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

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Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1459055

Luminaire Tested: GLAN-SB7A-850-U-T4LG-HSS

Issue Date: 05/20/2026

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1459055 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB7A-850-U-T4LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 7xLight Square PACKAGE 80CRI 5000K FIXTURE w/ TYPE IV LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (182) 5000K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 22124.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 111.1 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B2 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 199.1 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.97 |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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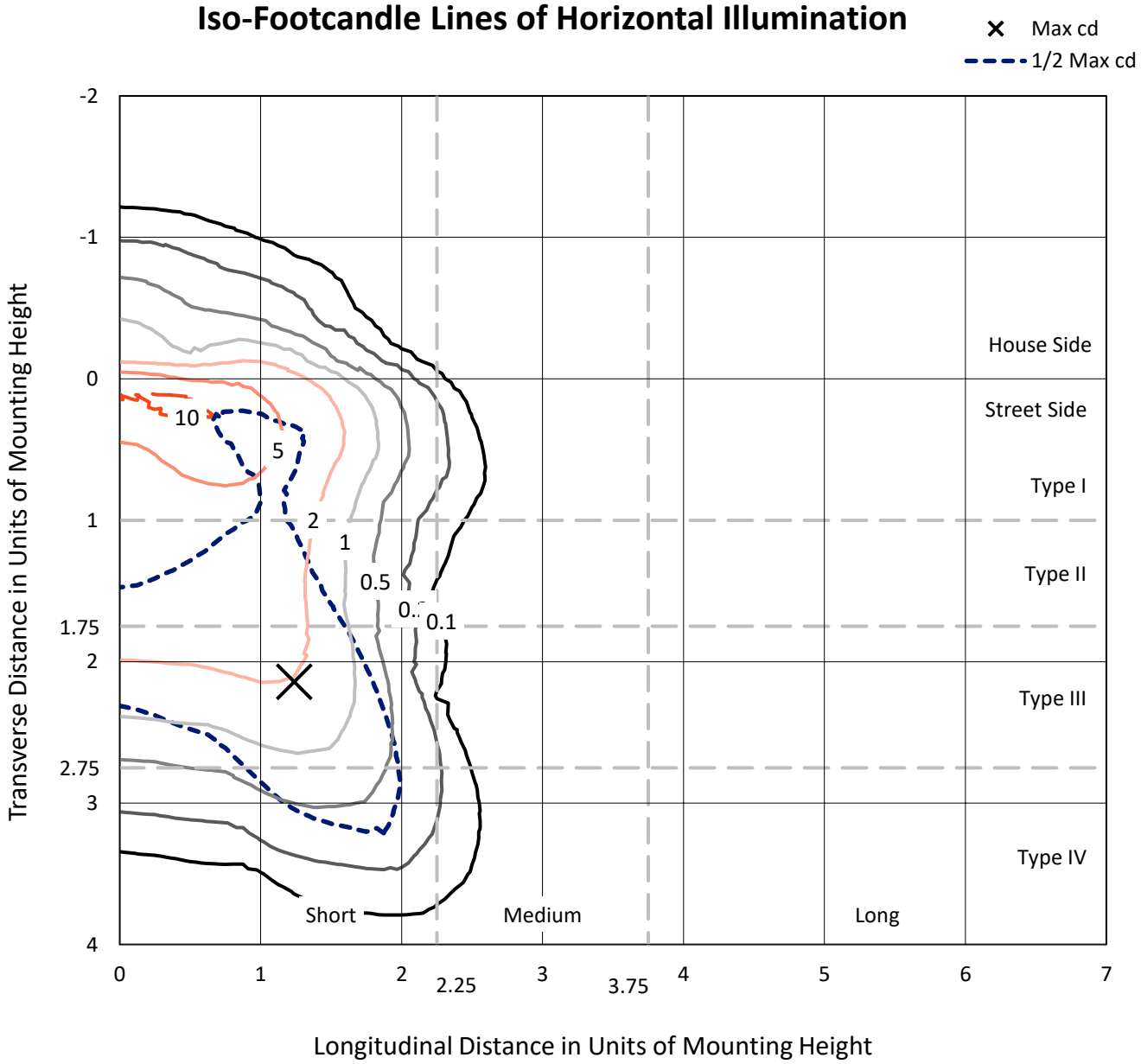
Scaled Data Report

REPORT NUMBER: P1459055
CATALOG NUMBER: GLAN-SB7A-850-U-T4LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 10.7 fc
Type IV - Short - N/A

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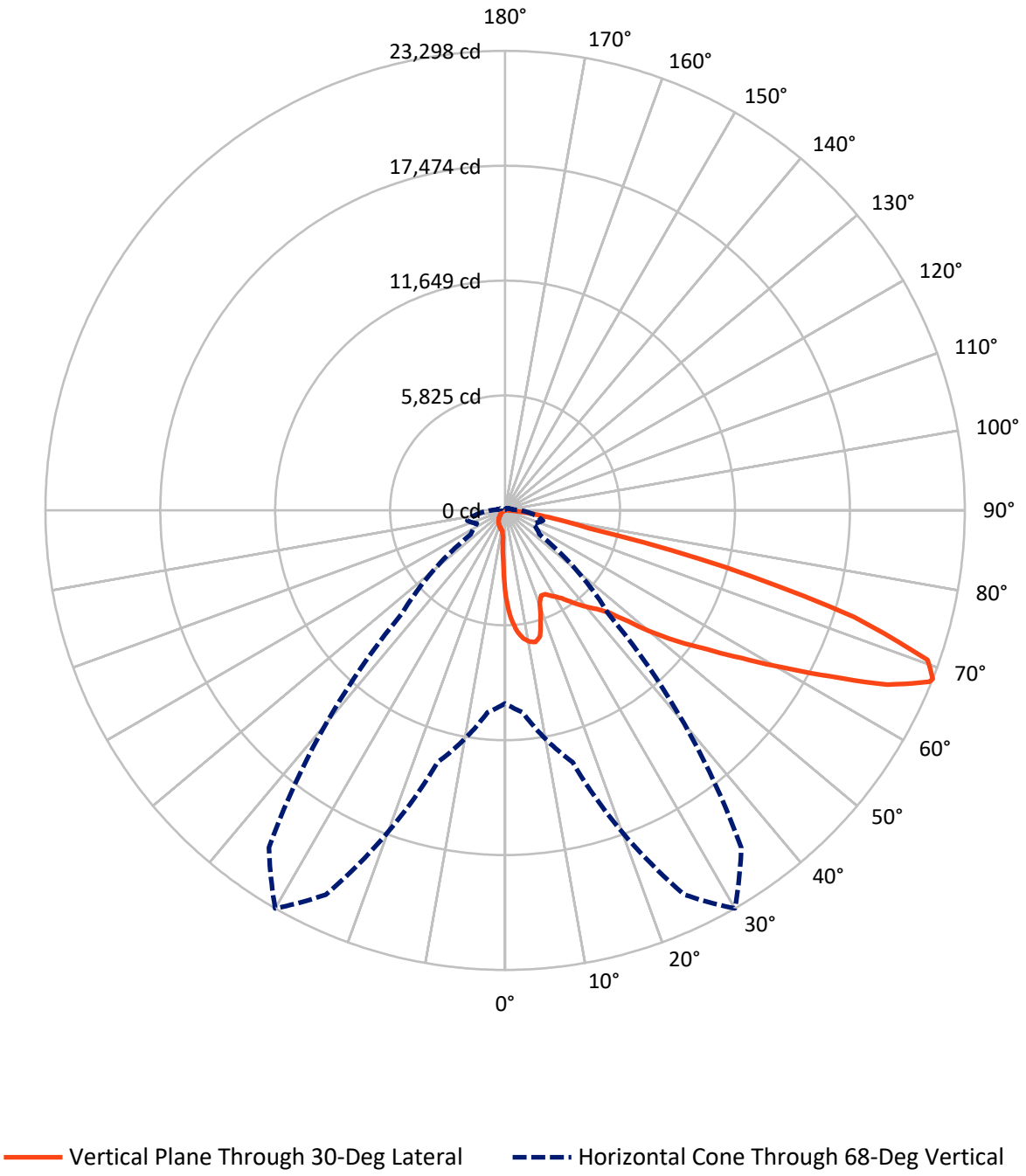
## Luminous Intensity Polar Plot



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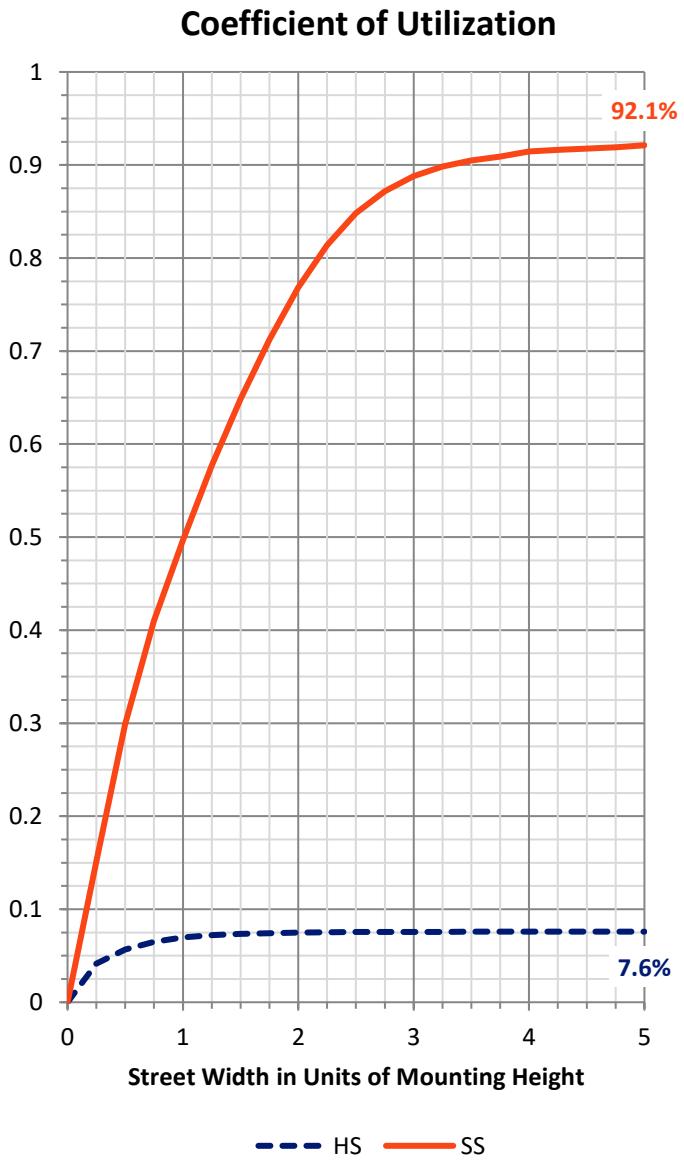
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1688.6 | 0.0 | 1688.6 |
| | % Fixture | 7.6 | 0.0 | 7.6 |
| **Street Side** | Lumens | 20435.5 | 0.0 | 20435.5 |
| | % Fixture | 92.4 | 0.0 | 92.4 |
