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: P1359140

Luminaire Tested: **GSS-SB4B-740-U-T2**

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: | P1359140 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4B-740-U-T2 |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 148W 70CRI 4000K FIXTURE w/ TYPE II DISTRIBUTION OPTIC |
| Light Source: | (104) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 22606.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 152.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type II - Medium |
| BUG Rating: | B3 - U0 - G3 |

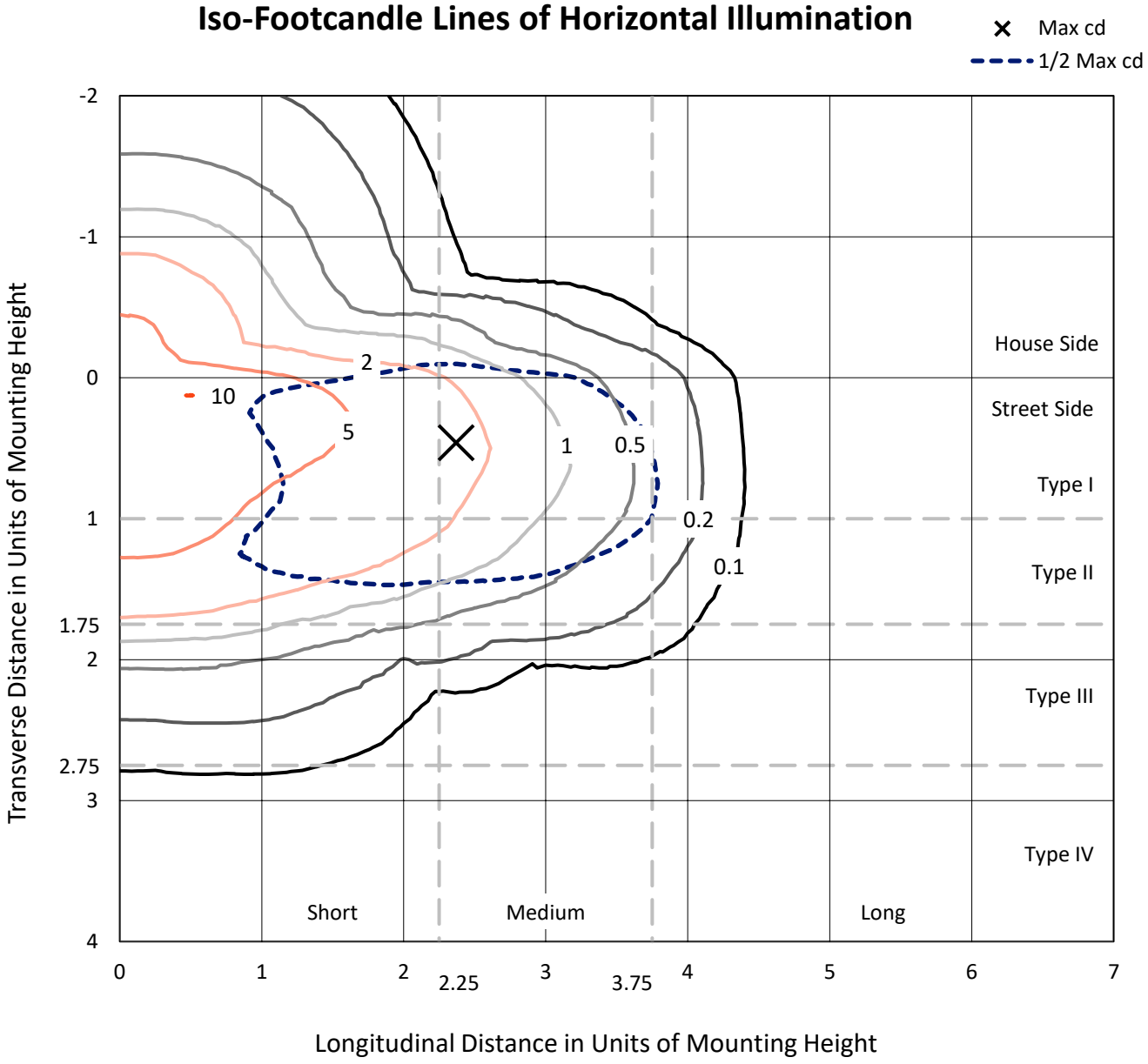
| | |
|---|---|
| Input Watts (W): | 148 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 13.6% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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REPORT NUMBER: P1359140
CATALOG NUMBER: GSS-SB4B-740-U-T2

