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

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1367207

Luminaire Tested: **GSS-SB5A-740-U-T4W**

Issue Date: 02/18/2026

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1367207 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB5A-740-U-T4W |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 5SQUARE 143W 70CRI 4000K FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC |
| Light Source: | (130) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 22016.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 154.0 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B3 - U0 - G4 |

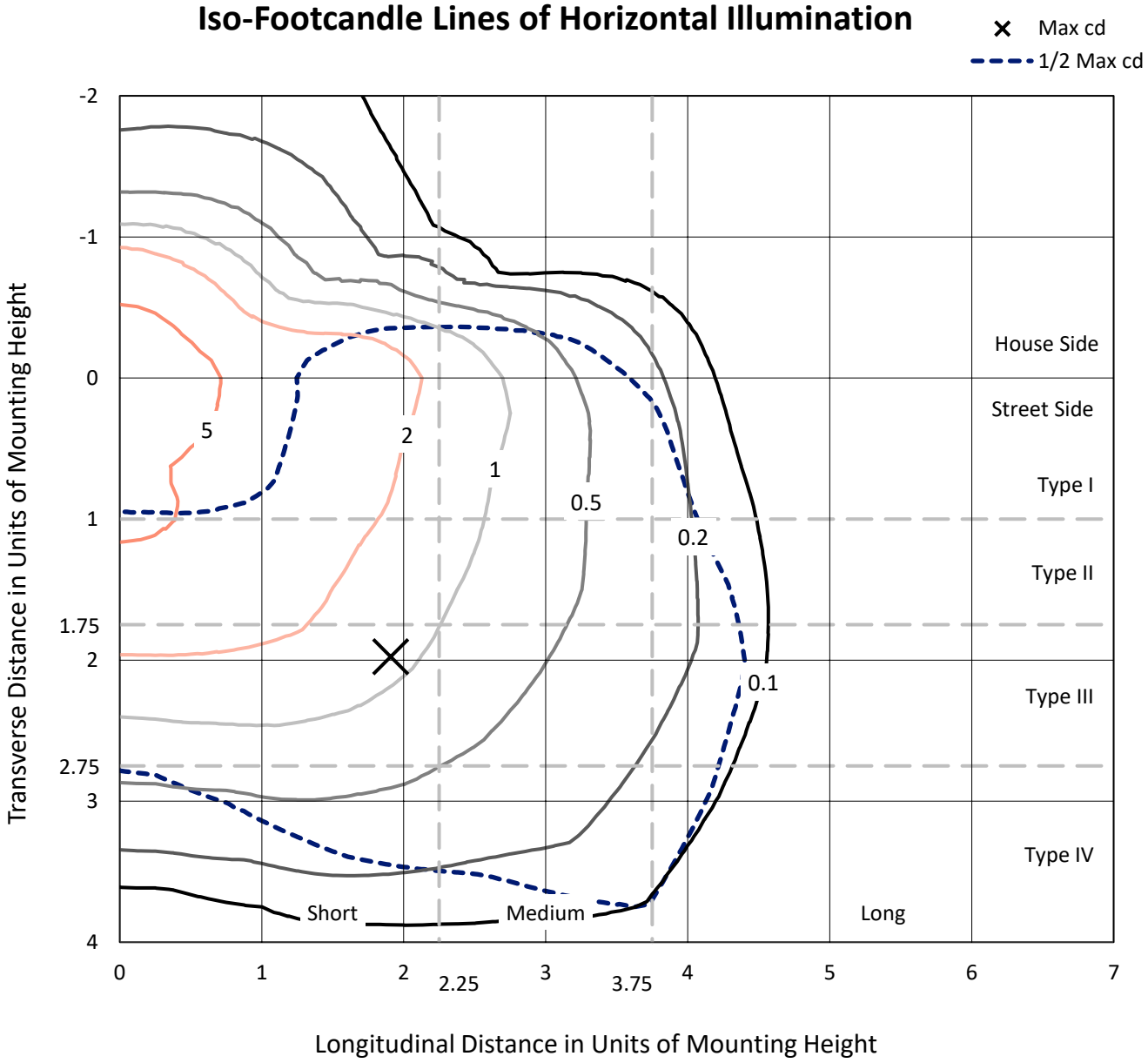
| | |
|---|---|
| Input Watts (W): | 143 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 10.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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

Scaled Data Report

REPORT NUMBER: P1367207
CATALOG NUMBER: GSS-SB5A-740-U-T4W

## Iso-Footcandle Lines of Horizontal Illumination



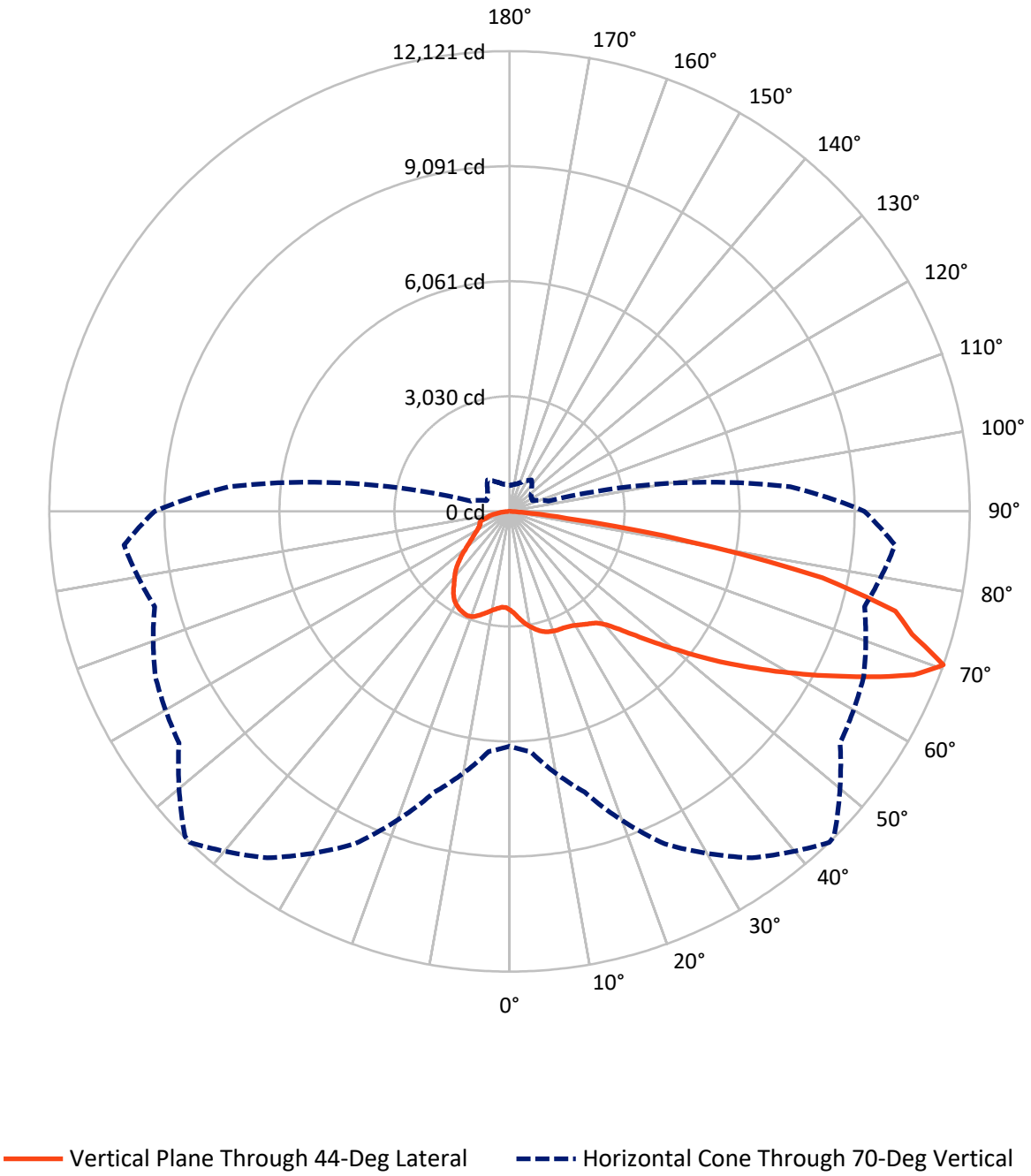

Based on 20 foot mounting height. Maximum calculated value = 8 fc
Type IV - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P1367207
CATALOG NUMBER: GSS-SB5A-740-U-T4W