| **Total** | Lumens | 22124.2 | 0.0 | 22124.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 376.4 | 1.7 |
| 10°-20° | 1074.7 | 4.9 |
| 20°-30° | 1688.9 | 7.6 |
| 30°-40° | 2648.9 | 12.0 |
| 40°-50° | 3959.3 | 17.9 |
| 50°-60° | 5267.2 | 23.8 |
| 60°-70° | 5091.7 | 23.0 |
| 70°-80° | 1830.3 | 8.3 |
| 80°-90° | 186.8 | 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° | 22124.2 | 100.0 |
| 0°-180° | 22124.2 | 100.0 |



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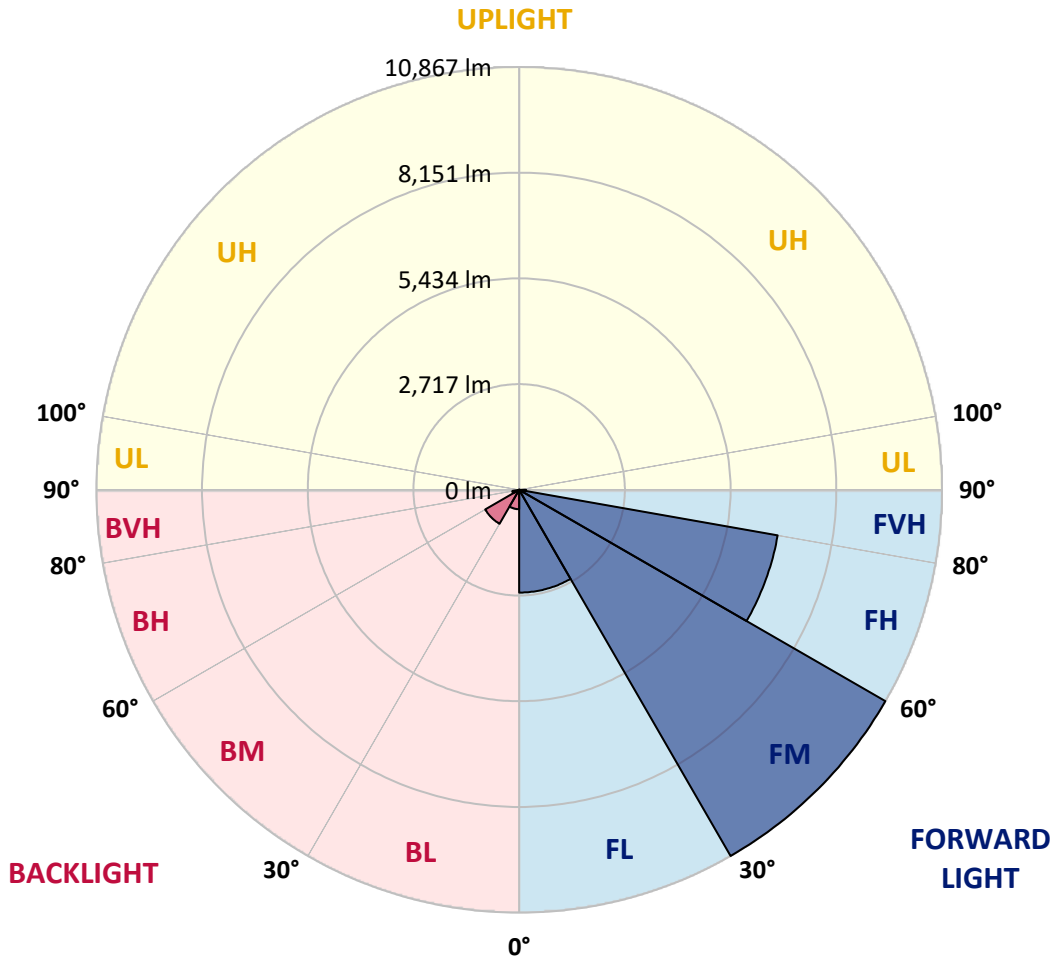
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 2641.6 | 11.9 | | | |
| FM | (30°-60°) | 10867.4 | 49.1 | | | |
| FH | (60°-80°) | 6746.4 | 30.5 | | | G3/7500 |
| FVH | (80°-90°) | 180.2 | 0.8 | | | G2/225 |
| BL | (0°-30°) | 498.4 | 2.3 | B1/500 | | |
| BM | (30°-60°) | 1008.0 | 4.6 | B2/2500 | | |
| BH | (60°-80°) | 175.6 | 0.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 6.6 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G3**
Type IV Short



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REPORT NUMBER: P1459055
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 30° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4362.6 | 4362.6 | 4362.6 | 4362.6 | *4362.6* | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 |
| 2.5° | 5575.9 | 5575.9 | 5536.2 | 5483.1 | *5423.4* | 5403.6 | 5290.8 | 5131.7 | 4966.0 | 4773.7 | 4495.2 |
| 5° | 6292.0 | 6285.4 | 6205.8 | 6205.8 | *6126.2* | 6053.3 | 5940.6 | 5708.5 | 5443.3 | 5098.6 | 4614.6 |