## Iso-Footcandle Lines of Horizontal Illumination



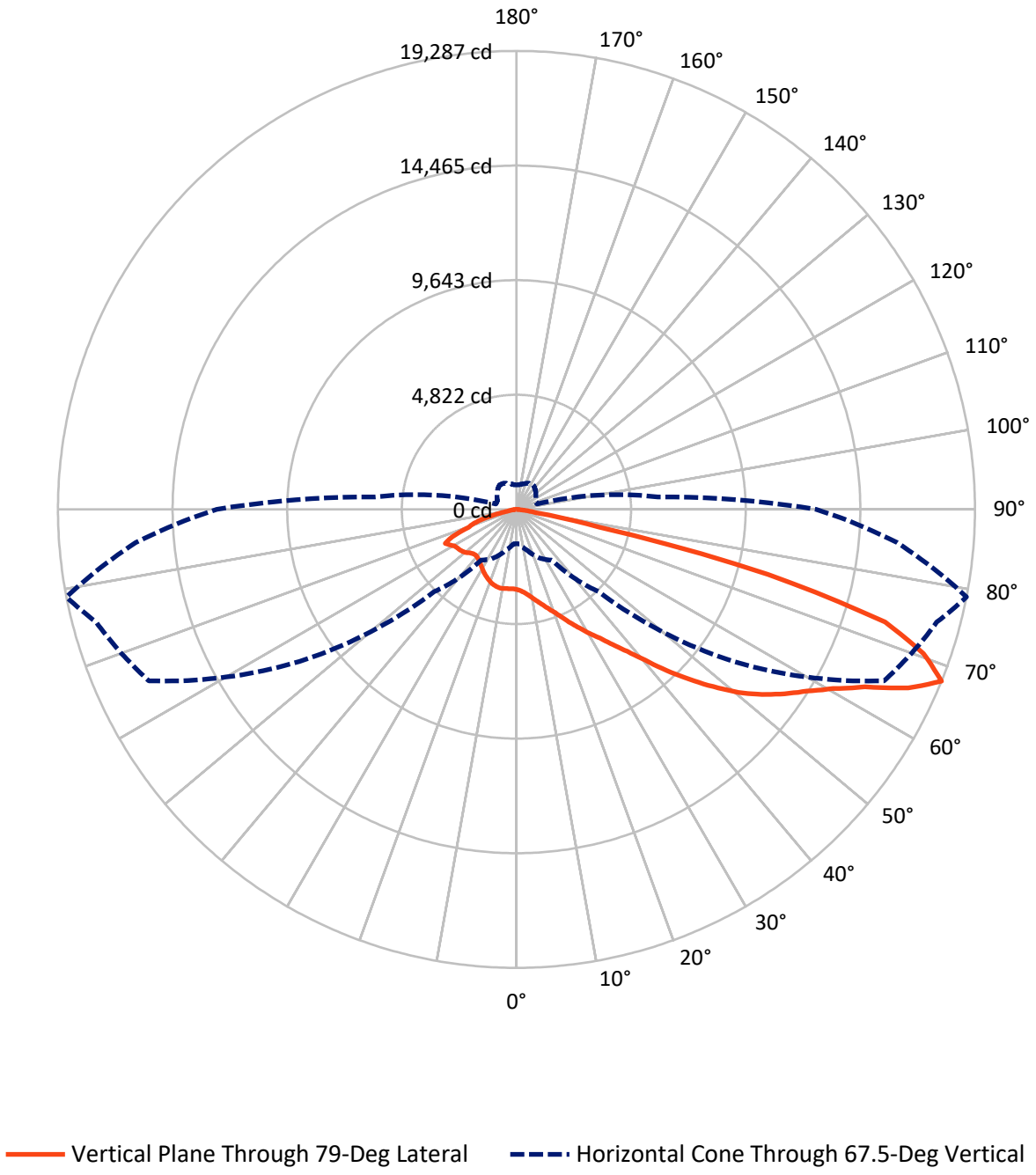

Based on 20 foot mounting height. Maximum calculated value = 10 fc
Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

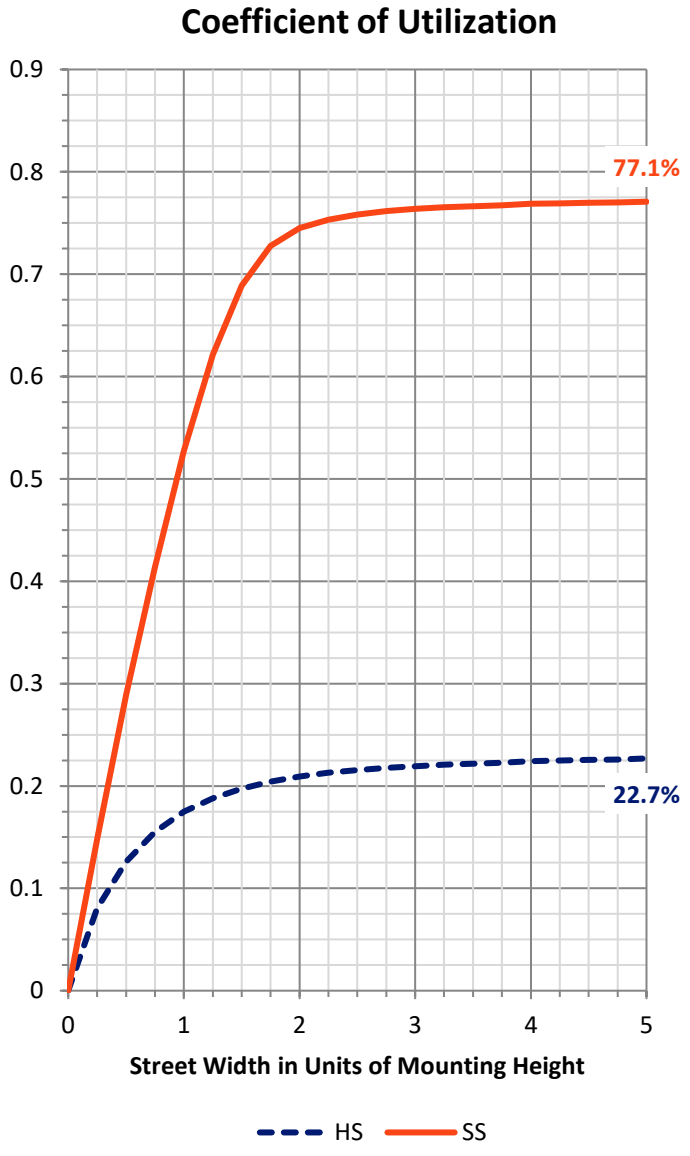
REPORT NUMBER: P1359140
CATALOG NUMBER: GSS-SB4B-740-U-T2

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 5179.7 | 0.0 | 5179.7 |
| | % Fixture | 22.9 | 0.0 | 22.9 |
| **Street Side** | Lumens | 17426.8 | 0.0 | 17426.8 |
| | % Fixture | 77.1 | 0.0 | 77.1 |
| **Total** | Lumens | 22606.5 | 0.0 | 22606.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 322.2 | 1.4 |
| 10°-20° | 970.0 | 4.3 |
| 20°-30° | 1638.9 | 7.2 |
| 30°-40° | 2528.3 | 11.2 |
| 40°-50° | 3861.1 | 17.1 |
| 50°-60° | 5338.6 | 23.6 |
| 60°-70° | 5395.0 | 23.9 |
| 70°-80° | 2373.6 | 10.5 |
| 80°-90° | 178.8 | 0.8 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 22606.5 | 100.0 |
| 0°-180° | 22606.5 | 100.0 |



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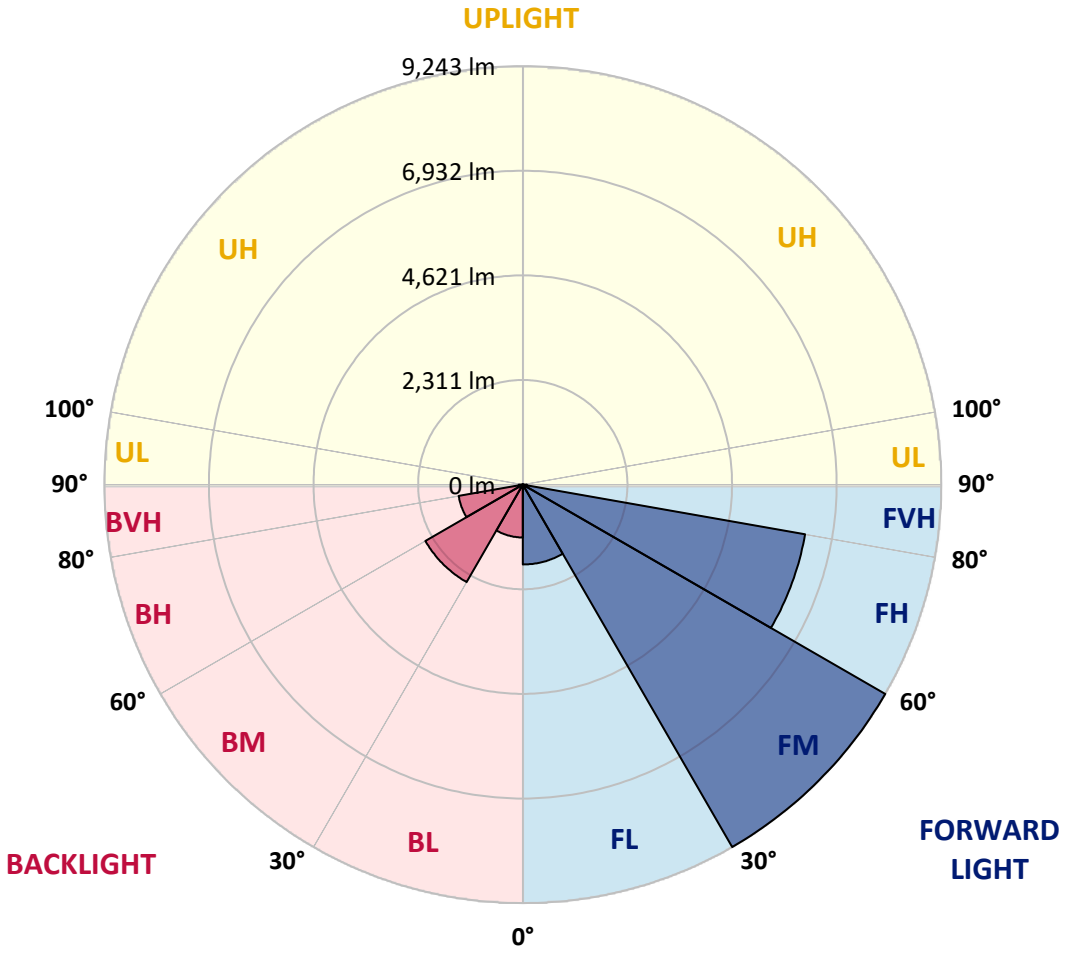
Scaled Data Report

