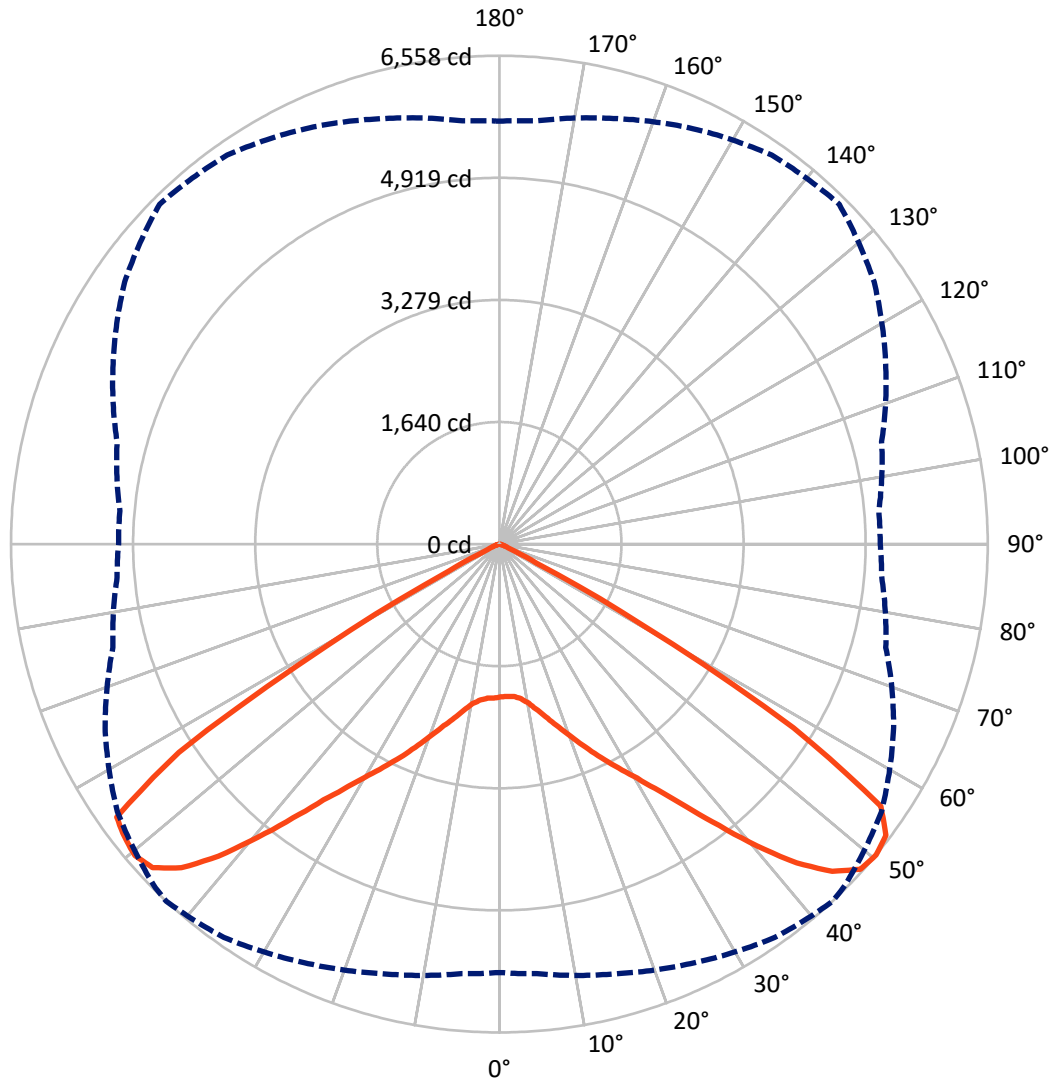
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.1 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 43-Deg Lateral - - - Horizontal Cone Through 50-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7215.1 | 0.0 | 7215.1 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 7215.4 | 0.0 | 7215.4 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 14430.5 | 0.0 | 14430.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 202.1 | 1.4 |
| 10°-20° | 695.6 | 4.8 |
| 20°-30° | 1407.3 | 9.8 |
| 30°-40° | 2610.9 | 18.1 |
| 40°-50° | 4334.0 | 30.0 |
| 50°-60° | 4423.0 | 30.7 |
| 60°-70° | 725.3 | 5.0 |
| 70°-80° | 31.8 | 0.2 |
| 80°-90° | 0.4 | 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° | 14430.5 | 100.0 |
| 0°-180° | 14430.5 | 100.0 |

Coefficient of Utilization

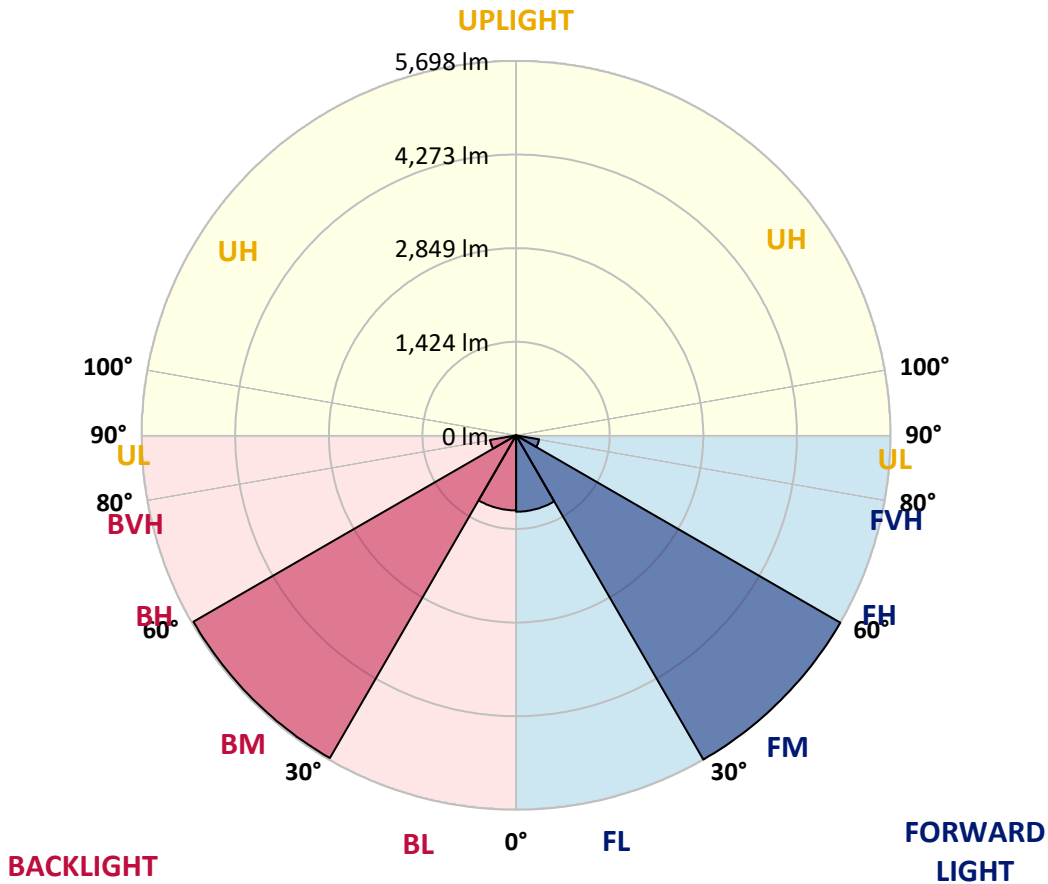


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 1162.6 | 8.1 | | | |
| FM (30°-60°) | 5697.9 | 39.5 | | | |
| FH (60°-80°) | 354.8 | 2.5 | | | G0/660 |
| FVH (80°-90°) | 0.2 | 0.0 | | | G0/10 |
| BL (0°-30°) | 1142.4 | 7.9 | B3/2500 | | |
| BM (30°-60°) | 5670.2 | 39.3 | B4/8500 | | |
| BH (60°-80°) | 402.3 | 2.8 | B1/500 | | G0/660 |
| BVH (80°-90°) | 0.3 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G0
 Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 43° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 |
| 2.5° | 2014.2 | 2019.0 | 2025.4 | 2031.8 | 2039.7 | 2047.7 | 2052.5 | 2066.9 | 2063.7 | 2076.5 | 2076.5 |
| 5° | 1991.9 | 1996.6 | 2004.6 | 2019.0 | 2036.5 | 2054.1 | 2066.9 | 2095.6 | 2111.6 | 2137.1 | 2146.7 |
| 7.5° | 2003.0 | 2009.4 | 2019.0 | 2041.3 | 2068.5 | 2095.6 | 2110.0 | 2156.3 | 2188.2 | 2236.1 | 2263.2 |