| 7.5° | 6610.2 | 6623.5 | 6590.3 | 6590.3 | *6543.9* | 6490.9 | 6424.6 | 6199.2 | 5887.5 | 5423.4 | 4733.9 |
| 10° | 6722.9 | 6729.6 | 6729.6 | 6776.0 | *6762.7* | 6756.1 | 6749.5 | 6623.5 | 6298.6 | 5754.9 | 4859.9 |
| 12.5° | 6451.1 | 6484.3 | 6577.1 | 6782.6 | *6848.9* | 6921.8 | 7021.3 | 6981.5 | 6756.1 | 6172.6 | 5052.2 |
| 15° | 5575.9 | 5582.6 | 5841.1 | 6351.7 | *6623.5* | 6902.0 | 7286.5 | 7366.1 | 7220.2 | 6623.5 | 5251.1 |
| 17.5° | 4601.3 | 4621.2 | 4826.7 | 5396.9 | *5834.5* | 6477.6 | 7439.0 | 7763.9 | 7710.8 | 7067.7 | 5436.7 |
| 20° | 4196.9 | 4223.4 | 4322.8 | 4680.9 | *5012.4* | 5609.1 | 7286.5 | 8141.8 | 8161.7 | 7511.9 | 5609.1 |
| 22.5° | 4104.0 | 4123.9 | 4203.5 | 4482.0 | *4687.5* | 5085.3 | 6769.4 | 8440.1 | 8672.2 | 8022.4 | 5814.6 |
| 25° | 4077.5 | 4097.4 | 4216.8 | 4521.7 | *4714.0* | 5045.5 | 6298.6 | 8599.3 | 9275.5 | 8552.9 | 6013.5 |
| 27.5° | 4057.6 | 4084.2 | 4276.4 | 4667.6 | *4893.0* | 5211.3 | 6212.4 | 8632.4 | 9852.4 | 9116.4 | 6338.4 |
| 30° | 4084.2 | 4123.9 | 4375.9 | 4820.1 | *5078.7* | 5436.7 | 6418.0 | 8665.6 | 10488.9 | 9759.5 | 6749.5 |
| 32.5° | 4190.2 | 4223.4 | 4528.4 | 5025.6 | *5324.0* | 5728.4 | 6769.4 | 8864.5 | 11092.2 | 10415.9 | 7140.6 |
| 35° | 4309.6 | 4356.0 | 4720.6 | 5317.4 | *5675.4* | 6132.9 | 7246.7 | 9255.7 | 11669.0 | 11039.2 | 7545.1 |
| 37.5° | 4455.4 | 4508.5 | 4946.1 | 5648.9 | *6059.9* | 6577.1 | 7763.9 | 9799.3 | 12179.5 | 11549.7 | 7949.5 |
| 40° | 4654.3 | 4714.0 | 5204.6 | 6000.3 | *6444.5* | 6961.6 | 8274.4 | 10336.4 | 12570.7 | 11854.7 | 8214.7 |
