

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: P642437

Luminaire Tested: GWS-SA6C-830-U-SL4-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P642437
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-36)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA6C-830-U-SL4-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: (96) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17772.5 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G3

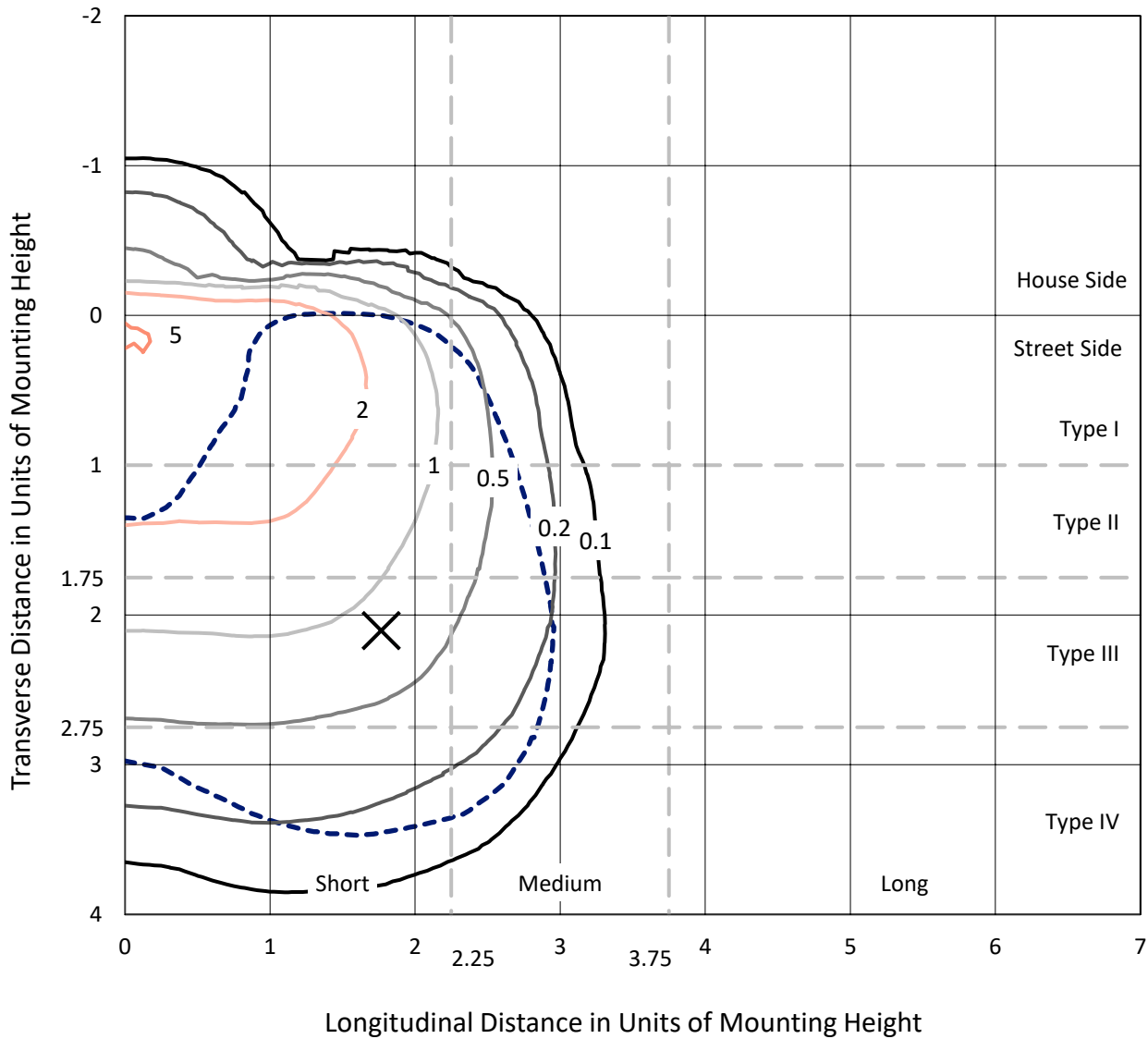
Input Watts (W): 189.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P642437
 CATALOG NUMBER: GWS-SA6C-830-U-SL4-W-HSS