REPORT NUMBER: P1359140
CATALOG NUMBER: GSS-SB4B-740-U-T2

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1763.7 | 7.8 | | | |
| FM | (30°-60°) | 9242.6 | 40.9 | | | |
| FH | (60°-80°) | 6329.9 | 28.0 | | | G3/7500 |
| FVH | (80°-90°) | 90.6 | 0.4 | | | G1/100 |
| BL | (0°-30°) | 1167.3 | 5.2 | B3/2500 | | |
| BM | (30°-60°) | 2485.4 | 11.0 | B2/2500 | | |
| BH | (60°-80°) | 1438.8 | 6.4 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 88.2 | 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-G3**
Type II Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | *3371.8* | 3371.8 |
| 2.5° | 3528.3 | 3583.8 | 3583.8 | 3558.6 | 3548.5 | 3543.4 | 3508.1 | 3467.7 | 3452.6 | *3427.3* | 3412.2 |
| 5° | 3745.3 | 3745.3 | 3755.4 | 3730.2 | 3745.3 | 3725.1 | 3674.7 | 3624.2 | 3563.6 | *3518.2* | 3498.0 |
| 7.5° | 3765.5 | 3805.9 | 3831.1 | 3831.1 | 3861.4 | 3866.5 | 3841.2 | 3785.7 | 3710.0 | *3639.3* | 3604.0 |
| 10° | 3785.7 | 3821.0 | 3821.0 | 3861.4 | 3927.0 | 3977.5 | 3992.7 | 3972.5 | 3851.3 | *3800.9* | 3730.2 |
| 12.5° | 3740.3 | 3780.7 | 3795.8 | 3876.6 | 3967.4 | 4063.3 | 4134.0 | 4144.1 | 4068.4 | *3977.5* | 3871.5 |
| 15° | 3583.8 | 3619.1 | 3679.7 | 3800.9 | 3962.4 | 4108.8 | 4245.0 | 4320.8 | 4235.0 | *4169.3* | 4023.0 |
| 17.5° | 3371.8 | 3392.0 | 3493.0 | 3649.4 | 3871.5 | 4118.9 | 4356.1 | 4502.5 | 4482.3 | *4396.5* | 4224.9 |
| 20° | 3351.6 | 3371.8 | 3402.1 | 3518.2 | 3775.6 | 4083.5 | 4426.8 | 4709.4 | 4765.0 | *4633.7* | 4421.7 |
| 22.5° | 3523.2 | 3543.4 | 3543.4 | 3558.6 | 3720.1 | 4053.2 | 4497.4 | 4931.5 | 5057.7 | *4946.7* | 4674.1 |
| 25° | 3760.5 | 3800.9 | 3755.4 | 3720.1 | 3775.6 | 4073.4 | 4537.8 | 5183.9 | 5431.2 | *5295.0* | 4956.8 |
| 27.5° | 4098.7 | 4093.6 | 4053.2 | 3947.2 | 3932.1 | 4134.0 | 4648.9 | 5380.8 | 5789.6 | *5648.3* | 5249.5 |
| 30° | 4568.1 | 4593.3 | 4502.5 | 4280.4 | 4179.4 | 4270.3 | 4800.3 | 5542.3 | 6168.2 | *6052.1* | 5527.1 |
| 32.5° | 5098.1 | 5088.0 | 4977.0 | 4765.0 | 4517.6 | 4492.4 | 4941.6 | 5713.9 | 6602.3 | *6455.9* | 5875.4 |
| 35° | 5668.5 | 5658.4 | 5623.0 | 5259.6 | 4936.6 | 4800.3 | 5168.8 | 5910.8 | 7107.0 | *6985.9* | 6284.3 |
| 37.5° | 6183.3 | 6228.8 | 6334.8 | 5749.2 | 5406.0 | 5204.1 | 5461.5 | 6238.9 | 7753.1 | *7576.5* | 6779.0 |
| 40° | 6622.5 | 6703.2 | 6804.2 | 6274.2 | 5845.1 | 5673.5 | 5850.2 | 6773.9 | 8444.7 | *8338.7* | 7374.6 |
| 42.5° | 7026.3 | 7081.8 | 7071.7 | 6748.7 | 6380.2 | 6188.4 | 6339.8 | 7329.1 | 9338.1 | *9262.4* | 8106.5 |
| 45° | 7521.0 | 7581.5 | 7556.3 | 7248.4 | 6879.9 | 6708.3 | 6980.9 | 7980.3 | 10186.1 | *10196.2* | 8798.0 |
| 47.5° | 8005.5 | 8066.1 | 8051.0 | 7768.3 | 7415.0 | 7273.6 | 7647.1 | 8747.5 | 11003.8 | *11140.1* | 9550.1 |
| 50° | 8459.8 | 8515.3 | 8545.6 | 8369.0 | 8061.0 | 7909.6 | 8298.3 | 9469.3 | 11796.3 | *12104.2* | 10266.9 |
| 52.5° | 8586.0 | 8656.7 | 8863.6 | 8929.2 | 8793.0 | 8611.2 | 8893.9 | 10160.9 | 12477.7 | *12937.0* | 10958.4 |
| 55° | 8172.1 | 8293.2 | 8737.4 | 9070.6 | 9474.4 | 9494.6 | 9514.8 | 10832.2 | 13073.3 | *13689.1* | 11589.3 |
| 57.5° | 7450.3 | 7470.5 | 7990.4 | 8666.8 | 9625.8 | 10483.9 | 10584.9 | 11614.6 | 13653.8 | *14421.0* | 12215.2 |
| 60° | 5850.2 | 5744.2 | 6587.1 | 7733.0 | 9080.7 | 10877.6 | 12290.9 | 12826.0 | 14375.6 | *15304.4* | 12967.3 |
| 62.5° | 3134.6 | 3144.7 | 3841.2 | 5264.7 | 7521.0 | 10494.0 | 13754.8 | 14633.0 | 15430.6 | *16450.2* | 14082.9 |
| 65° | 1968.6 | 2044.3 | 2438.0 | 3069.0 | 4553.0 | 8338.7 | 13845.6 | 17035.7 | 17101.3 | *18115.9* | 15481.0 |
| 67.5° | *1438.6* | *1458.8* | *1791.9* | *2251.2* | *2609.6* | *4891.1* | *11145.1* | *17066.0* | *18307.7* | *19286.9* | *16076.7* |
| 70° | 1070.1 | 1080.2 | 1317.4 | 1696.0 | 1903.0 | 2291.6 | 7102.0 | 14769.3 | 17681.8 | *18166.4* | 14587.6 |
| 72.5° | 782.4 | 787.4 | 913.6 | 1246.8 | 1499.1 | 1362.9 | 3336.5 | 10640.4 | 15354.9 | *16218.0* | 13123.8 |
| 75° | 550.2 | 560.3 | 651.1 | 863.1 | 1009.5 | 949.0 | 1272.0 | 6652.8 | 11024.0 | *10928.1* | 9166.5 |
| 77.5° | 413.9 | 419.0 | 479.5 | 610.8 | 686.5 | 620.9 | 716.8 | 3109.3 | 3937.1 | *3553.5* | 2892.3 |
| 80° | 302.9 | 318.0 | 348.3 | 383.6 | 459.3 | 398.8 | 403.8 | 873.2 | 949.0 | *832.9* | 747.0 |
| 82.5° | 161.5 | 181.7 | 232.2 | 232.2 | 267.5 | 237.2 | 212.0 | 388.7 | 408.9 | *383.6* | 333.1 |
| 85° | 50.5 | 50.5 | 55.5 | 70.7 | 106.0 | 106.0 | 106.0 | 131.2 | 136.3 | *136.3* | 116.1 |
| 87.5° | 10.1 | 10.1 | 10.1 | 10.1 | 15.1 | 20.2 | 30.3 | 40.4 | 45.4 | *50.5* | 50.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1359140
CATALOG NUMBER: GSS-SB4B-740-U-T2