| 42.5° | 5436.7 | 5516.3 | 5721.8 | 6345.0 | *6842.3* | 7372.7 | 8778.3 | 10846.9 | 12716.6 | 11954.1 | 8267.8 |
| 45° | 6895.3 | 6974.9 | 6921.8 | 7041.2 | *7372.7* | 7870.0 | 9328.6 | 11337.5 | 12736.5 | 11927.6 | 8241.2 |
| 47.5° | 8360.6 | 8453.4 | 8407.0 | 8340.7 | *8413.6* | 8652.3 | 9945.2 | 11649.1 | 12630.4 | 11914.3 | 8241.2 |
| 50° | 9759.5 | 9706.5 | 9713.1 | 9693.2 | *9759.5* | 9885.5 | 10541.9 | 11708.8 | 12603.9 | 12040.3 | 8314.2 |
| 52.5° | 10508.7 | 10535.3 | 10701.0 | 10946.3 | *11092.2* | 11218.2 | 11224.8 | 11801.6 | 12411.6 | 11828.1 | 8228.0 |
| 55° | 11244.7 | 11297.7 | 11682.3 | 12100.0 | *12424.9* | 12663.5 | 11907.7 | 11741.9 | 11264.6 | 11118.7 | 7777.1 |
| 57.5° | 12073.5 | 12146.4 | 12690.1 | 13552.0 | *14122.2* | 14248.1 | 12584.0 | 10628.1 | 9534.1 | 10104.3 | 6902.0 |
| 60° | 13213.8 | 13300.0 | 14022.7 | 15315.6 | *16164.2* | 15905.7 | 12637.0 | 8857.8 | 7571.6 | 8387.1 | 5695.3 |
| 62.5° | 14108.9 | 14281.3 | 15587.4 | 17603.0 | *18537.8* | 17715.7 | 11649.1 | 6789.2 | 5290.8 | 5894.2 | 4157.1 |
| 65° | 13154.2 | 13485.7 | 15613.9 | 20221.9 | *21302.6* | 19844.0 | 10097.7 | 4634.5 | 2983.6 | 3812.3 | 2658.7 |
| 67.5° | 10634.7 | 11098.8 | 13863.6 | 21494.9 | *23198.8* | 20964.4 | 7949.5 | 2459.8 | 1710.6 | 2214.5 | 1399.0 |
| 68° | *9786.1* | *10290.0* | *13220.5* | *21494.9* | *23298.3* | *20865.0* | *7379.3* | *2128.3* | *1578.0* | *1989.0* | *1213.3* |
| 70° | 6762.7 | 7120.8 | 10164.0 | 20288.2 | *22714.8* | 19021.8 | 4859.9 | 1219.9 | 1186.8 | 1365.8 | 802.2 |
| 72.5° | 3315.1 | 3699.6 | 5436.7 | 16078.0 | *18504.7* | 14619.4 | 2214.5 | 808.9 | 901.7 | 1001.1 | 629.9 |
