

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: P634021

Luminaire Tested: GWS-SA2F-830-U-SL3-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P634021
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-31)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA2F-830-U-SL3-W
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS
Light Source: (32) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12627 lumens
Efficiency: N/A
Efficacy: 101.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G2

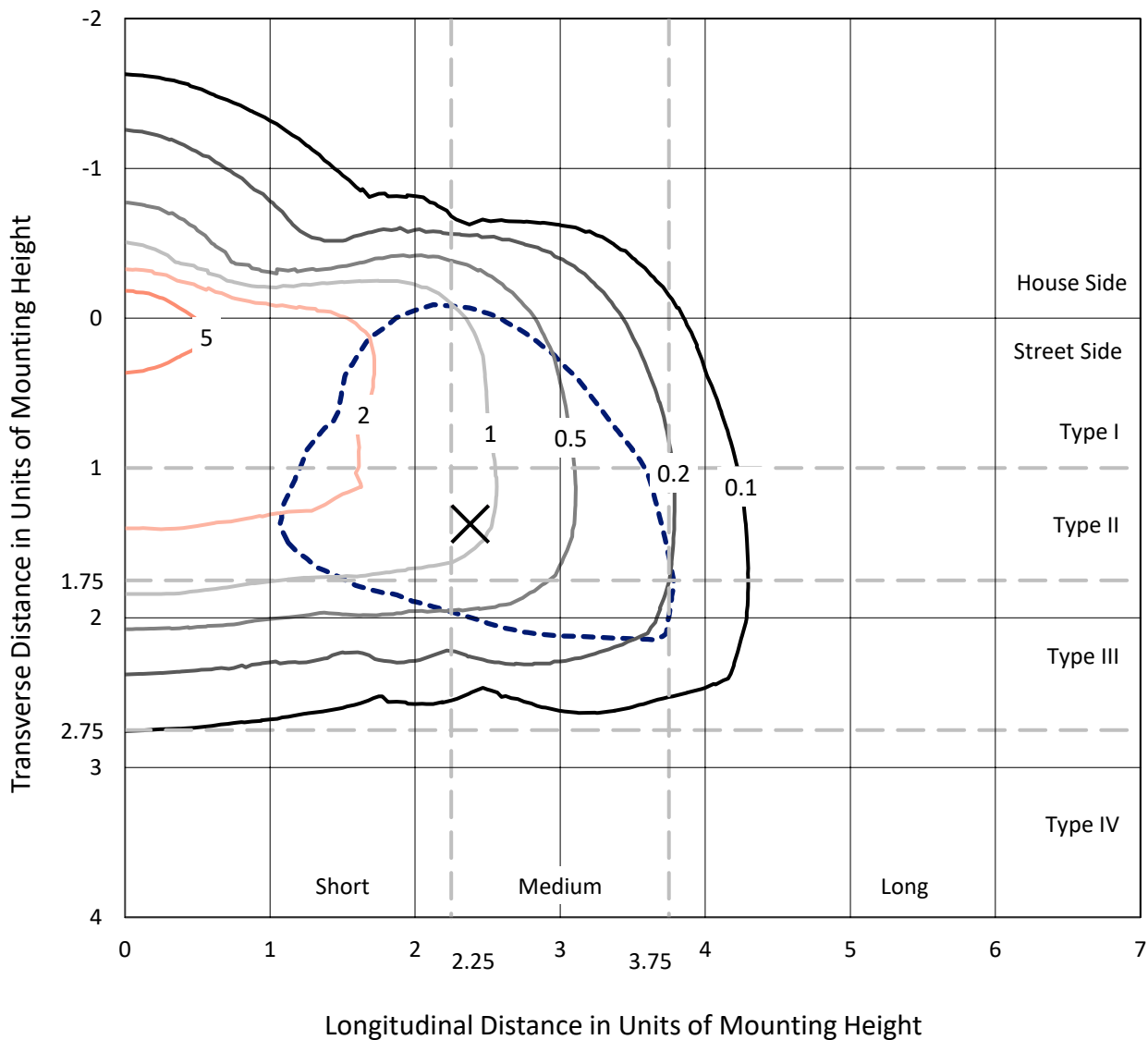
Input Watts (W): 124.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

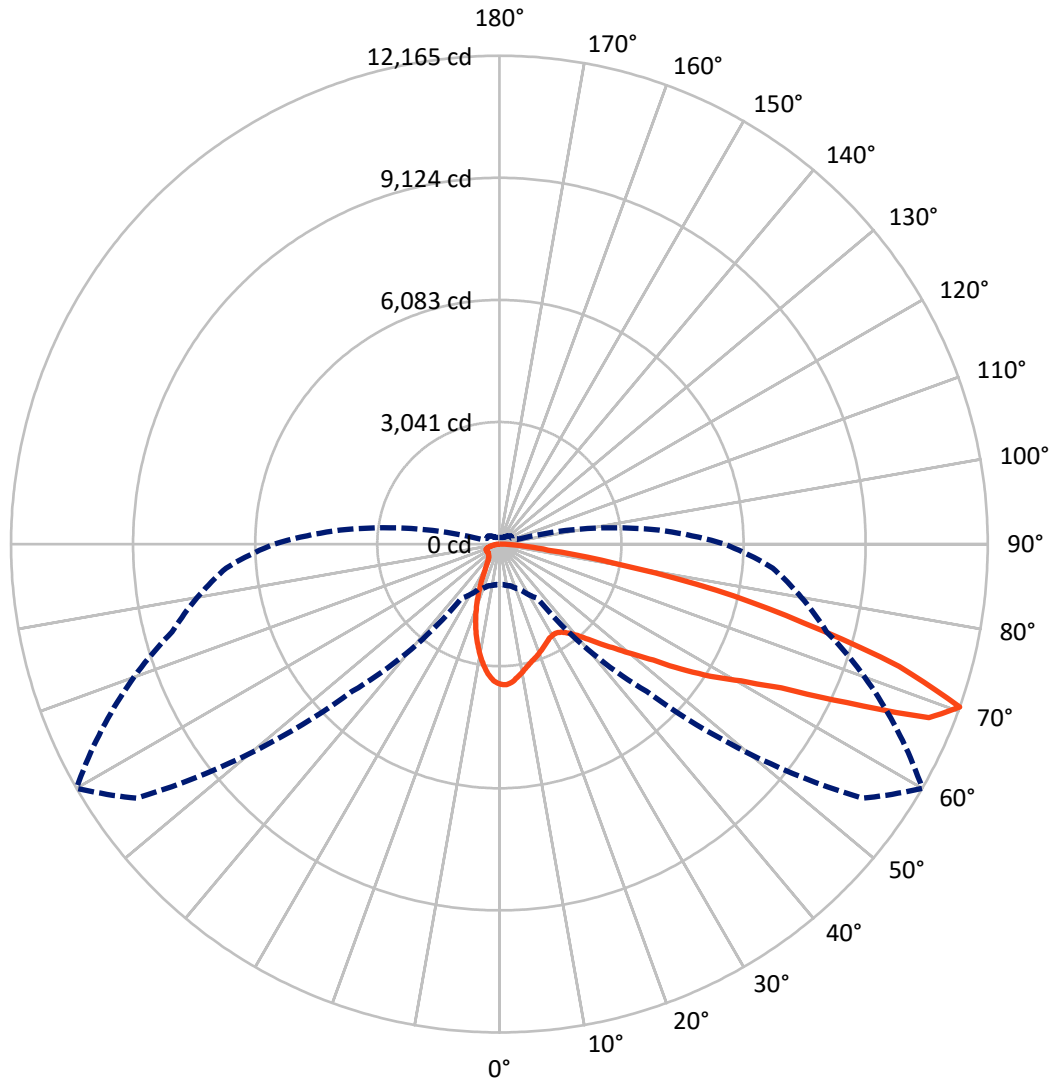
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.7 fc
 Type III - Medium - N/A

REPORT NUMBER: P634021
CATALOG NUMBER: GWS-SA2F-830-U-SL3-W

Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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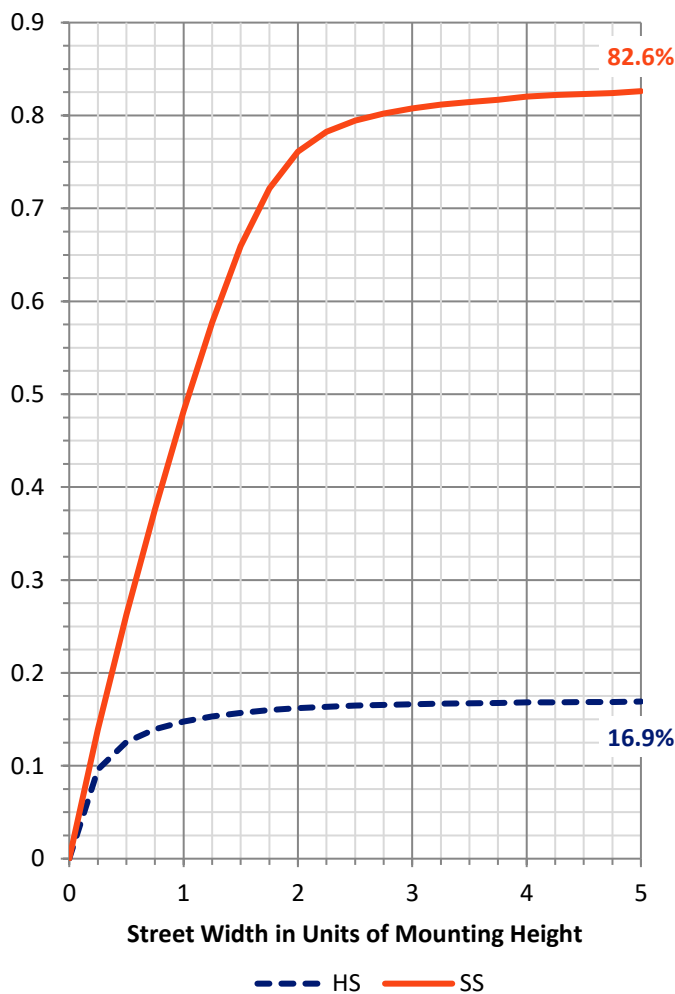
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2159.5 | 0.0 | 2159.5 |
| | % Fixture | 17.1 | 0.0 | 17.1 |
| Street Side | Lumens | 10467.5 | 0.0 | 10467.5 |
| | % Fixture | 82.9 | 0.0 | 82.9 |
| Total | Lumens | 12627.0 | 0.0 | 12627.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 301.2 | 2.4 |
| 10°-20° | 674.7 | 5.3 |
| 20°-30° | 864.1 | 6.8 |
| 30°-40° | 1135.6 | 9.0 |
| 40°-50° | 1647.6 | 13.0 |
| 50°-60° | 2570.7 | 20.4 |
| 60°-70° | 3365.5 | 26.7 |
| 70°-80° | 1861.0 | 14.7 |
| 80°-90° | 206.5 | 1.6 |