## Luminous Intensity Polar Plot



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

Scaled Data Report

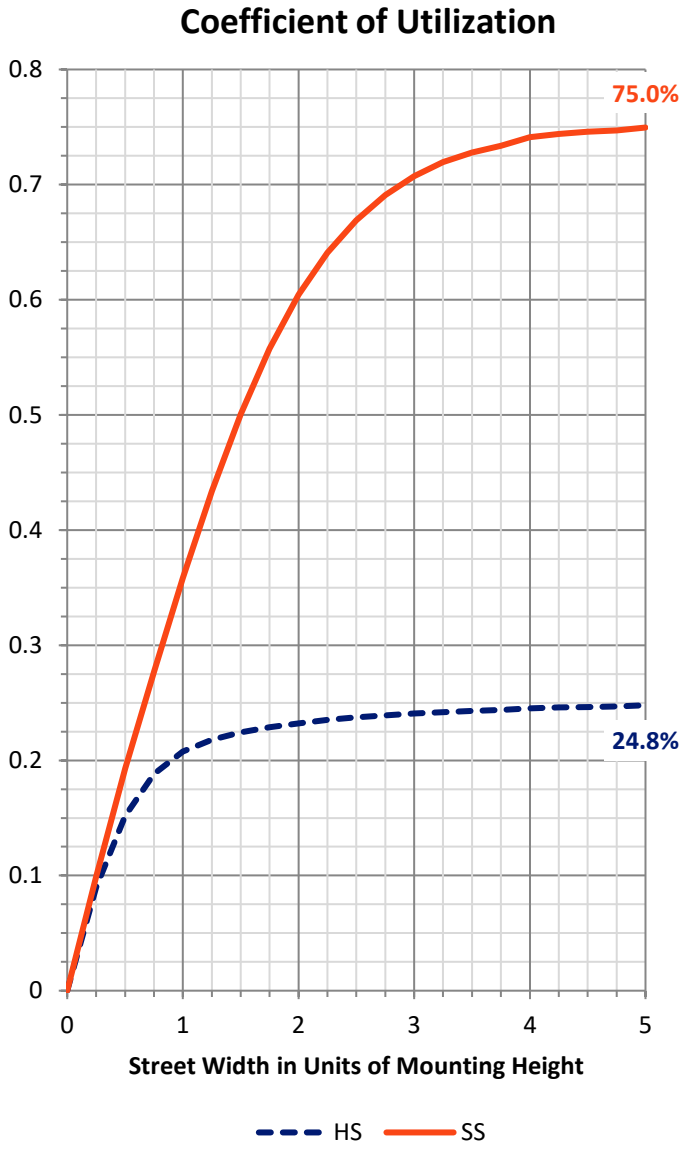
REPORT NUMBER: P1367207
CATALOG NUMBER: GSS-SB5A-740-U-T4W

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 5516.6 | 0.0 | 5516.6 |
| | % Fixture | 25.1 | 0.0 | 25.1 |
| **Street Side** | Lumens | 16499.5 | 0.0 | 16499.5 |
| | % Fixture | 74.9 | 0.0 | 74.9 |
| **Total** | Lumens | 22016.1 | 0.0 | 22016.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 262.6 | 1.2 |
| 10°-20° | 861.9 | 3.9 |
| 20°-30° | 1483.1 | 6.7 |
| 30°-40° | 2090.7 | 9.5 |
| 40°-50° | 2893.1 | 13.1 |
| 50°-60° | 4296.5 | 19.5 |
| 60°-70° | 5742.1 | 26.1 |
| 70°-80° | 4050.6 | 18.4 |
| 80°-90° | 335.5 | 1.5 |
| 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° | 22016.1 | 100.0 |
| 0°-180° | 22016.1 | 100.0 |