| 10° | 2039.7 | 2046.1 | 2062.1 | 2100.4 | 2135.5 | 2173.8 | 2191.4 | 2250.4 | 2301.5 | 2366.9 | 2405.2 |
| 12.5° | 2081.2 | 2089.2 | 2121.1 | 2178.6 | 2239.2 | 2290.3 | 2314.3 | 2379.7 | 2432.4 | 2505.8 | 2566.4 |
| 15° | 2124.3 | 2137.1 | 2186.6 | 2271.2 | 2357.4 | 2426.0 | 2451.5 | 2521.7 | 2574.4 | 2652.6 | 2721.3 |
| 17.5° | 2224.9 | 2239.2 | 2295.1 | 2386.1 | 2504.2 | 2584.0 | 2606.3 | 2679.8 | 2719.7 | 2772.3 | 2844.1 |
| 20° | 2351.0 | 2378.1 | 2446.7 | 2556.9 | 2686.1 | 2762.7 | 2778.7 | 2850.5 | 2847.3 | 2869.7 | 2931.9 |
| 22.5° | 2507.4 | 2526.5 | 2601.5 | 2732.4 | 2877.7 | 2962.3 | 2999.0 | 3029.3 | 2989.4 | 2970.2 | 3010.1 |
| 25° | 2670.2 | 2692.5 | 2773.9 | 2917.6 | 3080.4 | 3177.7 | 3208.0 | 3232.0 | 3168.1 | 3096.3 | 3101.1 |
| 27.5° | 2880.9 | 2896.8 | 2976.6 | 3129.8 | 3292.6 | 3402.8 | 3429.9 | 3471.4 | 3386.8 | 3271.9 | 3240.0 |
| 30° | 3131.4 | 3147.4 | 3232.0 | 3393.2 | 3554.4 | 3648.6 | 3690.0 | 3741.1 | 3648.6 | 3504.9 | 3468.2 |
| 32.5° | 3425.1 | 3441.1 | 3549.6 | 3715.6 | 3848.1 | 3950.2 | 3990.1 | 4044.4 | 3971.0 | 3809.8 | 3768.3 |
| 35° | 3776.2 | 3785.8 | 3913.5 | 4093.8 | 4234.3 | 4333.3 | 4360.4 | 4424.2 | 4342.8 | 4181.6 | 4159.3 |
| 37.5° | 4183.2 | 4194.4 | 4333.3 | 4542.3 | 4686.0 | 4796.1 | 4839.2 | 4856.8 | 4757.8 | 4577.4 | 4559.9 |
| 40° | 4630.1 | 4666.8 | 4802.5 | 5027.5 | 5188.7 | 5327.6 | 5365.9 | 5306.8 | 5168.0 | 4922.2 | 4890.3 |
| 42.5° | 5096.2 | 5128.1 | 5279.7 | 5523.9 | 5710.6 | 5852.7 | 5854.3 | 5726.6 | 5490.4 | 5150.4 | 5102.5 |
| 45° | 5484.0 | 5496.8 | 5693.1 | 5938.9 | 6168.7 | 6269.3 | 6278.8 | 6047.4 | 5691.5 | 5282.9 | 5180.8 |
| 47.5° | 5750.5 | 5771.3 | 5942.1 | 6178.3 | 6432.1 | 6523.0 | 6503.9 | 6215.0 | 5787.2 | 5369.1 | 5199.9 |