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 | 3371.8 |
| 2.5° | 3402.1 | 3366.8 | 3331.4 | 3270.9 | 3240.6 | 3195.1 | 3154.8 | 3134.6 | 3119.4 | 3114.4 | 3114.4 |
| 5° | 3467.7 | 3412.2 | 3301.1 | 3195.1 | 3099.2 | 3013.4 | 2947.8 | 2897.3 | 2867.0 | 2841.8 | 2841.8 |
| 7.5° | 3533.3 | 3457.6 | 3291.0 | 3104.3 | 2968.0 | 2862.0 | 2771.1 | 2740.9 | 2730.8 | 2705.5 | 2690.4 |
| 10° | 3644.4 | 3523.2 | 3275.9 | 3008.4 | 2816.6 | 2725.7 | 2685.3 | 2675.2 | 2680.3 | 2685.3 | 2685.3 |
| 12.5° | 3730.2 | 3599.0 | 3235.5 | 2887.2 | 2700.5 | 2650.0 | 2655.0 | 2680.3 | 2720.7 | 2715.6 | 2705.5 |
| 15° | 3851.3 | 3654.5 | 3154.8 | 2745.9 | 2609.6 | 2609.6 | 2660.1 | 2715.6 | 2756.0 | 2781.2 | 2766.1 |
| 17.5° | 3992.7 | 3720.1 | 3033.6 | 2614.7 | 2533.9 | 2579.3 | 2685.3 | 2740.9 | 2811.5 | 2826.7 | 2816.6 |
| 20° | 4169.3 | 3775.6 | 2897.3 | 2488.5 | 2483.4 | 2579.3 | 2670.2 | 2751.0 | 2806.5 | 2821.6 | 2831.7 |
| 22.5° | 4341.0 | 3826.1 | 2720.7 | 2397.6 | 2427.9 | 2549.0 | 2634.9 | 2720.7 | 2745.9 | 2761.0 | 2766.1 |
| 25° | 4517.6 | 3876.6 | 2559.1 | 2327.0 | 2387.5 | 2508.7 | 2579.3 | 2614.7 | 2619.7 | 2609.6 | 2609.6 |
| 27.5° | 4709.4 | 3881.6 | 2397.6 | 2271.4 | 2342.1 | 2448.1 | 2488.5 | 2498.6 | 2478.4 | 2407.7 | 2387.5 |
| 30° | 4911.3 | 3831.1 | 2266.4 | 2221.0 | 2291.6 | 2377.4 | 2407.7 | 2377.4 | 2306.8 | 2205.8 | 2195.7 |
| 32.5° | 5077.9 | 3755.4 | 2170.5 | 2160.4 | 2236.1 | 2311.8 | 2311.8 | 2256.3 | 2150.3 | 2049.3 | 2044.3 |
| 35° | 5330.3 | 3649.4 | 2074.6 | 2120.0 | 2185.6 | 2221.0 | 2231.0 | 2150.3 | 2034.2 | 1938.3 | 1928.2 |
| 37.5° | 5577.6 | 3558.6 | 2034.2 | 2069.5 | 2130.1 | 2160.4 | 2130.1 | 2049.3 | 1973.6 | 1892.9 | 1892.9 |
| 40° | 5961.2 | 3503.0 | 1983.7 | 2034.2 | 2084.7 | 2089.7 | 2034.2 | 1973.6 | 1983.7 | 1938.3 | 1933.2 |
| 42.5° | 6380.2 | 3498.0 | 1963.5 | 1998.9 | 2034.2 | 2024.1 | 1943.3 | 1943.3 | 1958.5 | 1872.7 | 1852.5 |
| 45° | 6859.7 | 3568.7 | 1963.5 | 1948.4 | 1968.6 | 1938.3 | 1892.9 | 1882.8 | 1847.4 | 1721.2 | 1716.2 |
| 47.5° | 7359.4 | 3740.3 | 1973.6 | 1877.7 | 1872.7 | 1862.6 | 1842.4 | 1807.0 | 1701.0 | 1595.0 | 1579.9 |
| 50° | 7753.1 | 3977.5 | 2003.9 | 1786.9 | 1766.7 | 1802.0 | 1766.7 | 1706.1 | 1585.0 | 1484.0 | 1468.9 |
| 52.5° | 8222.6 | 4214.8 | 1983.7 | 1675.8 | 1650.6 | 1741.4 | 1706.1 | 1620.3 | 1529.4 | 1468.9 | 1453.7 |
| 55° | 8717.2 | 4462.1 | 1903.0 | 1524.4 | 1544.6 | 1665.7 | 1655.6 | 1559.7 | 1448.7 | 1367.9 | 1357.8 |
| 57.5° | 9211.9 | 4775.0 | 1766.7 | 1393.1 | 1468.9 | 1620.3 | 1579.9 | 1463.8 | 1388.1 | 1332.6 | 1322.5 |
| 60° | 9969.0 | 5224.3 | 1569.8 | 1256.9 | 1393.1 | 1524.4 | 1458.8 | 1423.4 | 1342.7 | 1297.2 | 1272.0 |
| 62.5° | 10948.3 | 5971.3 | 1312.4 | 1130.7 | 1287.1 | 1408.3 | 1403.2 | 1362.9 | 1292.2 | 1241.7 | 1226.6 |
| 65° | 12341.4 | 6683.0 | 1075.1 | 1009.5 | 1150.9 | 1267.0 | 1327.5 | 1292.2 | 1221.5 | 1166.0 | 1161.0 |
| 67.5° | *12608.9* | *5971.3* | *893.4* | *883.3* | *999.4* | *1130.7* | *1246.8* | *1221.5* | *1110.5* | *1039.8* | *1029.7* |
| 70° | 10973.5 | 4265.2 | 752.1 | 762.2 | 873.2 | 989.3 | 1115.5 | 1055.0 | 964.1 | 923.7 | 918.7 |
| 72.5° | 9741.9 | 3664.6 | 631.0 | 651.1 | 731.9 | 837.9 | 913.6 | 933.8 | 868.2 | 832.9 | 817.7 |
| 75° | 7021.2 | 2745.9 | 509.8 | 535.0 | 590.6 | 651.1 | 792.5 | 827.8 | 767.2 | 731.9 | 706.7 |
| 77.5° | 2604.6 | 1145.8 | 378.6 | 403.8 | 444.2 | 530.0 | 641.0 | 716.8 | 671.3 | 696.6 | 625.9 |
| 80° | 625.9 | 403.8 | 277.6 | 272.6 | 313.0 | 398.8 | 509.8 | 565.3 | 519.9 | 494.7 | 429.0 |
| 82.5° | 272.6 | 196.9 | 181.7 | 181.7 | 191.8 | 262.5 | 338.2 | 398.8 | 388.7 | 323.0 | 307.9 |
| 85° | 101.0 | 85.8 | 85.8 | 90.9 | 90.9 | 121.1 | 181.7 | 212.0 | 191.8 | 166.6 | 161.5 |
| 87.5° | 45.4 | 45.4 | 35.3 | 30.3 | 25.2 | 25.2 | 30.3 | 20.2 | 15.1 | 10.1 | 10.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# 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