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

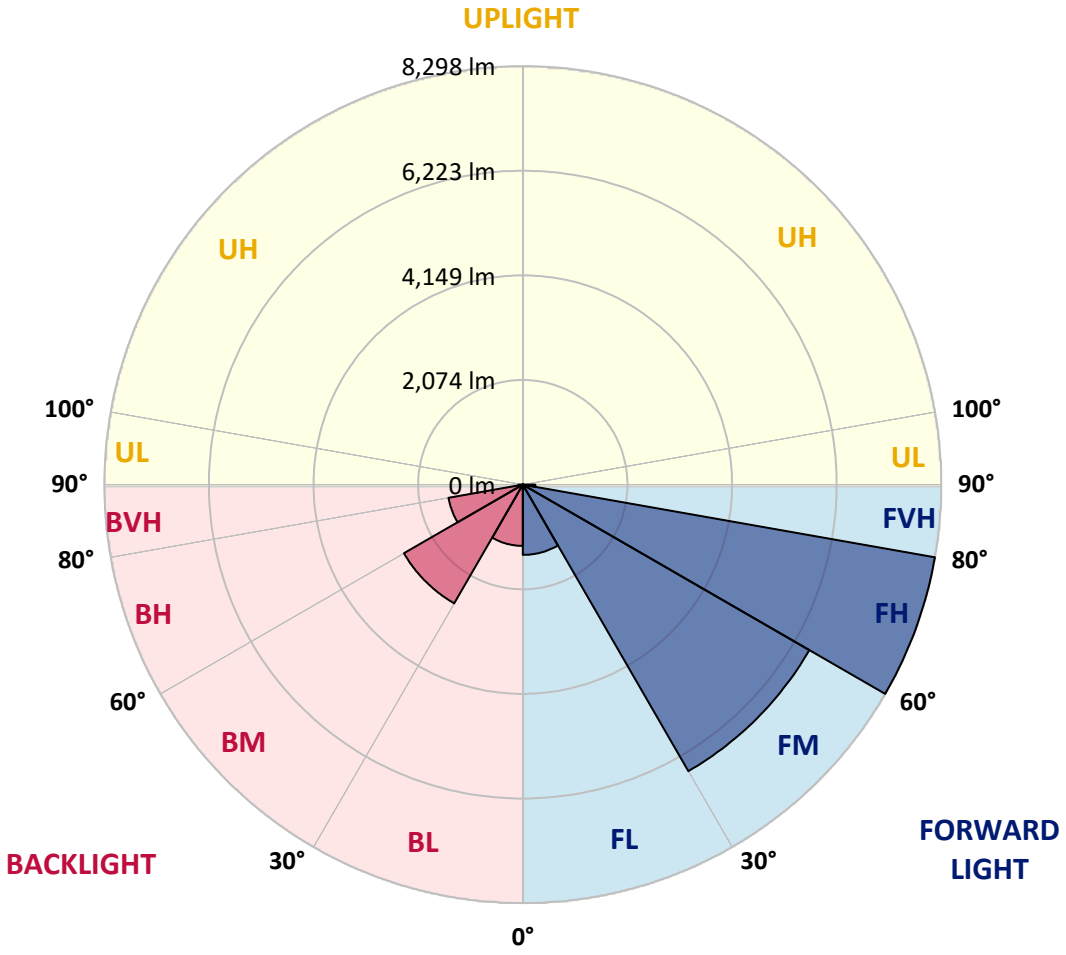
Scaled Data Report

REPORT NUMBER: P1367207
CATALOG NUMBER: GSS-SB5A-740-U-T4W

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1393.3 | 6.3 | | | |
| FM | (30°-60°) | 6560.3 | 29.8 | | | |
| FH | (60°-80°) | 8297.7 | 37.7 | | | G4/12000 |
| FVH | (80°-90°) | 248.3 | 1.1 | | | G3/500 |
| BL | (0°-30°) | 1214.2 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 2720.0 | 12.4 | B3/5000 | | |
| BH | (60°-80°) | 1495.1 | 6.8 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 87.2 | 0.4 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G4**
Type IV Short



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

Scaled Data Report

REPORT NUMBER: P1367207
CATALOG NUMBER: GSS-SB5A-740-U-T4W

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | *2601.6* | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 |
| 2.5° | 2793.9 | 2777.9 | 2761.9 | 2756.5 | 2735.1 | *2703.1* | 2703.1 | 2692.4 | 2665.7 | 2644.3 | 2628.3 |
| 5° | 2975.5 | 2980.9 | 2954.2 | 2932.8 | 2900.7 | *2847.3* | 2852.7 | 2804.6 | 2751.2 | 2692.4 | 2649.7 |
| 7.5° | 3151.8 | 3151.8 | 3119.8 | 3093.1 | 3050.3 | *2986.2* | 2986.2 | 2911.4 | 2847.3 | 2767.2 | 2708.4 |
| 10° | 3312.1 | 3301.4 | 3258.7 | 3226.6 | 3167.9 | *3098.4* | 3093.1 | 3018.3 | 2938.1 | 2847.3 | 2767.2 |
| 12.5° | 3435.0 | 3435.0 | 3392.2 | 3338.8 | 3274.7 | *3199.9* | 3194.6 | 3114.4 | 3034.3 | 2938.1 | 2842.0 |
| 15° | 3552.5 | 3525.8 | 3488.4 | 3418.9 | 3344.1 | *3285.4* | 3274.7 | 3205.2 | 3125.1 | 3039.6 | 2932.8 |
| 17.5° | 3595.2 | 3584.5 | 3536.5 | 3467.0 | 3397.6 | *3333.5* | 3333.5 | 3269.4 | 3210.6 | 3125.1 | 3018.3 |
| 20° | 3584.5 | 3568.5 | 3525.8 | 3467.0 | 3413.6 | *3360.2* | 3360.2 | 3312.1 | 3280.0 | 3199.9 | 3103.7 |
| 22.5° | 3531.1 | 3515.1 | 3488.4 | 3435.0 | 3408.2 | *3376.2* | 3376.2 | 3349.5 | 3338.8 | 3290.7 | 3199.9 |
| 25° | 3515.1 | 3504.4 | 3467.0 | 3418.9 | 3392.2 | *3386.9* | 3392.2 | 3397.6 | 3408.2 | 3370.9 | 3296.1 |
| 27.5° | 3525.8 | 3525.8 | 3493.7 | 3445.6 | 3413.6 | *3418.9* | 3424.3 | 3456.3 | 3488.4 | 3467.0 | 3402.9 |
| 30° | 3595.2 | 3579.2 | 3557.8 | 3509.7 | 3472.4 | *3477.7* | 3477.7 | 3541.8 | 3573.9 | 3547.1 | 3499.1 |
| 32.5° | 3712.7 | 3696.7 | 3664.7 | 3563.2 | 3525.8 | *3552.5* | 3563.2 | 3616.6 | 3638.0 | 3611.2 | 3589.9 |
| 35° | 3985.2 | 4001.2 | 3894.4 | 3712.7 | 3611.2 | *3632.6* | 3643.3 | 3680.7 | 3707.4 | 3696.7 | 3675.4 |
| 37.5° | 4482.0 | 4487.3 | 4353.8 | 4027.9 | 3792.9 | *3728.8* | 3734.1 | 3787.5 | 3819.6 | 3782.2 | 3766.2 |
| 40° | 5101.7 | 5107.0 | 4920.1 | 4476.7 | 4081.3 | *3921.1* | 3915.7 | 3926.4 | 3974.5 | 3910.4 | 3899.7 |
| 42.5° | 5774.8 | 5700.0 | 5539.7 | 5032.2 | 4508.7 | *4241.6* | 4193.5 | 4161.5 | 4220.2 | 4140.1 | 4086.7 |
| 45° | 6415.8 | 6362.4 | 6143.4 | 5619.9 | 5021.6 | *4663.6* | 4615.6 | 4455.3 | 4551.5 | 4487.3 | 4391.2 |
| 47.5° | 6950.0 | 6907.3 | 6741.7 | 6255.6 | 5603.8 | *5171.1* | 5096.3 | 4845.3 | 5016.2 | 4984.2 | 4866.6 |
| 50° | 7345.4 | 7302.6 | 7190.4 | 6891.3 | 6341.0 | *5737.4* | 5667.9 | 5363.4 | 5539.7 | 5598.5 | 5507.7 |
| 52.5° | 7633.8 | 7623.1 | 7580.4 | 7532.3 | 7088.9 | *6394.5* | 6314.3 | 5935.1 | 6223.5 | 6335.7 | 6309.0 |
| 55° | 8071.9 | 8050.5 | 8066.5 | 8146.7 | 7890.3 | *7094.3* | 6976.8 | 6533.4 | 6928.7 | 7137.0 | 7179.8 |
| 57.5° | 8488.6 | 8488.6 | 8627.5 | 8835.8 | 8803.7 | *7847.5* | 7708.6 | 7233.2 | 7783.4 | 7884.9 | 8087.9 |
| 60° | 8878.5 | 8915.9 | 9108.2 | 9567.7 | 9658.5 | *8664.9* | 8499.2 | 8039.8 | 8595.4 | 8707.6 | 9076.2 |
| 62.5° | 8712.9 | 8803.7 | 9418.1 | 10160.6 | 10459.8 | *9541.0* | 9375.4 | 8926.6 | 9508.9 | 9375.4 | 9706.6 |
| 65° | 7868.9 | 8007.8 | 8958.7 | 10198.0 | 11239.7 | *10502.5* | 10363.6 | 9925.6 | 10011.1 | 9476.9 | 10059.1 |
| 67.5° | 6982.1 | 7185.1 | 8290.9 | 9744.0 | 11442.7 | *11485.5* | 11362.6 | 10539.9 | 10005.7 | 9583.7 | 10417.1 |
| 70° | *6186.1* | *6351.7* | *7655.2* | *9663.8* | *11138.2* | *12121.2* | *12094.5* | *10630.7* | *10294.2* | *9679.8* | *10192.7* |
| 72.5° | 4337.8 | 4567.5 | 5903.0 | 8921.3 | 11229.1 | *11084.8* | 11026.1 | 11266.4 | 10507.9 | 9327.3 | 9033.5 |
| 75° | 1559.9 | 1650.7 | 3061.0 | 6036.6 | 8926.6 | *10497.2* | 10545.3 | 10438.4 | 10299.5 | 8355.0 | 6789.8 |
| 77.5° | 464.8 | 496.8 | 870.8 | 2393.3 | 5005.5 | *8424.5* | 8504.6 | 8221.5 | 7740.7 | 5037.6 | 2569.5 |
| 80° | 251.1 | 272.4 | 411.3 | 699.8 | 1875.1 | *4754.5* | 4973.5 | 4209.6 | 2788.6 | 1330.2 | 576.9 |
| 82.5° | 122.9 | 133.6 | 213.7 | 341.9 | 806.7 | *1511.8* | 1517.2 | 1346.2 | 908.2 | 400.7 | 213.7 |
| 85° | 42.7 | 48.1 | 69.4 | 128.2 | 277.8 | *309.8* | 309.8 | 288.5 | 267.1 | 197.7 | 96.2 |
| 87.5° | 10.7 | 10.7 | 16.0 | 21.4 | 26.7 | *32.1* | 32.1 | 37.4 | 42.7 | 48.1 | 48.1 |
| 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