| 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° | 12627.0 | 100.0 |
| 0°-180° | 12627.0 | 100.0 |

Coefficient of Utilization



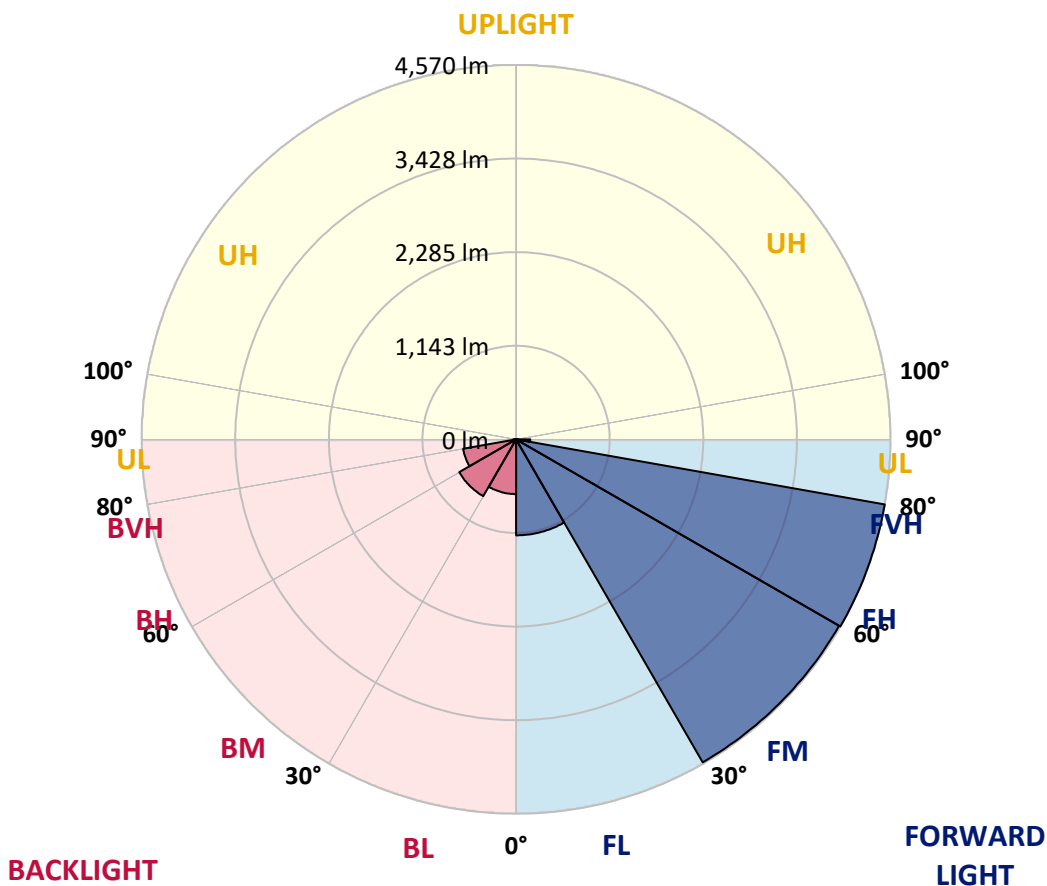
REPORT NUMBER: P634021

CATALOG NUMBER: GWS-SA2F-830-U-SL3-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1171.9 | 9.3 | | | |
| FM (30°-60°) | 4553.2 | 36.1 | | | |
| FH (60°-80°) | 4570.3 | 36.2 | | | G2/5000 |
| FVH (80°-90°) | 172.1 | 1.4 | | | G2/225 |
| BL (0°-30°) | 668.1 | 5.3 | B2/1000 | | |
| BM (30°-60°) | 800.7 | 6.3 | B1/1000 | | |
| BH (60°-80°) | 656.3 | 5.2 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 34.4 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 </tr | | | |

BUG Rating: B2-U0-G2
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 60° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|
| 0° | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 |
| 2.5° | 3445.1 | 3448.8 | 3458.9 | 3473.7 | 3488.5 | 3495.9 | 3514.4 | 3508.8 | 3505.1 | 3497.7 | 3488.5 |
| 5° | 3292.7 | 3300.0 | 3309.3 | 3337.9 | 3370.3 | 3396.1 | 3437.7 | 3442.3 | 3444.2 | 3447.9 | 3433.1 |
| 7.5° | 3098.6 | 3100.5 | 3122.7 | 3160.5 | 3203.0 | 3247.4 | 3316.7 | 3336.1 | 3352.7 | 3371.2 | 3359.2 |
| 10° | 2884.3 | 2888.9 | 2905.6 | 2960.1 | 3033.0 | 3098.6 | 3192.0 | 3224.3 | 3259.4 | 3300.0 | 3283.4 |
| 12.5° | 2708.8 | 2709.7 | 2736.5 | 2794.7 | 2874.1 | 2962.8 | 3079.2 | 3118.0 | 3164.2 | 3228.0 | 3213.2 |
| 15° | 2569.3 | 2569.3 | 2594.2 | 2644.1 | 2735.6 | 2840.0 | 2978.5 | 3028.4 | 3091.2 | 3177.2 | 3151.3 |