| 75° | 1319.4 | 1399.0 | 2141.5 | 7929.6 | *11562.9* | 9328.6 | 1160.3 | 610.0 | 775.7 | 782.4 | 497.3 |
| 77.5° | 755.8 | 802.2 | 1186.8 | 2917.3 | *4336.1* | 4170.3 | 749.2 | 437.6 | 616.6 | 563.6 | 324.9 |
| 80° | 424.3 | 431.0 | 669.6 | 1538.2 | *2479.7* | 2221.1 | 510.5 | 318.2 | 470.7 | 397.8 | 218.8 |
| 82.5° | 212.2 | 238.7 | 424.3 | 848.7 | *1379.1* | 1412.2 | 271.8 | 225.4 | 377.9 | 285.1 | 179.0 |
| 85° | 152.5 | 165.8 | 305.0 | 470.7 | *636.5* | 954.7 | 165.8 | 112.7 | 285.1 | 192.3 | 126.0 |
| 87.5° | 79.6 | 99.5 | 192.3 | 232.1 | *258.6* | 324.9 | 79.6 | 53.0 | 159.1 | 112.7 | 66.3 |
| 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: P1459055
CATALOG NUMBER: GLAN-SB7A-850-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 | 4362.6 |
| 2.5° | 4362.6 | 4210.1 | 3898.5 | 3533.9 | 3248.8 | 2957.0 | 2718.4 | 2492.9 | 2386.8 | 2373.6 | 2400.1 |
| 5° | 4342.7 | 4011.2 | 3301.8 | 2605.6 | 2035.4 | 1637.6 | 1418.8 | 1306.1 | 1246.5 | 1219.9 | 1226.6 |
| 7.5° | 4302.9 | 3799.1 | 2665.3 | 1763.6 | 1319.4 | 1147.0 | 1094.0 | 1074.1 | 1067.4 | 1067.4 | 1067.4 |
| 10° | 4263.2 | 3514.0 | 2042.1 | 1292.9 | 1080.7 | 1034.3 | 1021.0 | 1021.0 | 1014.4 | 1014.4 | 1021.0 |
| 12.5° | 4243.3 | 3248.8 | 1584.6 | 1080.7 | 1007.8 | 987.9 | 974.6 | 968.0 | 968.0 | 968.0 | 974.6 |
| 15° | 4196.9 | 2957.0 | 1279.6 | 1001.1 | 961.4 | 934.8 | 928.2 | 921.6 | 921.6 | 921.6 | 921.6 |
| 17.5° | 4157.1 | 2671.9 | 1113.9 | 948.1 | 915.0 | 888.4 | 881.8 | 875.2 | 875.2 | 881.8 | 881.8 |