Scaled Data Report

REPORT NUMBER: P1367207
CATALOG NUMBER: GSS-SB5A-740-U-T4W

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 | 2601.6 |
| 2.5° | 2617.6 | 2596.3 | 2580.2 | 2564.2 | 2553.5 | 2532.1 | 2526.8 | 2526.8 | 2521.5 | 2526.8 | 2521.5 |
| 5° | 2633.6 | 2601.6 | 2574.9 | 2553.5 | 2542.8 | 2532.1 | 2532.1 | 2537.5 | 2532.1 | 2537.5 | 2532.1 |
| 7.5° | 2665.7 | 2644.3 | 2617.6 | 2585.6 | 2580.2 | 2574.9 | 2580.2 | 2590.9 | 2596.3 | 2601.6 | 2590.9 |
| 10° | 2729.8 | 2697.8 | 2660.4 | 2644.3 | 2633.6 | 2628.3 | 2644.3 | 2665.7 | 2671.0 | 2681.7 | 2671.0 |
| 12.5° | 2804.6 | 2767.2 | 2740.5 | 2703.1 | 2703.1 | 2708.4 | 2724.5 | 2751.2 | 2767.2 | 2783.2 | 2767.2 |
| 15° | 2890.1 | 2852.7 | 2815.3 | 2783.2 | 2777.9 | 2788.6 | 2815.3 | 2842.0 | 2847.3 | 2852.7 | 2842.0 |
| 17.5° | 2975.5 | 2938.1 | 2890.1 | 2852.7 | 2847.3 | 2874.0 | 2884.7 | 2884.7 | 2874.0 | 2874.0 | 2858.0 |
| 20° | 3061.0 | 3034.3 | 2986.2 | 2916.8 | 2938.1 | 2948.8 | 2916.8 | 2890.1 | 2874.0 | 2868.7 | 2852.7 |
| 22.5° | 3162.5 | 3119.8 | 3066.4 | 2991.6 | 3007.6 | 2964.9 | 2906.1 | 2895.4 | 2879.4 | 2884.7 | 2868.7 |
| 25° | 3258.7 | 3232.0 | 3146.5 | 3050.3 | 3007.6 | 2938.1 | 2900.7 | 2900.7 | 2884.7 | 2895.4 | 2890.1 |
| 27.5° | 3370.9 | 3338.8 | 3221.3 | 3082.4 | 2970.2 | 2895.4 | 2890.1 | 2890.1 | 2863.4 | 2868.7 | 2863.4 |
| 30° | 3483.0 | 3435.0 | 3280.0 | 3055.7 | 2879.4 | 2831.3 | 2847.3 | 2842.0 | 2831.3 | 2847.3 | 2858.0 |
| 32.5° | 3579.2 | 3541.8 | 3312.1 | 2991.6 | 2767.2 | 2745.8 | 2756.5 | 2783.2 | 2809.9 | 2826.0 | 2847.3 |
| 35° | 3680.7 | 3638.0 | 3338.8 | 2879.4 | 2644.3 | 2612.3 | 2606.9 | 2687.1 | 2735.1 | 2761.9 | 2777.9 |
| 37.5° | 3787.5 | 3734.1 | 3354.8 | 2756.5 | 2526.8 | 2430.6 | 2446.7 | 2510.8 | 2564.2 | 2612.3 | 2649.7 |
| 40° | 3931.8 | 3878.4 | 3376.2 | 2623.0 | 2403.9 | 2275.7 | 2254.4 | 2270.4 | 2307.8 | 2377.2 | 2414.6 |
| 42.5° | 4145.5 | 4060.0 | 3376.2 | 2452.0 | 2227.6 | 2136.8 | 2062.0 | 2003.3 | 1981.9 | 2024.6 | 2046.0 |
| 45° | 4439.3 | 4311.1 | 3354.8 | 2275.7 | 2024.6 | 1960.5 | 1837.7 | 1741.5 | 1656.0 | 1613.3 | 1602.6 |
| 47.5° | 4925.4 | 4701.0 | 3333.5 | 2104.8 | 1832.3 | 1752.2 | 1602.6 | 1490.4 | 1367.6 | 1255.4 | 1228.7 |
| 50° | 5577.1 | 5219.2 | 3338.8 | 1933.8 | 1640.0 | 1533.2 | 1399.6 | 1282.1 | 1137.9 | 1031.0 | 1015.0 |
| 52.5° | 6437.2 | 5945.7 | 3370.9 | 1746.9 | 1453.0 | 1356.9 | 1244.7 | 1127.2 | 982.9 | 902.8 | 897.5 |
| 55° | 7436.2 | 6821.8 | 3483.0 | 1538.5 | 1282.1 | 1207.3 | 1127.2 | 1015.0 | 892.1 | 822.7 | 812.0 |
| 57.5° | 8600.7 | 7836.8 | 3707.4 | 1319.5 | 1127.2 | 1100.5 | 1036.4 | 929.5 | 828.0 | 758.6 | 747.9 |
| 60° | 9749.3 | 8819.8 | 3878.4 | 1127.2 | 1004.3 | 1004.3 | 945.5 | 865.4 | 726.5 | 667.8 | 657.1 |
| 62.5° | 10283.5 | 9124.3 | 3552.5 | 972.3 | 908.2 | 924.2 | 886.8 | 774.6 | 731.9 | 705.2 | 689.1 |
| 65° | 10411.7 | 8953.3 | 2671.0 | 854.7 | 828.0 | 881.4 | 822.7 | 828.0 | 790.6 | 763.9 | 747.9 |
| 67.5° | 10256.8 | 8467.2 | 1709.5 | 753.2 | 769.3 | 828.0 | 908.2 | 913.5 | 790.6 | 731.9 | 721.2 |
| 70° | *9348.6* | *7425.5* | *1052.4* | *667.8* | *689.1* | *817.3* | *1009.7* | *860.1* | *747.9* | *699.8* | *678.4* |
| 72.5° | 7799.4 | 6127.4 | 737.2 | 587.6 | 587.6 | 774.6 | 908.2 | 806.7 | 689.1 | 662.4 | 635.7 |
| 75° | 5475.6 | 4145.5 | 539.6 | 491.5 | 491.5 | 603.7 | 838.7 | 737.2 | 646.4 | 657.1 | 646.4 |
| 77.5° | 1864.4 | 1346.2 | 390.0 | 379.3 | 363.3 | 518.2 | 747.9 | 705.2 | 598.3 | 566.3 | 523.5 |
| 80° | 550.2 | 432.7 | 288.5 | 267.1 | 261.8 | 416.7 | 630.4 | 518.2 | 427.4 | 390.0 | 363.3 |
| 82.5° | 213.7 | 192.3 | 187.0 | 170.9 | 165.6 | 277.8 | 416.7 | 357.9 | 320.5 | 267.1 | 261.8 |
| 85° | 85.5 | 85.5 | 96.2 | 96.2 | 85.5 | 149.6 | 251.1 | 197.7 | 187.0 | 165.6 | 160.3 |
| 87.5° | 42.7 | 42.7 | 37.4 | 26.7 | 26.7 | 32.1 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |
| 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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