Iso-Footcandle Lines of Horizontal Illumination

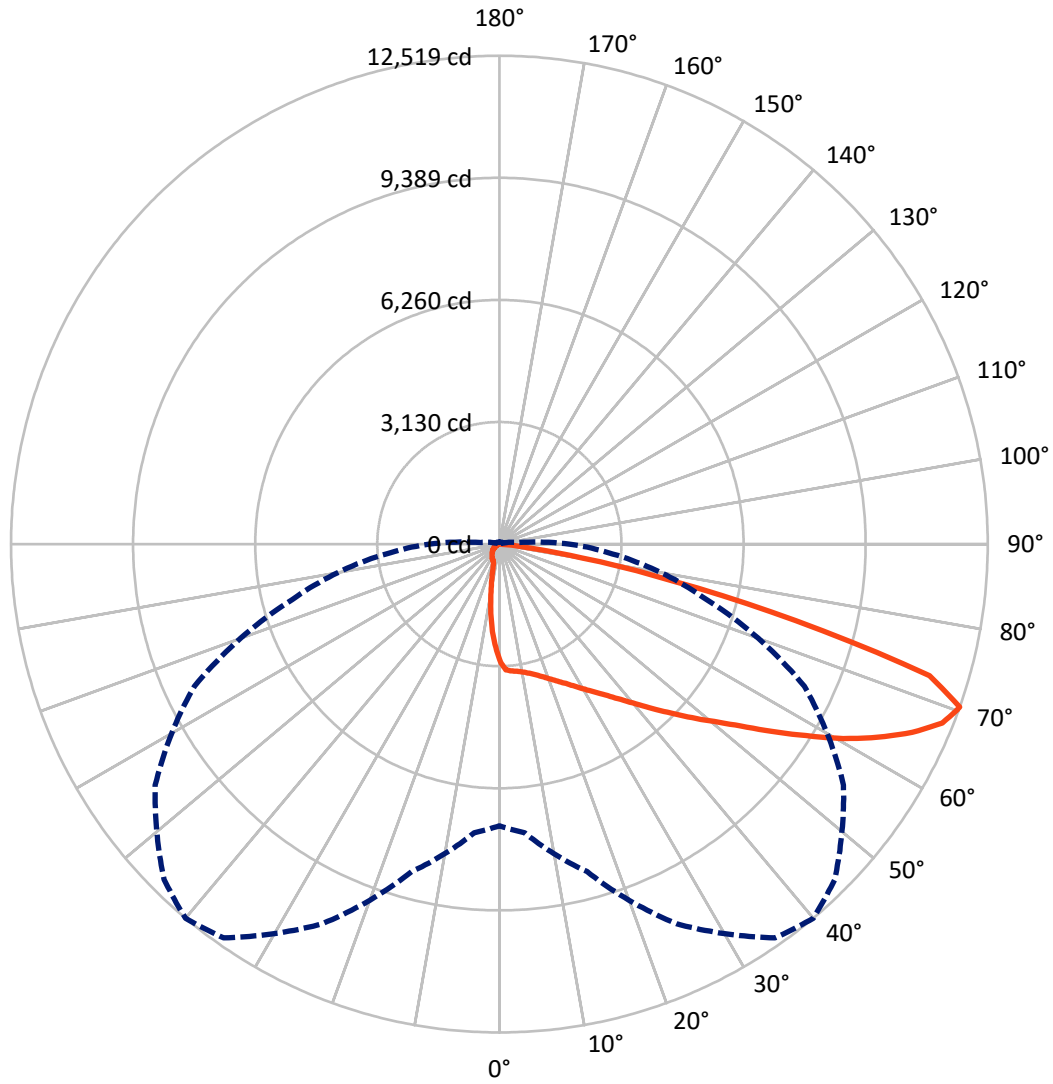
✕ Max cd
 - - - 1/2 Max cd



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

REPORT NUMBER: P642437
CATALOG NUMBER: GWS-SA6C-830-U-SL4-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical



REPORT NUMBER: P642437
 CATALOG NUMBER: GWS-SA6C-830-U-SL4-W-HSS

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1453.3 | 0.0 | 1453.3 |
| | % Fixture | 8.2 | 0.0 | 8.2 |
| Street Side | Lumens | 16319.2 | 0.0 | 16319.2 |
| | % Fixture | 91.8 | 0.0 | 91.8 |
| Total | Lumens | 17772.5 | 0.0 | 17772.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 254.9 | 1.4 |
| 10°-20° | 646.5 | 3.6 |
| 20°-30° | 1082.0 | 6.1 |
| 30°-40° | 1699.4 | 9.6 |
| 40°-50° | 2688.0 | 15.1 |
| 50°-60° | 3921.1 | 22.1 |
| 60°-70° | 4860.8 | 27.4 |
| 70°-80° | 2459.3 | 13.8 |
| 80°-90° | 160.5 | 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° | 17772.5 | 100.0 |
| 0°-180° | 17772.5 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P642437

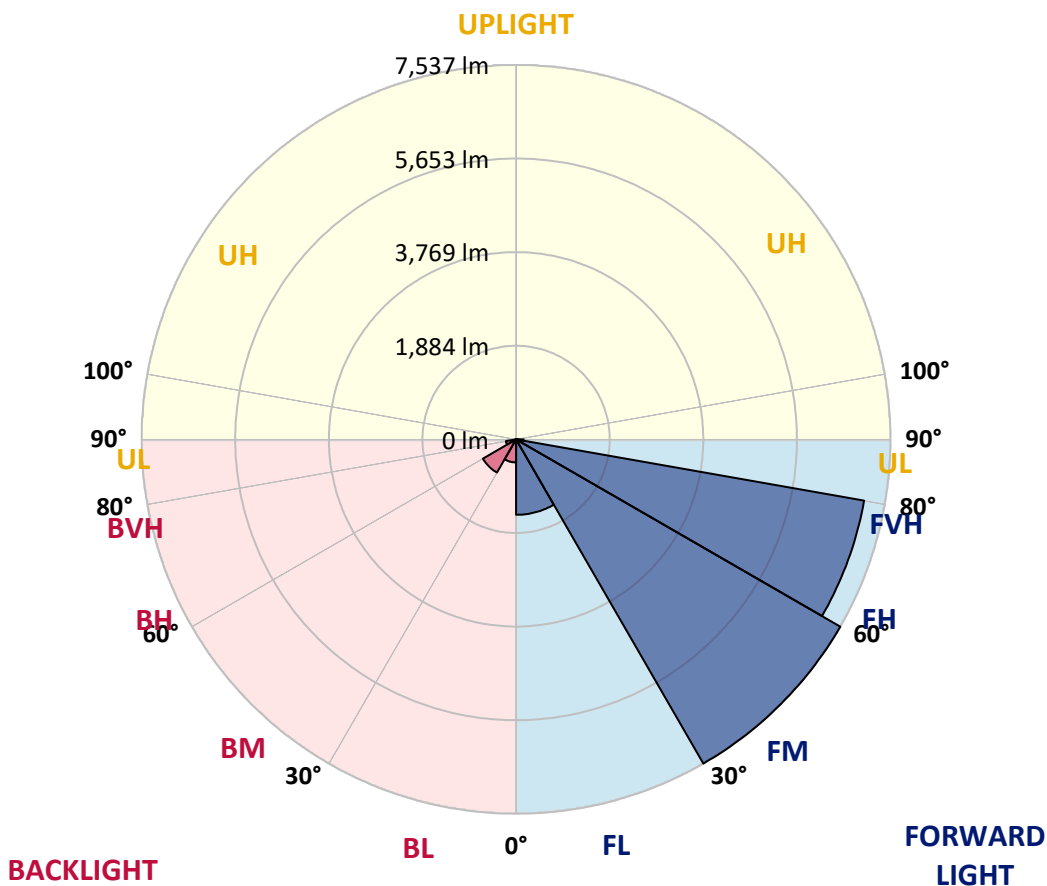
CATALOG NUMBER: GWS-SA6C-830-U-SL4-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1519.2 | 8.5 | | | |
| FM (30°-60°) | 7537.1 | 42.4 | | | |
| FH (60°-80°) | 7112.9 | 40.0 | | | G3/7500 |
| FVH (80°-90°) | 150.0 | 0.8 | | | G2/225 |
| BL (0°-30°) | 464.1 | 2.6 | B1/500 | | |
| BM (30°-60°) | 771.4 | 4.3 | B1/1000 | | |
| BH (60°-80°) | 207.2 | 1.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 10.6 | 0.1 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G3