| 20° | 4097.4 | 2400.1 | 1001.1 | 895.1 | 868.5 | 842.0 | 835.4 | 828.8 | 835.4 | 835.4 | 835.4 |
| 22.5° | 4024.5 | 2174.7 | 934.8 | 855.3 | 822.1 | 795.6 | 795.6 | 795.6 | 795.6 | 795.6 | 802.2 |
| 25° | 3978.1 | 2015.6 | 888.4 | 808.9 | 775.7 | 755.8 | 749.2 | 749.2 | 762.5 | 762.5 | 769.1 |
| 27.5° | 4051.0 | 1975.8 | 895.1 | 795.6 | 735.9 | 716.1 | 709.4 | 709.4 | 722.7 | 729.3 | 735.9 |
| 30° | 4269.8 | 2048.7 | 974.6 | 835.4 | 709.4 | 676.3 | 669.6 | 669.6 | 689.5 | 696.2 | 702.8 |
| 32.5° | 4521.7 | 2201.2 | 1094.0 | 888.4 | 689.5 | 636.5 | 623.2 | 623.2 | 643.1 | 649.8 | 656.4 |
| 35° | 4866.5 | 2439.9 | 1253.1 | 934.8 | 702.8 | 596.7 | 570.2 | 570.2 | 583.5 | 596.7 | 603.3 |
| 37.5° | 5310.7 | 2831.1 | 1438.7 | 968.0 | 702.8 | 550.3 | 517.1 | 510.5 | 523.8 | 523.8 | 530.4 |
| 40° | 5774.8 | 3341.6 | 1631.0 | 968.0 | 669.6 | 503.9 | 470.7 | 450.8 | 457.5 | 450.8 | 457.5 |
| 42.5° | 6033.4 | 3752.6 | 1796.8 | 908.3 | 629.9 | 457.5 | 424.3 | 397.8 | 391.2 | 377.9 | 384.5 |
| 45° | 6179.3 | 3938.3 | 1750.4 | 842.0 | 590.1 | 424.3 | 384.5 | 351.4 | 338.1 | 318.2 | 318.2 |
| 47.5° | 6179.3 | 3958.2 | 1498.4 | 789.0 | 550.3 | 397.8 | 344.8 | 311.6 | 291.7 | 271.8 | 278.5 |
| 50° | 6106.3 | 3779.2 | 1186.8 | 735.9 | 503.9 | 371.3 | 311.6 | 285.1 | 258.6 | 245.3 | 245.3 |
| 52.5° | 5801.4 | 3195.7 | 908.3 | 669.6 | 450.8 | 338.1 | 278.5 | 251.9 | 225.4 | 218.8 | 218.8 |
| 55° | 5277.6 | 2347.1 | 735.9 | 603.3 | 404.4 | 311.6 | 251.9 | 232.1 | 205.5 | 192.3 | 192.3 |
| 57.5° | 4289.7 | 1604.5 | 610.0 | 543.7 | 358.0 | 278.5 | 225.4 | 205.5 | 172.4 | 159.1 | 159.1 |