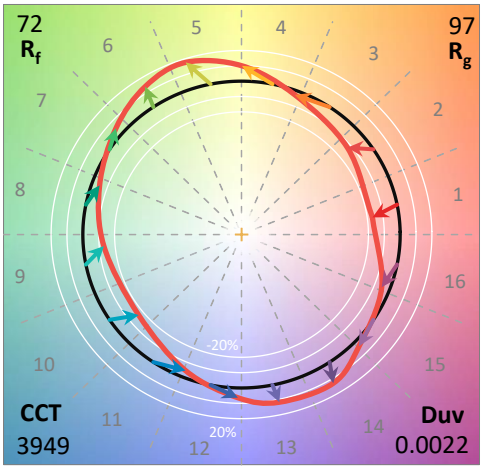
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-1 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/15/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GSS-SB1A-740-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3949 |
| CIE u': | 0.2248 |
| CIE v': | 0.5053 |
| Duv: | 0.0022 |
| CIE x: | 0.3844 |
| CIE y: | 0.3840 |
| CIE z: | 0.2316 |
| Peak Wavelength (nm): | 440 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 30.60026 |
| Rf: | 71.8 |
| Rg: | 96.5 |

| | |
|---|---|
| CRI (Ra): | 70.7 |
| R1: | 68.0 |
| R2: | 76.0 |
| R3: | 84.3 |
| R4: | 72.0 |
| R5: | 68.6 |
| R6: | 68.3 |
| R7: | 77.9 |
| R8: | 50.3 |
| R9: | -36.7 |
| R10: | 45.1 |
| R11: | 70.7 |
| R12: | 47.1 |
| R13: | 68.5 |
| R14: | 91.1 |
| R15: | 58.7 |




## Test Conditions

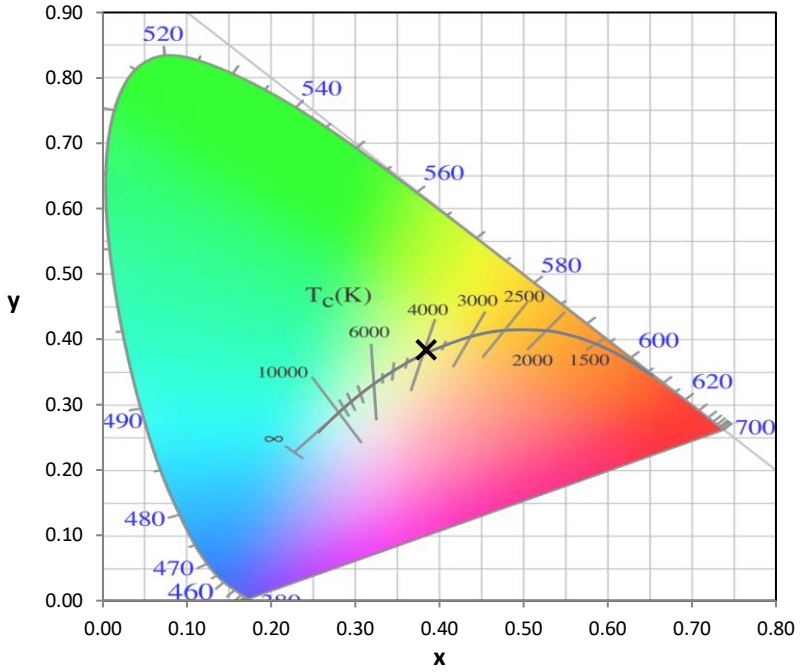
| | |
|---|---|
| Stabilization Time: | 34M |
| Operation Time: | 1H 34M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-1

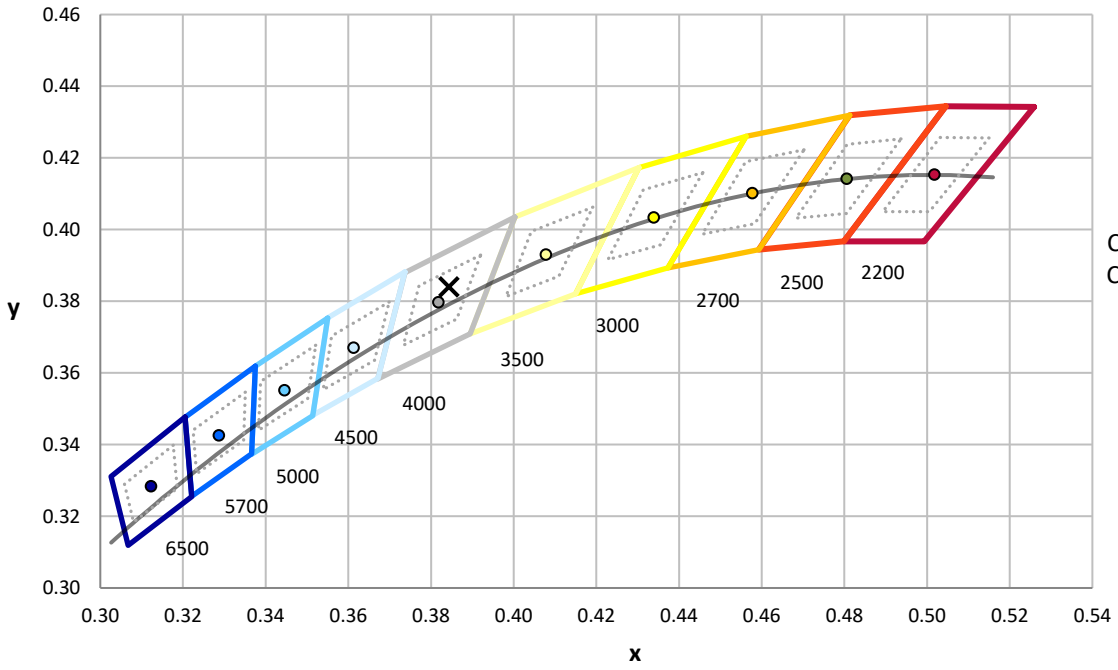
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC 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: SP1-2407-184-1