Type IV Short





REPORT NUMBER: P642437

CATALOG NUMBER: GWS-SA6C-830-U-SL4-W-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 40° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 |
| 2.5° | 3242.2 | 3253.5 | 3251.9 | 3256.7 | 3245.4 | 3227.6 | 3224.4 | 3200.1 | 3156.5 | 3101.5 | 3040.0 |
| 5° | 3308.5 | 3321.4 | 3311.7 | 3306.8 | 3285.8 | 3266.4 | 3261.6 | 3235.7 | 3185.6 | 3111.2 | 3004.5 |
| 7.5° | 3365.1 | 3368.3 | 3361.8 | 3350.5 | 3319.8 | 3293.9 | 3276.1 | 3240.5 | 3180.7 | 3106.3 | 2983.4 |
| 10° | 3374.8 | 3373.1 | 3376.4 | 3378.0 | 3358.6 | 3336.0 | 3321.4 | 3272.9 | 3196.9 | 3117.7 | 2985.1 |
| 12.5° | 3363.4 | 3363.4 | 3384.5 | 3408.7 | 3408.7 | 3397.4 | 3382.8 | 3339.2 | 3250.3 | 3156.5 | 3017.4 |
| 15° | 3378.0 | 3382.8 | 3423.3 | 3468.6 | 3483.1 | 3471.8 | 3465.3 | 3420.0 | 3327.9 | 3224.4 | 3075.6 |
| 17.5° | 3429.7 | 3434.6 | 3499.3 | 3567.2 | 3585.0 | 3572.0 | 3559.1 | 3513.8 | 3415.2 | 3302.0 | 3141.9 |
| 20° | 3505.7 | 3518.7 | 3601.1 | 3688.5 | 3704.6 | 3688.5 | 3662.6 | 3599.5 | 3500.9 | 3386.1 | 3205.0 |
| 22.5° | 3644.8 | 3652.9 | 3741.8 | 3834.0 | 3842.1 | 3816.2 | 3777.4 | 3690.1 | 3586.6 | 3475.0 | 3276.1 |
| 25° | 3829.2 | 3840.5 | 3929.4 | 4018.3 | 3997.3 | 3958.5 | 3905.2 | 3806.5 | 3688.5 | 3580.1 | 3366.7 |
| 27.5° | 4049.1 | 4062.0 | 4149.3 | 4226.9 | 4172.0 | 4126.7 | 4066.9 | 3944.0 | 3824.3 | 3725.7 | 3483.1 |
| 30° | 4286.8 | 4298.1 | 4375.7 | 4445.2 | 4372.5 | 4319.1 | 4248.0 | 4121.8 | 4000.6 | 3926.2 | 3648.0 |
| 32.5° | 4516.4 | 4514.8 | 4589.2 | 4645.8 | 4571.4 | 4529.3 | 4464.6 | 4336.9 | 4239.9 | 4207.5 | 3893.8 |
| 35° | 4729.8 | 4729.8 | 4791.3 | 4847.9 | 4794.5 | 4771.9 | 4712.1 | 4610.2 | 4555.2 | 4594.0 | 4222.1 |
| 37.5° | 4944.9 | 4933.6 | 4991.8 | 5054.9 | 5050.0 | 5051.6 | 5017.7 | 4969.2 | 4972.4 | 5109.8 | 4673.2 |
| 40° | 5122.8 | 5117.9 | 5185.8 | 5268.3 | 5333.0 | 5384.7 | 5363.7 | 5381.5 | 5483.4 | 5740.5 | 5250.5 |
| 42.5° | 5265.1 | 5276.4 | 5363.7 | 5494.7 | 5658.0 | 5763.1 | 5777.7 | 5850.5 | 6112.4 | 6510.2 | 5902.2 |