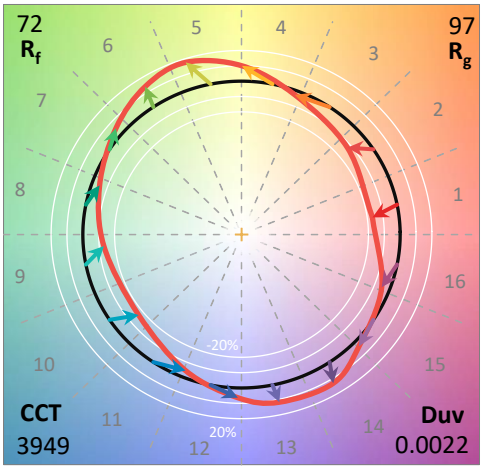
## Test Information

| | |
|---|---|
| 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

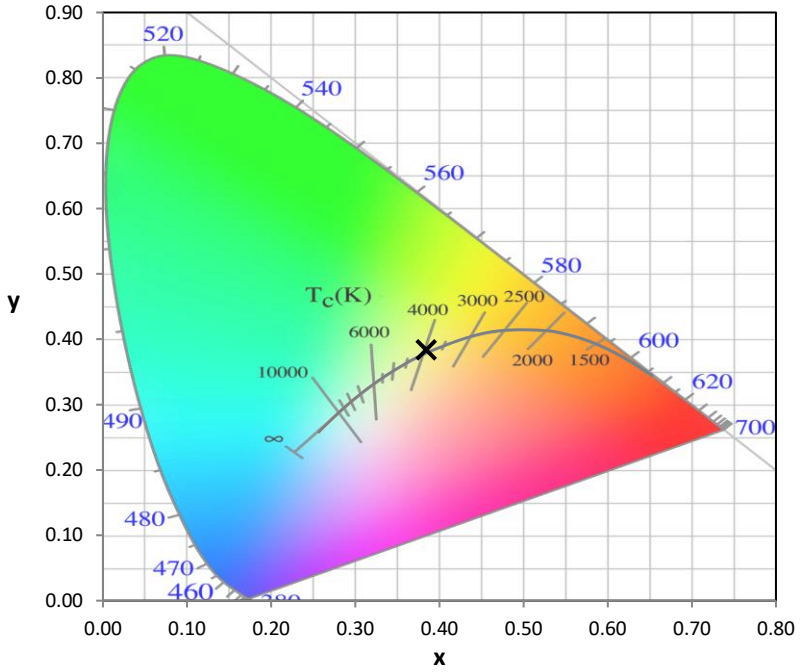
| | |
|---|---|
| Stabilization Time: | 34M |
| Operation Time: | 1H 34M |
| Sphere Temperature (°C): | 25.2 |

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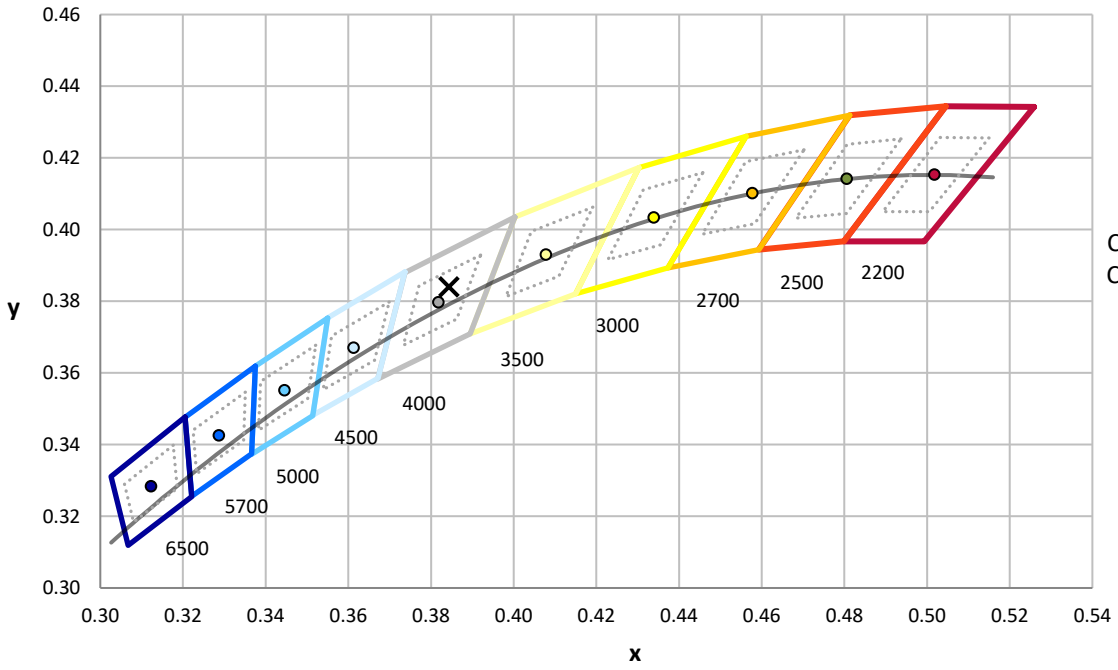
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