## CIE 1931 Chromaticity Diagram




## CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

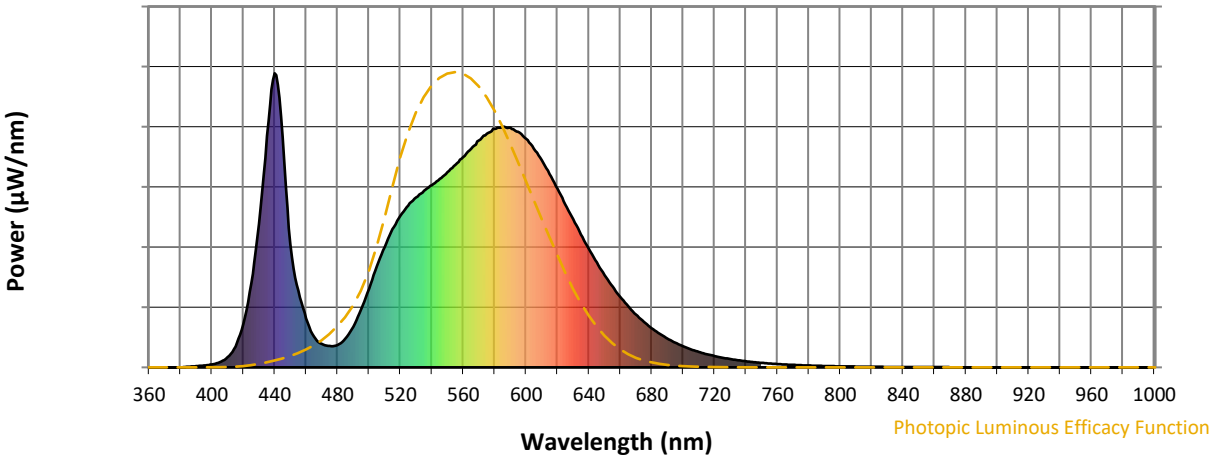



CCT = 3949K
CIE x = 0.3844
CIE y = 0.3840
Duv = 0.0022

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-1

## Photopic Flux vs. Wavelength

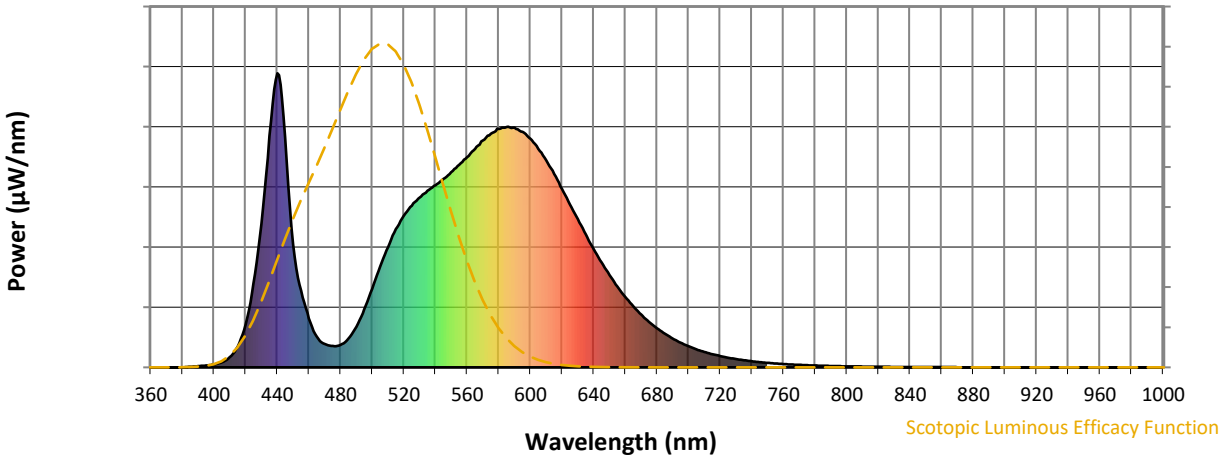



## Photopic Lumens: NR

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-184-1

## Scotopic Flux vs. Wavelength

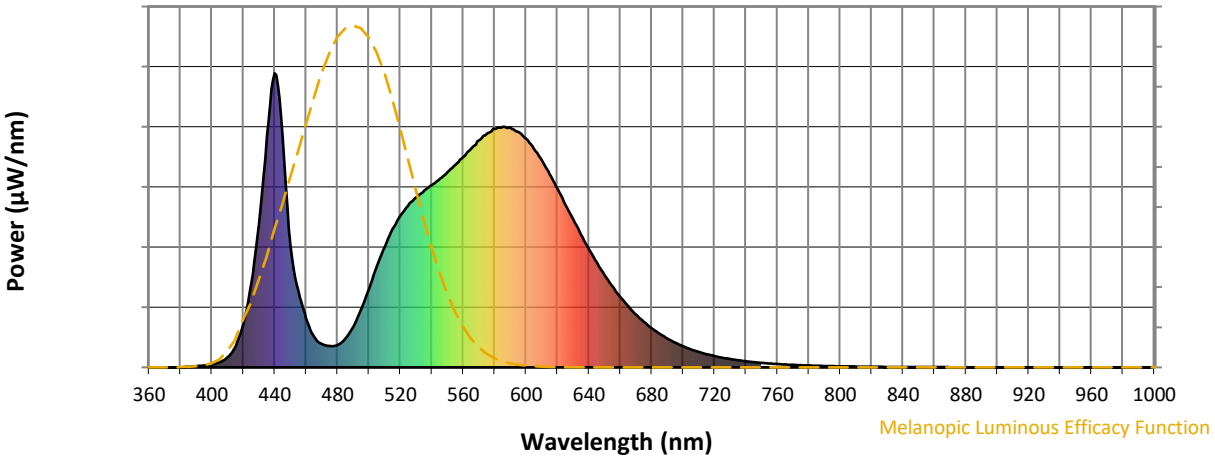



**Scotopic Lumens: NR** **S/P: 1.47**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-184-1

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.78**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