| 45° | 5428.4 | 5430.0 | 5551.3 | 5751.8 | 6012.2 | 6178.7 | 6236.9 | 6424.5 | 6796.4 | 7309.0 | 6616.9 |
| 47.5° | 5628.9 | 5609.5 | 5745.3 | 6026.7 | 6403.5 | 6649.3 | 6752.8 | 6987.2 | 7562.9 | 8088.4 | 7199.1 |
| 50° | 5850.5 | 5814.9 | 5968.5 | 6351.7 | 6841.7 | 7148.9 | 7359.2 | 7702.0 | 8322.9 | 8728.8 | 7632.4 |
| 52.5° | 6107.6 | 6073.6 | 6248.2 | 6725.3 | 7367.2 | 7740.8 | 8010.8 | 8356.9 | 8974.6 | 9217.1 | 7891.2 |
| 55° | 6434.2 | 6400.2 | 6584.6 | 7173.2 | 7988.2 | 8473.3 | 8756.3 | 9047.3 | 9581.0 | 9577.7 | 8078.7 |
| 57.5° | 6796.4 | 6749.5 | 7005.0 | 7739.2 | 8762.7 | 9267.3 | 9555.1 | 9697.4 | 10041.8 | 9857.5 | 8204.9 |
| 60° | 7212.0 | 7170.0 | 7524.1 | 8413.5 | 9657.0 | 10124.3 | 10305.4 | 10247.2 | 10420.2 | 10022.4 | 8161.2 |
| 62.5° | 7587.2 | 7567.7 | 8007.6 | 9128.2 | 10509.1 | 10903.7 | 10953.8 | 10700.0 | 10698.3 | 10025.6 | 7866.9 |
| 65° | 7976.9 | 8014.1 | 8667.3 | 9951.3 | 11366.2 | 11631.4 | 11545.7 | 11149.5 | 10809.9 | 9629.5 | 6996.9 |
| 67.5° | 8122.4 | 8230.7 | 9102.3 | 10695.1 | 12042.1 | 12249.1 | 12098.7 | 11374.3 | 10345.8 | 8297.0 | 5328.1 |
| 70° | 7223.3 | 7427.1 | 8691.6 | 10737.1 | 12321.8 | 12519.1 | 12158.5 | 10769.5 | 8625.3 | 5496.3 | 2918.8 |
| 72.5° | 5493.1 | 5730.8 | 7242.7 | 8791.8 | 11081.6 | 11531.1 | 10915.0 | 8774.1 | 5559.4 | 2407.8 | 979.9 |
| 75° | 3074.0 | 3331.1 | 5394.4 | 6620.2 | 7440.0 | 7850.7 | 7624.3 | 5628.9 | 2462.8 | 629.0 | 292.7 |
| 77.5° | 1039.8 | 1125.5 | 2509.6 | 4096.0 | 4911.0 | 4542.3 | 3845.3 | 2795.9 | 905.5 | 239.3 | 155.2 |
| 80° | 616.1 | 648.4 | 934.6 | 2039.1 | 2584.0 | 2142.6 | 1691.4 | 1033.3 | 460.9 | 127.7 | 108.3 |
| 82.5° | 184.3 | 218.3 | 515.8 | 756.8 | 1012.3 | 630.6 | 533.6 | 590.2 | 239.3 | 69.5 | 90.6 |
| 85° | 0.0 | 0.0 | 110.0 | 234.5 | 265.2 | 103.5 | 103.5 | 334.7 | 43.7 | 29.1 | 66.3 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 8.1 | 4.9 | 6.5 | 14.6 |
| 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: P642437