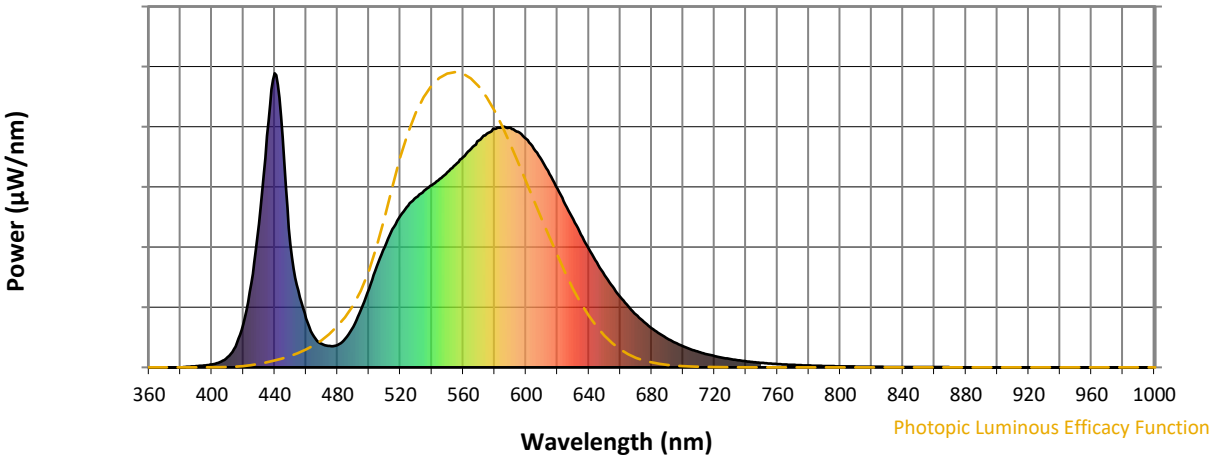



CCT = 3949K
CIE x = 0.3844
CIE y = 0.3840
Duv = 0.0022

Point lies inside the ANSI 4000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

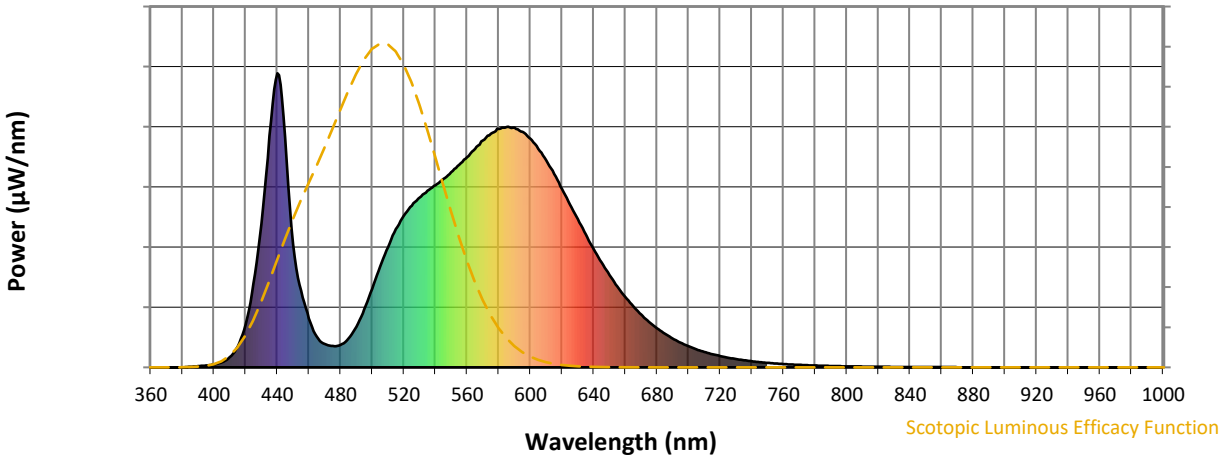



## Photopic Lumens: NR

| 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 | 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 | | | |

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## Scotopic Flux vs. Wavelength

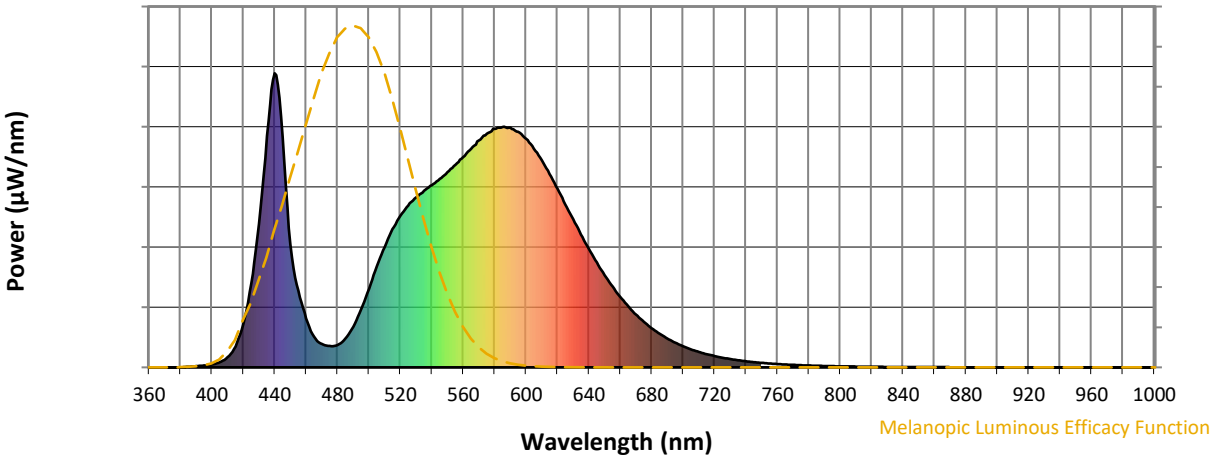



**Scotopic Lumens: NR** **S/P: 1.47**

| 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 | | | |

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## 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 | | | |

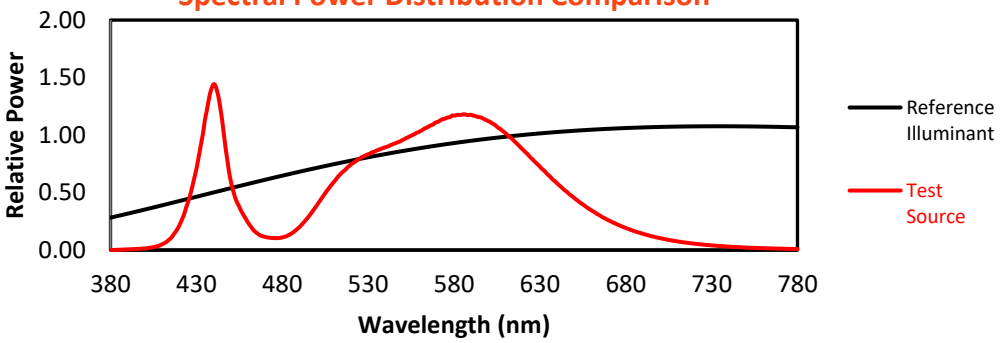
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# TM-30-18