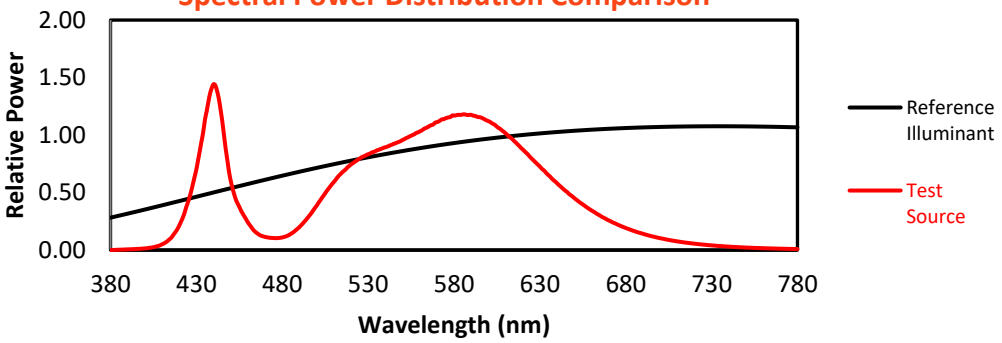
REPORT NUMBER: SP1-2407-184-1

# TM-30-18

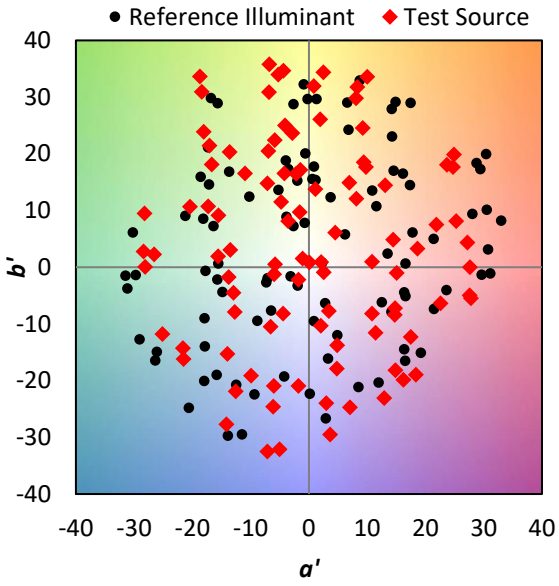
## Summary

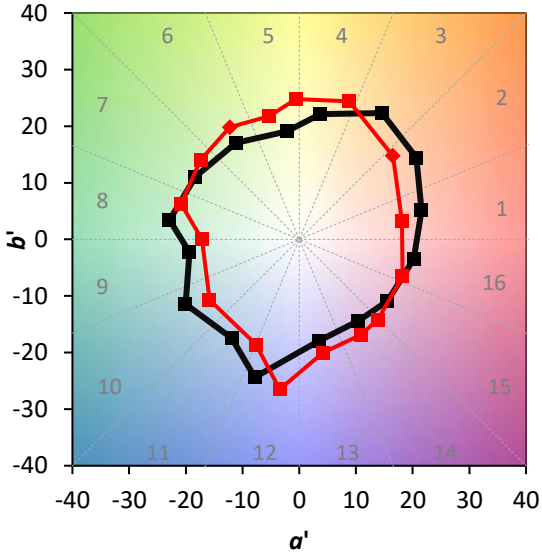
$R_f$ = 71.8
$R_g$ = 96.5
CIE $R_a$ = 70.7
$R_9$ = -36.7

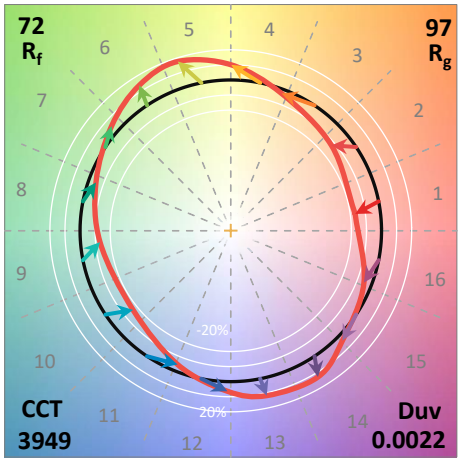
## Spectral Power Distribution Comparison

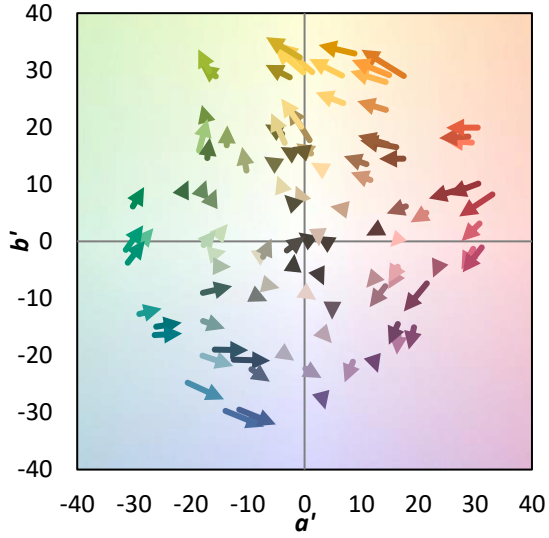



## Color Vector Graphics



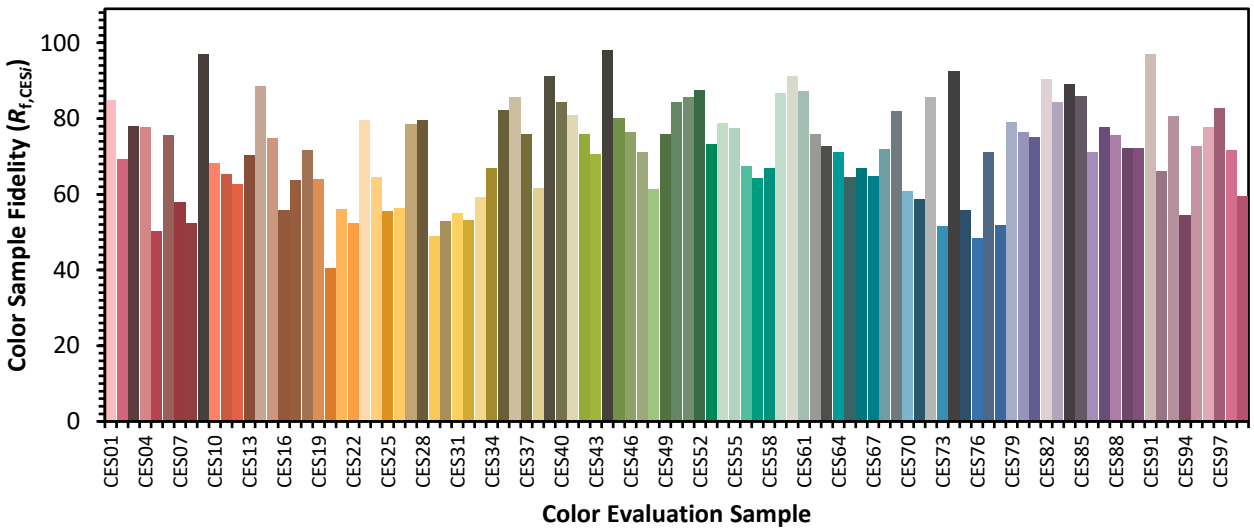



REPORT NUMBER: SP1-2407-184-1

# TM-30-18

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

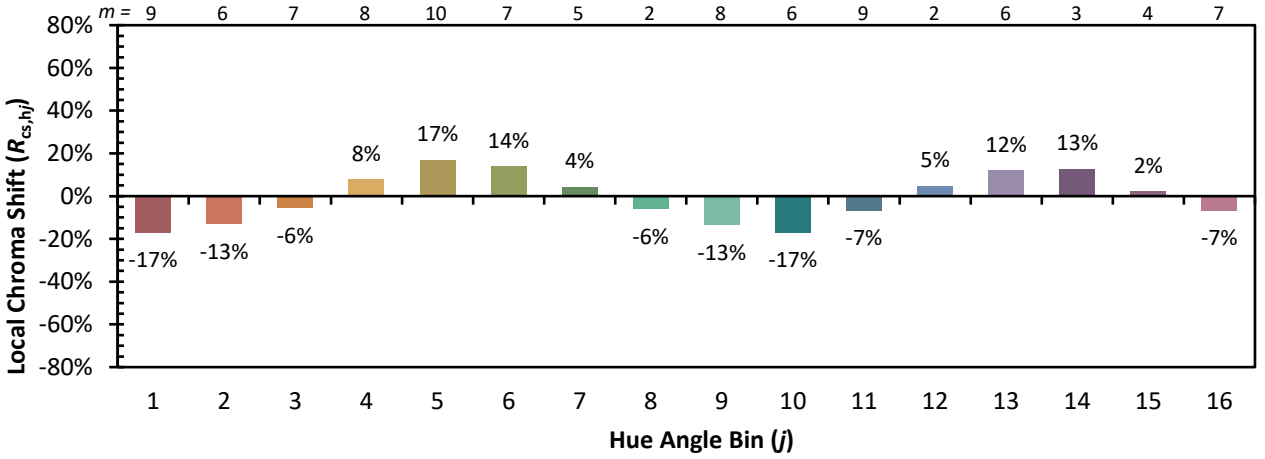
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 | |