| 50° | 5753.7 | 5788.8 | 5974.0 | 6202.2 | 6448.0 | 6558.1 | 6531.0 | 6262.9 | 5841.5 | 5372.3 | 5153.6 |
| 52.5° | 5244.6 | 5302.1 | 5603.7 | 5934.1 | 6310.8 | 6499.1 | 6505.5 | 6325.1 | 5820.8 | 5321.2 | 5112.1 |
| 55° | 3956.6 | 4018.8 | 4398.7 | 4962.1 | 5689.9 | 6215.0 | 6306.0 | 6251.7 | 5796.8 | 5343.5 | 5185.5 |
| 57.5° | 2094.0 | 2046.1 | 2256.8 | 2815.4 | 3730.0 | 4658.8 | 4925.4 | 5359.5 | 5530.3 | 5370.7 | 5321.2 |
| 60° | 456.5 | 486.8 | 648.0 | 873.0 | 1455.6 | 2191.4 | 2451.5 | 3195.3 | 4079.5 | 4472.1 | 4756.2 |
| 62.5° | 196.3 | 193.1 | 201.1 | 228.2 | 333.6 | 555.4 | 678.3 | 1107.7 | 1747.7 | 2400.4 | 2842.6 |
| 65° | 161.2 | 162.8 | 169.2 | 169.2 | 158.0 | 159.6 | 167.6 | 253.8 | 408.6 | 573.0 | 769.3 |
| 67.5° | 121.3 | 122.9 | 134.1 | 137.3 | 129.3 | 114.9 | 113.3 | 95.8 | 100.6 | 126.1 | 130.9 |
| 70° | 76.6 | 76.6 | 83.0 | 86.2 | 86.2 | 79.8 | 78.2 | 68.6 | 67.0 | 76.6 | 86.2 |
| 72.5° | 41.5 | 41.5 | 44.7 | 46.3 | 44.7 | 43.1 | 43.1 | 41.5 | 39.9 | 46.3 | 59.1 |
| 75° | 17.6 | 17.6 | 19.2 | 19.2 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 20.7 | 31.9 |
| 77.5° | 3.2 | 4.8 | 6.4 | 4.8 | 3.2 | 3.2 | 3.2 | 4.8 | 4.8 | 6.4 | 9.6 |
| 80° | 1.6 | 1.6 | 3.2 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 | 1.6 |
| 82.5° | 1.6 | 1.6 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 |
| 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: P636156

CATALOG NUMBER: GWS-SA3F-730-U-RW-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 | 2052.5 |
| 2.5° | 2087.6 | 2070.1 | 2076.5 | 2079.6 | 2074.9 | 2071.7 | 2054.1 | 2049.3 | 2041.3 | 2028.6 | 2025.4 |
| 5° | 2157.8 | 2143.5 | 2141.9 | 2132.3 | 2110.0 | 2082.8 | 2049.3 | 2035.0 | 2019.0 | 2003.0 | 1999.8 |