| 17.5° | 2458.4 | 2459.3 | 2475.0 | 2527.7 | 2609.0 | 2724.5 | 2888.9 | 2956.4 | 3025.7 | 3139.3 | 3100.5 |
| 20° | 2400.2 | 2395.6 | 2398.4 | 2430.7 | 2500.0 | 2611.8 | 2799.3 | 2877.8 | 2971.1 | 3113.4 | 3054.3 |
| 22.5° | 2397.4 | 2389.1 | 2377.1 | 2379.9 | 2420.5 | 2512.9 | 2703.2 | 2798.4 | 2915.7 | 3092.2 | 3007.2 |
| 25° | 2444.5 | 2435.3 | 2414.1 | 2390.0 | 2386.3 | 2441.8 | 2612.7 | 2720.8 | 2858.4 | 3082.9 | 2961.9 |
| 27.5° | 2524.0 | 2517.5 | 2489.8 | 2453.8 | 2415.9 | 2414.1 | 2544.3 | 2657.0 | 2816.9 | 3092.2 | 2929.6 |
| 30° | 2629.3 | 2618.2 | 2600.7 | 2554.5 | 2497.2 | 2438.1 | 2517.5 | 2622.9 | 2789.1 | 3121.7 | 2915.7 |
| 32.5° | 2748.5 | 2742.0 | 2725.4 | 2679.2 | 2618.2 | 2524.0 | 2538.8 | 2630.2 | 2789.1 | 3173.5 | 2918.5 |
| 35° | 2875.1 | 2874.1 | 2874.1 | 2843.7 | 2776.2 | 2658.9 | 2622.9 | 2693.1 | 2831.6 | 3256.6 | 2948.1 |
| 37.5° | 2997.9 | 2997.0 | 3026.6 | 3037.7 | 2961.0 | 2834.4 | 2766.0 | 2818.7 | 2925.0 | 3379.5 | 3021.0 |
| 40° | 3097.7 | 3101.4 | 3166.1 | 3221.5 | 3179.0 | 3061.7 | 2965.6 | 2992.4 | 3076.5 | 3554.1 | 3148.5 |
| 42.5° | 3198.4 | 3208.6 | 3305.6 | 3403.5 | 3420.1 | 3318.5 | 3221.5 | 3237.2 | 3293.6 | 3785.1 | 3338.8 |
| 45° | 3308.4 | 3313.0 | 3448.8 | 3585.5 | 3665.9 | 3605.8 | 3526.4 | 3547.6 | 3560.6 | 4070.5 | 3622.5 |
| 47.5° | 3414.6 | 3426.6 | 3602.1 | 3789.7 | 3942.1 | 3936.6 | 3892.2 | 3885.8 | 3888.5 | 4417.9 | 3957.8 |
| 50° | 3559.6 | 3577.2 | 3783.2 | 4009.6 | 4233.1 | 4335.7 | 4348.6 | 4299.7 | 4279.3 | 4804.1 | 4375.4 |
| 52.5° | 3835.0 | 3835.0 | 4019.7 | 4242.4 | 4542.6 | 4796.7 | 4883.5 | 4803.2 | 4738.5 | 5212.4 | 4818.9 |