CATALOG NUMBER: GWS-SA6C-830-U-SL4-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 | 3015.8 |
| 2.5° | 2996.4 | 2939.8 | 2873.5 | 2810.4 | 2750.6 | 2673.0 | 2635.8 | 2590.5 | 2551.7 | 2530.7 | 2542.0 |
| 5° | 2936.5 | 2847.6 | 2711.8 | 2574.3 | 2435.3 | 2304.3 | 2186.2 | 2107.0 | 2035.9 | 1998.7 | 2006.7 |
| 7.5° | 2884.8 | 2765.1 | 2553.3 | 2328.5 | 2105.4 | 1880.6 | 1697.9 | 1555.6 | 1445.6 | 1400.4 | 1392.3 |
| 10° | 2862.2 | 2711.8 | 2412.6 | 2089.2 | 1746.4 | 1444.0 | 1185.3 | 1028.4 | 916.9 | 861.9 | 871.6 |
| 12.5° | 2873.5 | 2684.3 | 2293.0 | 1854.7 | 1410.1 | 1057.5 | 810.1 | 663.0 | 583.8 | 551.4 | 543.3 |
| 15° | 2905.8 | 2677.8 | 2186.2 | 1615.4 | 1088.3 | 739.0 | 559.5 | 499.7 | 483.5 | 480.3 | 480.3 |
| 17.5° | 2943.0 | 2679.4 | 2076.3 | 1372.9 | 826.3 | 548.2 | 478.6 | 467.3 | 462.5 | 459.2 | 460.9 |
| 20° | 2980.2 | 2679.4 | 1950.2 | 1127.1 | 620.9 | 473.8 | 456.0 | 447.9 | 443.1 | 441.5 | 441.5 |
| 22.5° | 3025.5 | 2679.4 | 1809.5 | 899.1 | 498.0 | 449.5 | 435.0 | 430.1 | 425.3 | 423.7 | 422.0 |
| 25° | 3080.5 | 2681.1 | 1654.2 | 703.4 | 452.8 | 428.5 | 417.2 | 412.3 | 407.5 | 404.3 | 404.3 |
| 27.5° | 3159.7 | 2694.0 | 1482.8 | 548.2 | 426.9 | 409.1 | 399.4 | 394.6 | 389.7 | 384.9 | 384.9 |
| 30° | 3274.5 | 2726.3 | 1290.4 | 452.8 | 402.6 | 388.1 | 378.4 | 375.2 | 370.3 | 365.5 | 363.8 |
| 32.5° | 3445.9 | 2782.9 | 1091.5 | 405.9 | 380.0 | 365.5 | 354.1 | 350.9 | 346.0 | 341.2 | 339.6 |
| 35° | 3685.2 | 2886.4 | 897.5 | 376.8 | 350.9 | 336.3 | 329.9 | 328.3 | 321.8 | 316.9 | 316.9 |
| 37.5° | 4036.1 | 3054.6 | 711.5 | 347.7 | 326.6 | 315.3 | 307.2 | 304.0 | 297.5 | 292.7 | 291.1 |
| 40° | 4464.6 | 3272.9 | 553.0 | 325.0 | 304.0 | 292.7 | 284.6 | 279.7 | 271.7 | 265.2 | 262.0 |