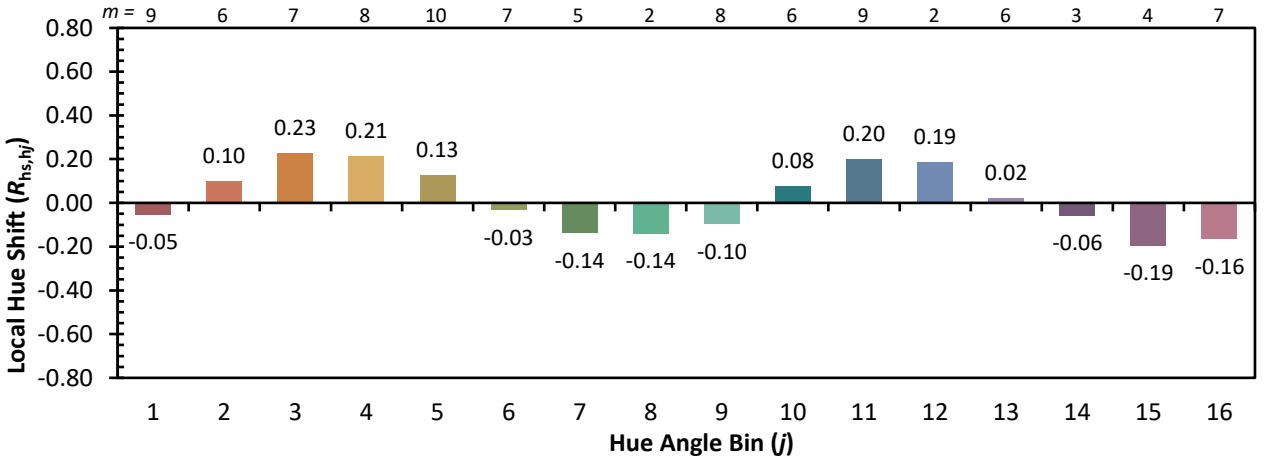


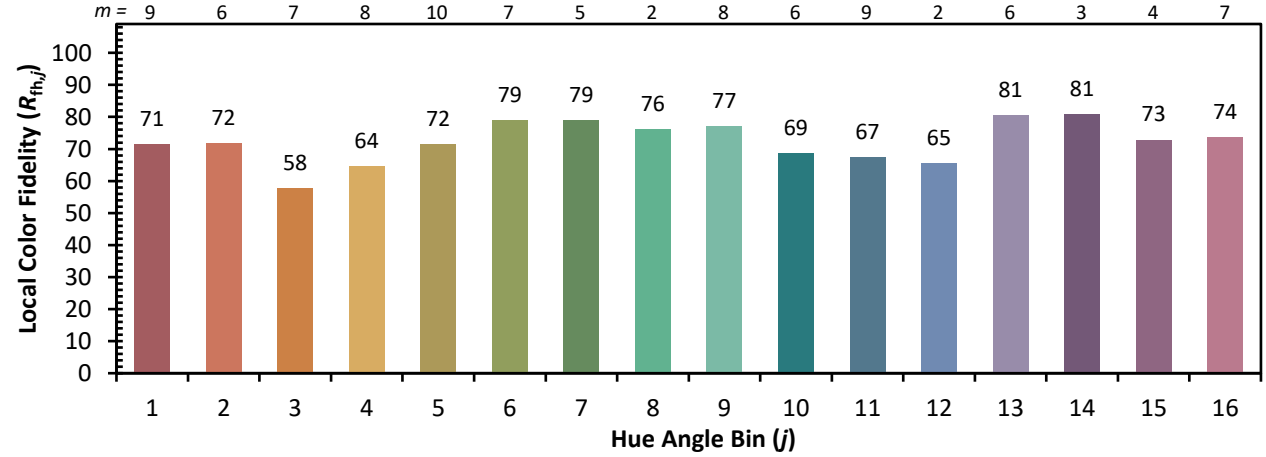
REPORT NUMBER: SP1-2407-184-1

**TM-30-18**

## Color Rendition by Hue-Angle Bin



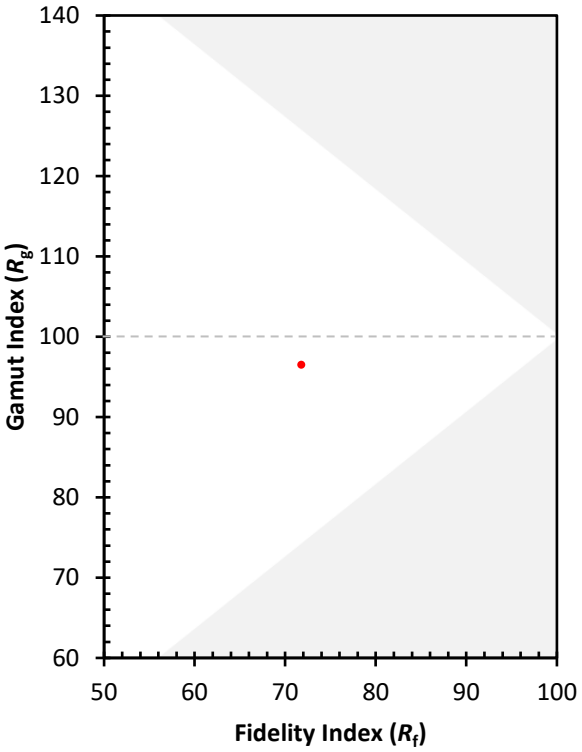



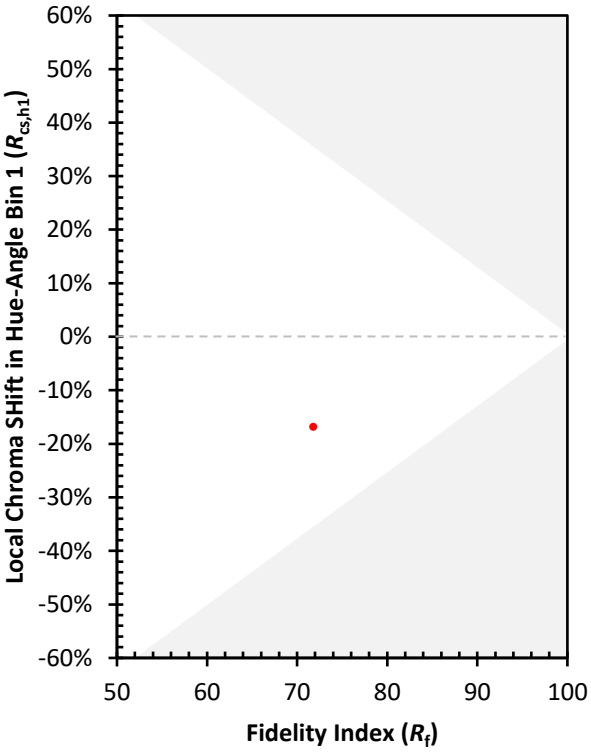



REPORT NUMBER: SP1-2407-184-1

# TM-30-18

## Measure Comparisons




(END OF REPORT)