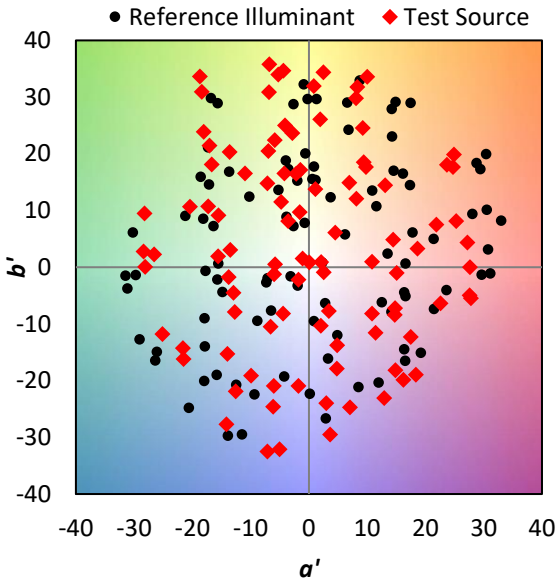
## Summary

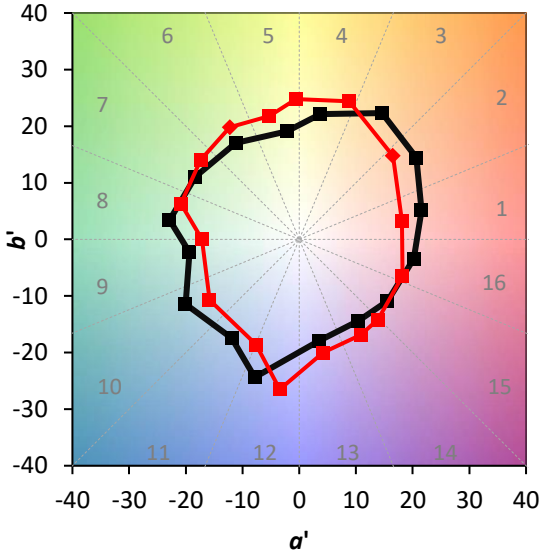
$R_f$ = 71.8
$R_g$ = 96.5
CIE $R_a$ = 70.7
$R_9$ = -36.7

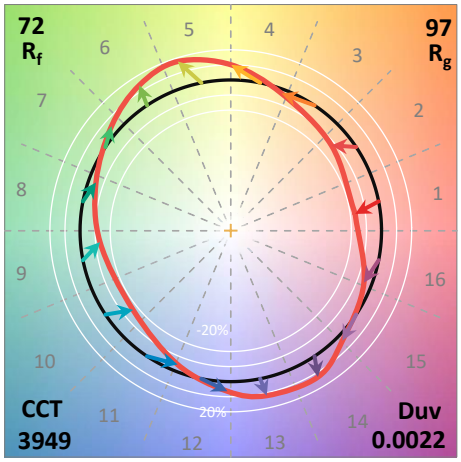
## Spectral Power Distribution Comparison

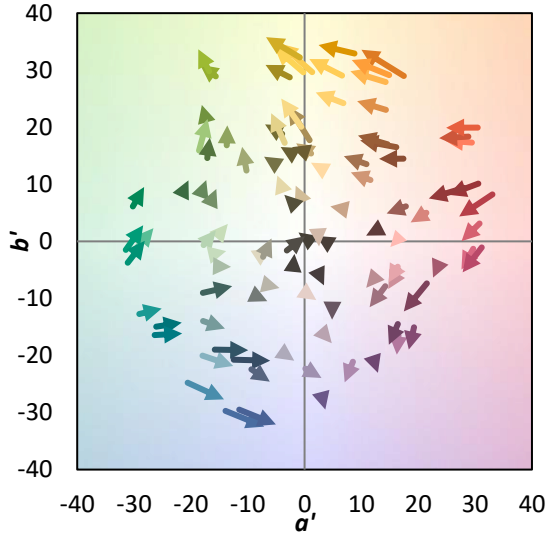



## Color Vector Graphics



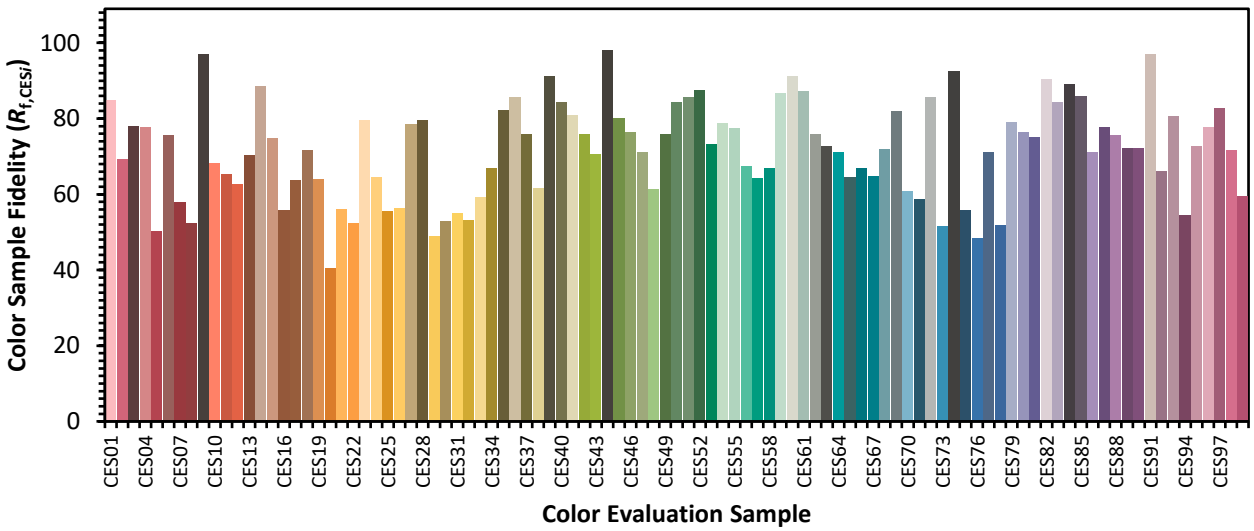



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**Individual Sample Fidelity Index ($R_{f,i}$)**

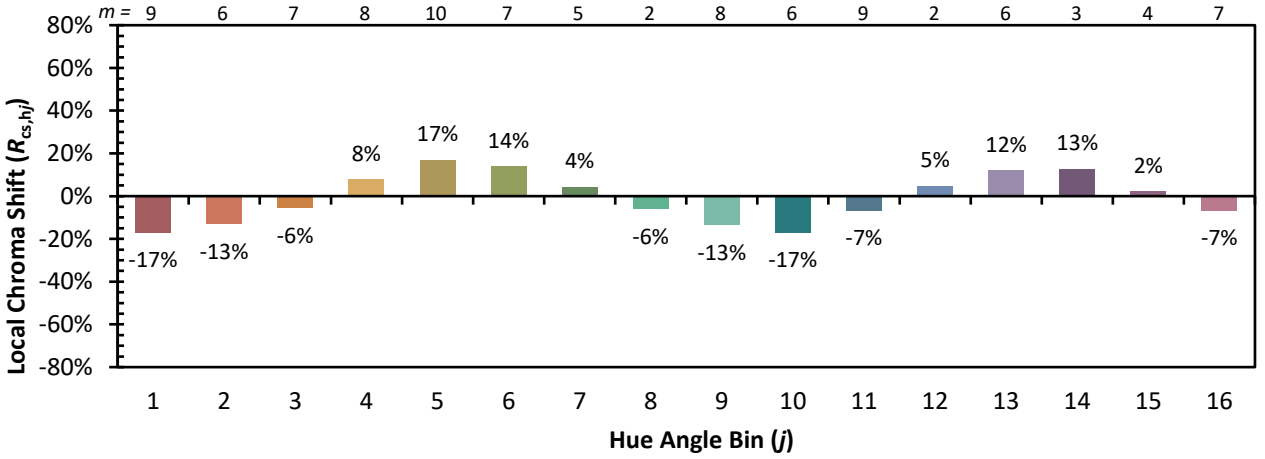
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 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 | |