| 55° | 4179.6 | 4194.3 | 4341.2 | 4521.4 | 4902.0 | 5281.7 | 5575.5 | 5486.8 | 5303.9 | 5656.8 | 5283.6 |
| 57.5° | 4332.9 | 4351.4 | 4584.2 | 4864.1 | 5372.3 | 5833.3 | 6240.7 | 6209.3 | 5942.3 | 6118.8 | 5765.8 |
| 60° | 4055.8 | 4094.6 | 4415.1 | 4884.5 | 5798.2 | 6723.0 | 7010.3 | 6918.8 | 6537.3 | 6603.8 | 6288.7 |
| 62.5° | 3383.2 | 3425.7 | 3781.4 | 4436.4 | 5739.0 | 7684.7 | 8223.3 | 7886.1 | 7280.0 | 7216.3 | 6985.3 |
| 65° | 2018.6 | 2016.8 | 2444.5 | 3313.0 | 5010.1 | 7951.7 | 10143.1 | 9514.0 | 8427.5 | 8057.0 | 7702.3 |
| 67.5° | 1283.2 | 1280.5 | 1370.1 | 1755.3 | 3334.2 | 7297.6 | 11377.4 | 11540.9 | 9986.0 | 8675.1 | 7761.4 |
| 70° | 1012.6 | 1011.6 | 1076.3 | 1251.8 | 1649.1 | 5193.0 | 11033.7 | 12165.4 | 10927.5 | 8439.5 | 6833.8 |
| 72.5° | 738.2 | 740.0 | 839.8 | 1048.6 | 1272.2 | 2607.1 | 8934.7 | 10409.2 | 10050.7 | 7450.0 | 5547.8 |
| 75° | 530.3 | 533.1 | 593.1 | 802.8 | 1173.3 | 1425.5 | 5941.4 | 7827.0 | 7646.8 | 5971.9 | 3816.5 |
| 77.5° | 337.2 | 340.9 | 393.6 | 562.6 | 947.9 | 1151.1 | 3602.1 | 5525.6 | 5087.7 | 3364.7 | 1357.2 |
| 80° | 206.0 | 218.0 | 262.4 | 419.4 | 757.6 | 863.8 | 1800.6 | 2911.1 | 2548.0 | 922.9 | 456.4 |
| 82.5° | 106.2 | 115.5 | 158.0 | 259.6 | 522.0 | 758.5 | 1019.0 | 1223.2 | 789.0 | 386.2 | 243.0 |
| 85° | 33.3 | 38.8 | 55.4 | 105.3 | 248.5 | 470.2 | 674.4 | 607.9 | 362.2 | 182.0 | 112.7 |
| 87.5° | 8.3 | 8.3 | 9.2 | 9.2 | 10.2 | 21.2 | 130.3 | 137.7 | 96.1 | 57.3 | 46.2 |