| 42.5° | 5011.2 | 3539.7 | 436.6 | 300.8 | 283.0 | 271.7 | 265.2 | 255.5 | 244.2 | 234.5 | 232.9 |
| 45° | 5580.4 | 3814.6 | 360.6 | 278.1 | 263.6 | 253.9 | 245.8 | 232.9 | 216.7 | 205.4 | 202.1 |
| 47.5° | 6017.0 | 3986.0 | 315.3 | 253.9 | 242.6 | 234.5 | 224.8 | 208.6 | 189.2 | 176.3 | 173.0 |
| 50° | 6329.1 | 4011.9 | 281.4 | 231.2 | 224.8 | 216.7 | 202.1 | 182.7 | 161.7 | 148.8 | 145.5 |
| 52.5° | 6482.7 | 3895.5 | 253.9 | 210.2 | 205.4 | 197.3 | 179.5 | 158.5 | 135.8 | 122.9 | 119.7 |
| 55° | 6552.2 | 3675.5 | 228.0 | 192.4 | 186.0 | 176.3 | 156.9 | 134.2 | 111.6 | 100.3 | 97.0 |
| 57.5° | 6524.8 | 3350.5 | 205.4 | 174.6 | 166.6 | 155.2 | 134.2 | 110.0 | 92.2 | 80.9 | 79.2 |
| 60° | 6321.0 | 2894.5 | 182.7 | 156.9 | 147.2 | 134.2 | 113.2 | 90.6 | 74.4 | 66.3 | 64.7 |
| 62.5° | 5881.2 | 2328.5 | 160.1 | 135.8 | 129.4 | 116.4 | 97.0 | 74.4 | 61.4 | 56.6 | 55.0 |
| 65° | 4980.5 | 1646.1 | 137.4 | 114.8 | 111.6 | 98.6 | 80.9 | 61.4 | 53.4 | 50.1 | 48.5 |
| 67.5° | 3580.1 | 1000.9 | 116.4 | 98.6 | 95.4 | 84.1 | 67.9 | 53.4 | 48.5 | 46.9 | 46.9 |
| 70° | 1799.8 | 473.8 | 92.2 | 80.9 | 80.9 | 69.5 | 58.2 | 48.5 | 46.9 | 45.3 | 45.3 |
| 72.5° | 611.2 | 202.1 | 69.5 | 63.1 | 66.3 | 59.8 | 50.1 | 45.3 | 45.3 | 45.3 | 45.3 |
| 75° | 208.6 | 106.7 | 48.5 | 45.3 | 48.5 | 48.5 | 43.7 | 43.7 | 45.3 | 45.3 | 45.3 |
| 77.5° | 135.8 | 71.1 | 34.0 | 30.7 | 37.2 | 37.2 | 37.2 | 40.4 | 43.7 | 43.7 | 43.7 |
| 80° | 111.6 | 38.8 | 22.6 | 21.0 | 27.5 | 27.5 | 30.7 | 37.2 | 40.4 | 40.4 | 40.4 |
| 82.5° | 95.4 | 24.3 | 12.9 | 14.6 | 19.4 | 21.0 | 25.9 | 30.7 | 35.6 | 37.2 | 37.2 |
| 85° | 64.7 | 12.9 | 9.7 | 11.3 | 12.9 | 16.2 | 21.0 | 25.9 | 29.1 | 32.3 | 32.3 |
| 87.5° | 17.8 | 4.9 | 6.5 | 8.1 | 8.1 | 11.3 | 16.2 | 19.4 | 22.6 | 24.3 | 24.3 |
| 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 |