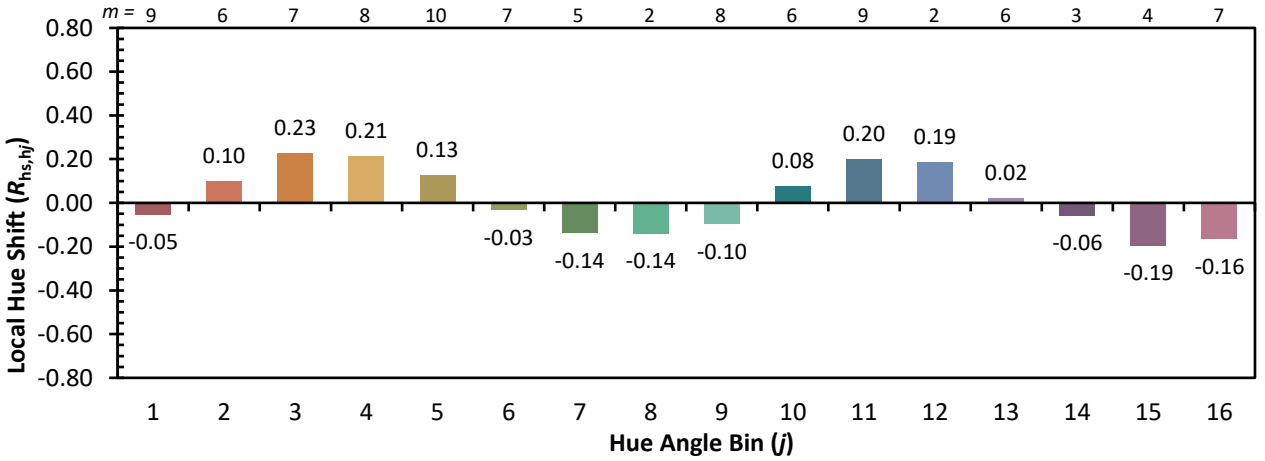


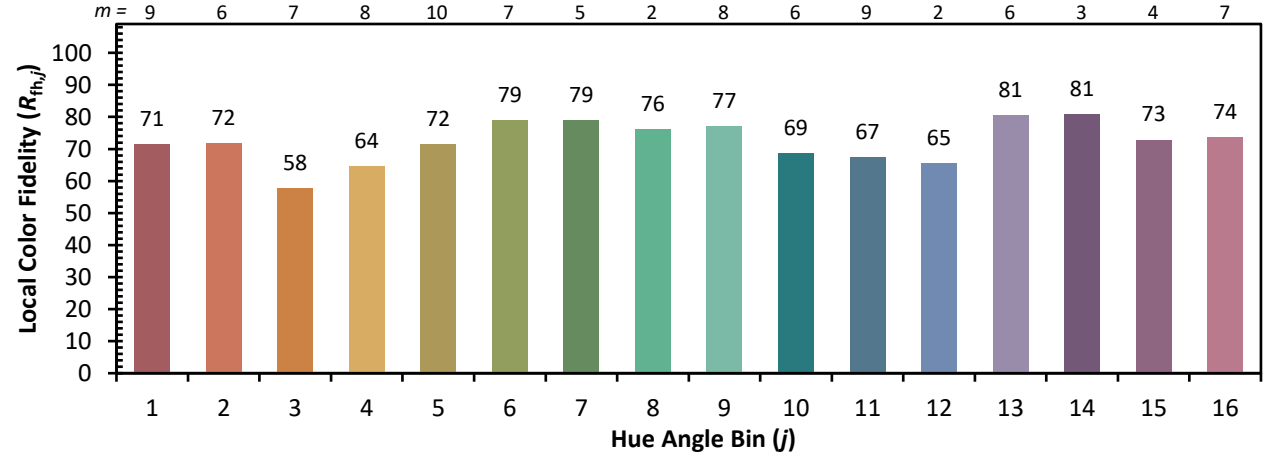
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## Color Rendition by Hue-Angle Bin



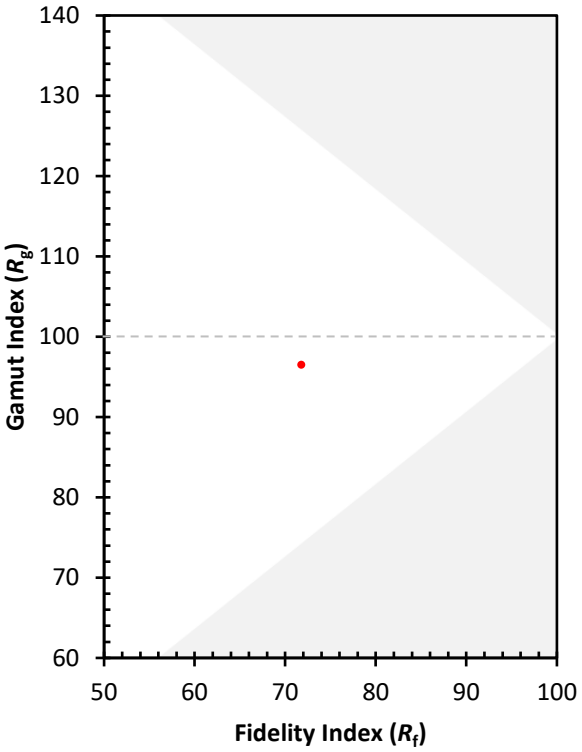



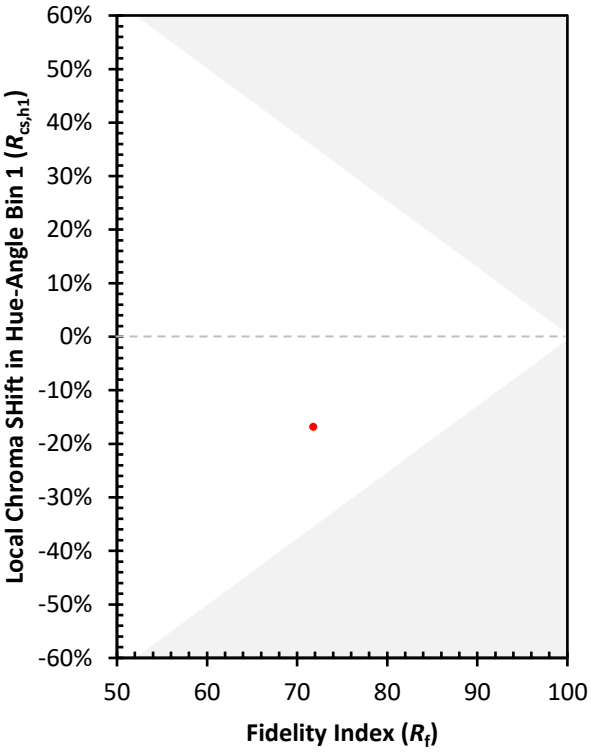



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## Measure Comparisons




(END OF REPORT)