| 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: P634021

CATALOG NUMBER: GWS-SA2F-830-U-SL3-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 | 3494.1 |
| 2.5° | 3470.0 | 3447.9 | 3438.6 | 3437.7 | 3414.6 | 3381.3 | 3359.2 | 3343.5 | 3334.2 | 3332.4 | 3332.4 |
| 5° | 3408.1 | 3379.5 | 3341.6 | 3313.0 | 3251.1 | 3188.3 | 3135.6 | 3106.0 | 3071.8 | 3067.2 | 3066.3 |
| 7.5° | 3325.9 | 3284.3 | 3212.3 | 3131.9 | 3023.8 | 2919.4 | 2830.7 | 2770.7 | 2710.6 | 2699.5 | 2695.8 |
| 10° | 3237.2 | 3180.9 | 3058.0 | 2916.6 | 2755.0 | 2598.8 | 2463.0 | 2356.8 | 2286.6 | 2236.7 | 2227.4 |
| 12.5° | 3149.5 | 3074.6 | 2894.5 | 2683.8 | 2462.1 | 2248.7 | 2044.5 | 1870.8 | 1745.2 | 1672.2 | 1659.3 |
| 15° | 3067.2 | 2962.8 | 2716.2 | 2447.3 | 2159.1 | 1867.1 | 1578.0 | 1352.5 | 1176.1 | 1113.3 | 1098.5 |
| 17.5° | 2992.4 | 2862.1 | 2543.4 | 2202.5 | 1843.1 | 1461.6 | 1132.7 | 932.2 | 828.7 | 797.3 | 789.9 |
| 20° | 2917.6 | 2758.7 | 2367.9 | 1944.7 | 1507.7 | 1080.0 | 827.8 | 733.5 | 694.7 | 682.7 | 679.0 |
| 22.5° | 2837.2 | 2645.0 | 2176.6 | 1690.7 | 1168.7 | 808.4 | 677.2 | 635.6 | 623.6 | 624.5 | 623.6 |
| 25° | 2756.8 | 2529.5 | 1976.1 | 1414.4 | 870.3 | 655.9 | 591.3 | 575.6 | 578.3 | 586.7 | 588.5 |
| 27.5° | 2690.3 | 2427.0 | 1779.4 | 1111.4 | 680.0 | 564.5 | 534.0 | 533.1 | 543.2 | 554.3 | 556.2 |
| 30° | 2642.3 | 2335.5 | 1585.4 | 854.6 | 559.9 | 501.7 | 489.6 | 495.2 | 507.2 | 515.5 | 518.3 |
| 32.5° | 2608.1 | 2257.0 | 1378.4 | 671.6 | 490.6 | 457.3 | 451.8 | 457.3 | 464.7 | 473.0 | 474.9 |