| 7.5° | 2276.0 | 2258.4 | 2247.2 | 2215.3 | 2164.2 | 2121.1 | 2065.3 | 2035.0 | 2014.2 | 1993.5 | 1988.7 |
| 10° | 2427.6 | 2406.8 | 2374.9 | 2315.9 | 2247.2 | 2185.0 | 2119.5 | 2079.6 | 2047.7 | 2019.0 | 2017.4 |
| 12.5° | 2588.8 | 2566.4 | 2509.0 | 2434.0 | 2351.0 | 2293.5 | 2210.5 | 2154.7 | 2106.8 | 2063.7 | 2058.9 |
| 15° | 2758.0 | 2730.8 | 2652.6 | 2563.2 | 2486.6 | 2427.6 | 2336.6 | 2247.2 | 2173.8 | 2111.6 | 2105.2 |
| 17.5° | 2887.2 | 2853.7 | 2761.2 | 2694.1 | 2631.9 | 2571.2 | 2469.1 | 2351.0 | 2253.6 | 2178.6 | 2161.0 |
| 20° | 2968.6 | 2936.7 | 2848.9 | 2812.2 | 2783.5 | 2740.4 | 2619.1 | 2496.2 | 2387.7 | 2295.1 | 2279.1 |
| 22.5° | 3046.8 | 3008.5 | 2931.9 | 2931.9 | 2954.3 | 2936.7 | 2805.8 | 2665.4 | 2537.7 | 2430.8 | 2406.8 |
| 25° | 3134.6 | 3104.3 | 3050.0 | 3094.7 | 3150.6 | 3149.0 | 3014.9 | 2839.4 | 2692.5 | 2572.8 | 2548.9 |
| 27.5° | 3262.3 | 3232.0 | 3212.8 | 3297.4 | 3367.6 | 3362.9 | 3216.0 | 3026.1 | 2871.3 | 2753.2 | 2730.8 |
| 30° | 3487.4 | 3458.6 | 3437.9 | 3540.0 | 3629.4 | 3595.9 | 3434.7 | 3251.1 | 3094.7 | 2960.7 | 2944.7 |
| 32.5° | 3787.4 | 3757.1 | 3730.0 | 3832.1 | 3911.9 | 3868.8 | 3715.6 | 3543.2 | 3362.9 | 3232.0 | 3200.1 |
| 35° | 4181.6 | 4117.8 | 4090.7 | 4212.0 | 4245.5 | 4197.6 | 4050.8 | 3899.1 | 3707.6 | 3557.6 | 3536.8 |
| 37.5° | 4588.6 | 4513.6 | 4494.5 | 4599.8 | 4654.1 | 4636.5 | 4464.1 | 4306.1 | 4098.6 | 3932.6 | 3908.7 |
| 40° | 4936.6 | 4867.9 | 4834.4 | 4998.8 | 5121.7 | 5132.9 | 4978.1 | 4784.9 | 4540.7 | 4368.4 | 4325.3 |
| 42.5° | 5140.9 | 5081.8 | 5073.8 | 5329.2 | 5530.3 | 5673.9 | 5488.8 | 5289.3 | 5032.3 | 4837.6 | 4802.5 |
| 45° | 5187.1 | 5148.8 | 5215.9 | 5551.0 | 5863.9 | 6125.6 | 5967.6 | 5756.9 | 5479.2 | 5273.3 | 5239.8 |