REPORT NUMBER: SP1-2408-195-9

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: SP1-2408-195-9

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

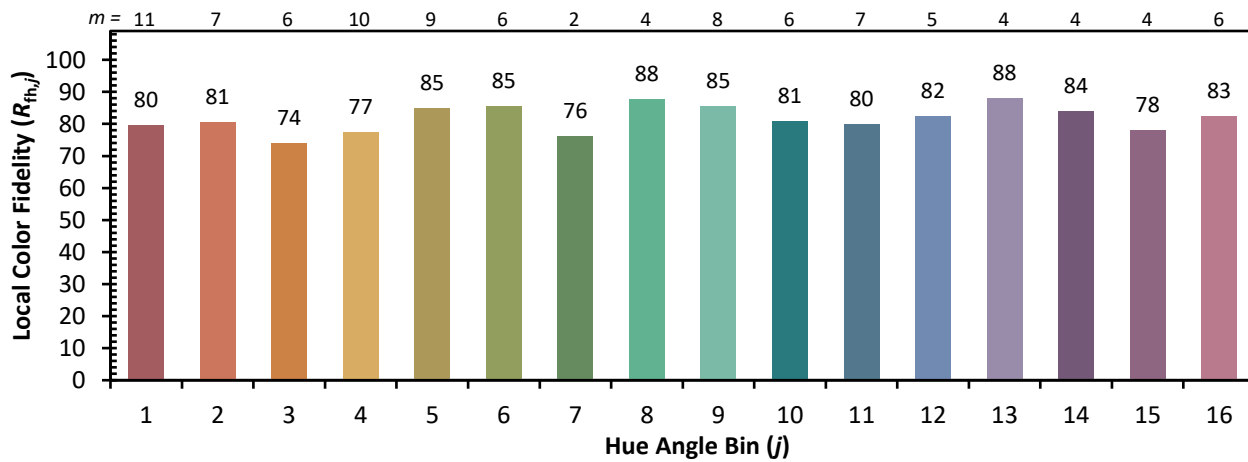
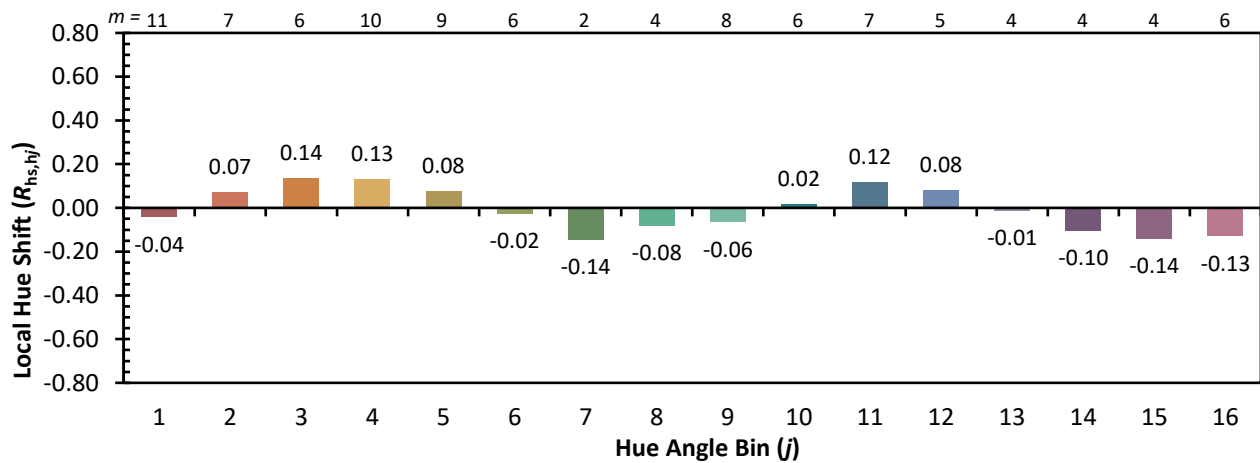
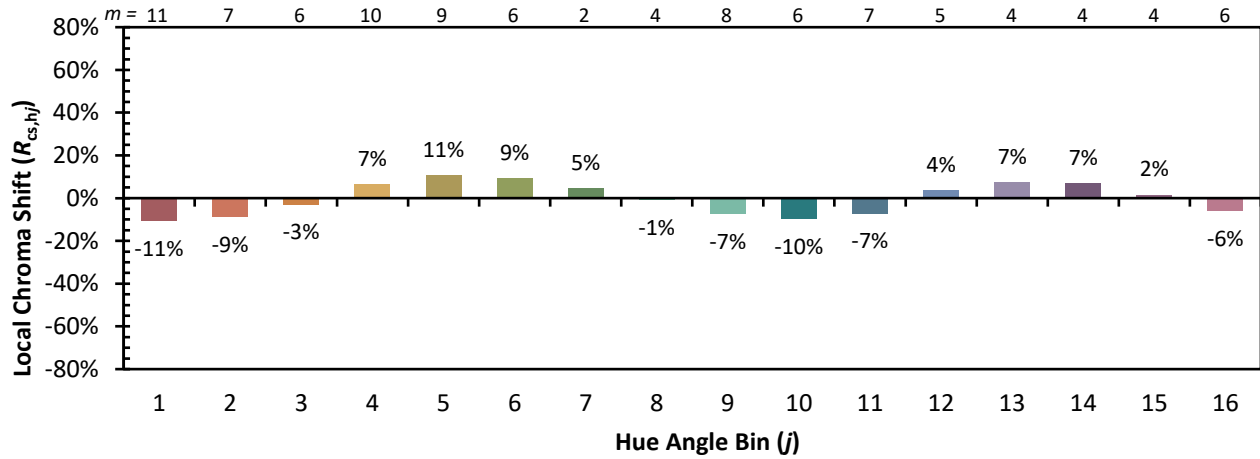


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| 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)