| 35° | 2596.1 | 2199.7 | 1175.2 | 547.9 | 443.5 | 425.0 | 421.3 | 424.1 | 427.7 | 432.4 | 434.2 |
| 37.5° | 2622.9 | 2171.1 | 962.7 | 476.7 | 414.8 | 403.7 | 398.2 | 396.3 | 397.3 | 399.1 | 400.0 |
| 40° | 2702.3 | 2184.0 | 789.0 | 435.1 | 396.3 | 386.2 | 376.9 | 373.2 | 372.3 | 374.2 | 373.2 |
| 42.5° | 2839.0 | 2238.5 | 663.3 | 411.1 | 381.6 | 366.8 | 356.6 | 352.9 | 352.9 | 357.5 | 357.5 |
| 45° | 3039.5 | 2345.7 | 572.8 | 393.6 | 368.6 | 350.1 | 339.1 | 337.2 | 340.9 | 348.3 | 349.2 |
| 47.5° | 3333.3 | 2502.7 | 518.3 | 380.6 | 356.6 | 335.4 | 324.3 | 323.4 | 330.7 | 342.8 | 343.7 |
| 50° | 3681.6 | 2729.1 | 488.7 | 371.4 | 348.3 | 323.4 | 312.3 | 313.2 | 321.5 | 334.4 | 337.2 |
| 52.5° | 4101.0 | 3037.7 | 490.6 | 367.7 | 343.7 | 316.0 | 304.9 | 303.0 | 311.3 | 324.3 | 327.0 |
| 55° | 4534.3 | 3412.8 | 526.6 | 368.6 | 337.2 | 312.3 | 297.5 | 291.0 | 298.4 | 307.6 | 308.6 |
| 57.5° | 5011.0 | 3835.9 | 616.2 | 366.8 | 328.9 | 308.6 | 291.0 | 276.2 | 280.9 | 286.4 | 289.2 |
| 60° | 5548.7 | 4333.8 | 809.3 | 370.5 | 325.2 | 300.3 | 278.1 | 258.7 | 257.8 | 261.5 | 262.4 |
| 62.5° | 6267.5 | 5011.0 | 1026.4 | 376.9 | 333.5 | 290.1 | 258.7 | 238.4 | 234.7 | 236.5 | 237.4 |
| 65° | 6817.2 | 5334.4 | 958.0 | 371.4 | 351.1 | 282.7 | 240.2 | 219.0 | 211.6 | 209.7 | 209.7 |
| 67.5° | 6593.6 | 4906.6 | 667.0 | 356.6 | 359.4 | 283.6 | 225.4 | 198.6 | 189.4 | 184.8 | 183.8 |
| 70° | 5610.6 | 3985.6 | 463.8 | 341.8 | 350.1 | 281.8 | 209.7 | 182.0 | 170.0 | 163.5 | 162.6 |
| 72.5° | 4432.7 | 3043.2 | 375.1 | 312.3 | 317.8 | 254.1 | 186.6 | 163.5 | 153.4 | 145.0 | 145.0 |