| 47.5° | 5182.3 | 5169.6 | 5289.3 | 5666.0 | 6061.8 | 6384.2 | 6306.0 | 6068.2 | 5800.0 | 5584.6 | 5552.6 |
| 50° | 5113.7 | 5115.3 | 5314.8 | 5723.4 | 6141.6 | 6454.4 | 6376.2 | 6155.9 | 5916.5 | 5704.3 | 5678.7 |
| 52.5° | 5086.6 | 5077.0 | 5266.9 | 5705.9 | 6223.0 | 6422.5 | 6246.9 | 5999.5 | 5733.0 | 5471.2 | 5432.9 |
| 55° | 5182.3 | 5158.4 | 5273.3 | 5691.5 | 6232.5 | 6404.9 | 5942.1 | 5405.8 | 4859.9 | 4550.3 | 4524.8 |
| 57.5° | 5326.0 | 5300.5 | 5354.7 | 5586.1 | 5733.0 | 5326.0 | 4373.2 | 3508.1 | 2946.3 | 2708.5 | 2604.7 |
| 60° | 4756.2 | 4738.6 | 4697.2 | 4417.8 | 3789.0 | 2858.5 | 1947.2 | 1241.7 | 892.2 | 721.4 | 721.4 |
| 62.5° | 2951.1 | 2927.1 | 2702.1 | 2007.8 | 1458.8 | 844.3 | 464.4 | 290.5 | 220.3 | 205.9 | 204.3 |
| 65° | 828.3 | 823.6 | 681.5 | 482.0 | 306.4 | 189.9 | 167.6 | 170.8 | 167.6 | 162.8 | 161.2 |
| 67.5° | 124.5 | 137.3 | 137.3 | 111.7 | 106.9 | 119.7 | 140.5 | 150.0 | 142.0 | 134.1 | 130.9 |
| 70° | 79.8 | 86.2 | 83.0 | 71.8 | 76.6 | 89.4 | 100.6 | 102.1 | 97.4 | 89.4 | 87.8 |
| 72.5° | 55.9 | 62.2 | 51.1 | 46.3 | 47.9 | 52.7 | 57.5 | 57.5 | 55.9 | 52.7 | 49.5 |
| 75° | 33.5 | 33.5 | 23.9 | 22.3 | 22.3 | 23.9 | 23.9 | 27.1 | 27.1 | 25.5 | 23.9 |
| 77.5° | 11.2 | 12.8 | 8.0 | 6.4 | 6.4 | 6.4 | 8.0 | 9.6 | 9.6 | 8.0 | 6.4 |
| 80° | 1.6 | 3.2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 3.2 | 3.2 | 1.6 |
| 82.5° | 1.6 | 1.6 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 | 1.6 | 1.6 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 |
| 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: SP1-1908-441-2-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

REPORT NUMBER: SP1-1908-441-2-R4

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)