| 75° | 2852.9 | 1857.0 | 313.2 | 278.1 | 259.6 | 197.7 | 161.7 | 146.0 | 135.8 | 127.5 | 127.5 |
| 77.5° | 959.9 | 689.2 | 243.0 | 235.6 | 194.0 | 148.7 | 135.8 | 125.6 | 117.3 | 109.9 | 109.0 |
| 80° | 389.9 | 327.0 | 178.3 | 178.3 | 135.8 | 113.6 | 106.2 | 101.6 | 96.1 | 86.8 | 86.8 |
| 82.5° | 226.3 | 198.6 | 124.7 | 108.1 | 90.5 | 78.5 | 73.9 | 69.3 | 69.3 | 62.8 | 62.8 |
| 85° | 109.0 | 109.9 | 74.8 | 66.5 | 51.7 | 45.3 | 43.4 | 40.7 | 39.7 | 36.0 | 35.1 |
| 87.5° | 59.1 | 60.1 | 37.9 | 29.6 | 20.3 | 17.6 | 14.8 | 13.9 | 12.9 | 12.0 | 12.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2408-195-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **GALN-SB1A-830-U-5WQ**
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K): 3050
 CIE u': 0.2476
 CIE v': 0.5251
 Duv: 0.0034
 CIE x: 0.4383
 CIE y: 0.4131
 CIE z: 0.1487
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 581
 Purity: 55.55201
 Rf: 81.5
 Rg: 99.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 81.0 | | |
| R1: | 79.6 | R9: | 7.1 |
| R2: | 85.6 | R10: | 67.0 |
| R3: | 92.0 | R11: | 82.7 |
| R4: | 82.6 | R12: | 63.2 |
| R5: | 78.9 | R13: | 80.3 |
| R6: | 81.7 | R14: | 95.0 |
| R7: | 85.2 | R15: | 71.7 |
| R8: | 62.0 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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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



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 81.0$
 $R_9 = 7.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)