| 60° | 3182.5 | 1047.6 | 517.1 | 477.4 | 305.0 | 251.9 | 198.9 | 172.4 | 145.9 | 132.6 | 126.0 |
| 62.5° | 2148.2 | 709.4 | 431.0 | 377.9 | 258.6 | 218.8 | 172.4 | 145.9 | 112.7 | 86.2 | 86.2 |
| 65° | 1339.3 | 550.3 | 358.0 | 298.4 | 225.4 | 192.3 | 145.9 | 112.7 | 79.6 | 59.7 | 53.0 |
| 67.5° | 769.1 | 444.2 | 291.7 | 232.1 | 192.3 | 152.5 | 112.7 | 92.8 | 66.3 | 46.4 | 39.8 |
| 68° | *709.4* | *424.3* | *271.8* | *218.8* | *179.0* | *145.9* | *106.1* | *86.2* | *59.7* | *39.8* | *39.8* |
| 70° | 576.8 | 377.9 | 232.1 | 179.0 | 152.5 | 119.3 | 92.8 | 72.9 | 46.4 | 26.5 | 26.5 |
| 72.5° | 510.5 | 318.2 | 198.9 | 139.2 | 106.1 | 99.5 | 72.9 | 53.0 | 33.2 | 19.9 | 13.3 |
| 75° | 417.7 | 251.9 | 159.1 | 106.1 | 72.9 | 72.9 | 53.0 | 33.2 | 13.3 | 0.0 | 0.0 |
| 77.5° | 271.8 | 185.6 | 126.0 | 66.3 | 39.8 | 46.4 | 33.2 | 13.3 | 0.0 | 0.0 | 0.0 |
| 80° | 179.0 | 139.2 | 86.2 | 33.2 | 19.9 | 19.9 | 6.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 126.0 | 92.8 | 53.0 | 13.3 | 6.6 | 6.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 79.6 | 39.8 | 19.9 | 6.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 33.2 | 13.3 | 6.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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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: SP1-2407-184-12

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-850-U-5WQ

Data in this report applies to families of products including GSS-SB1A-850-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

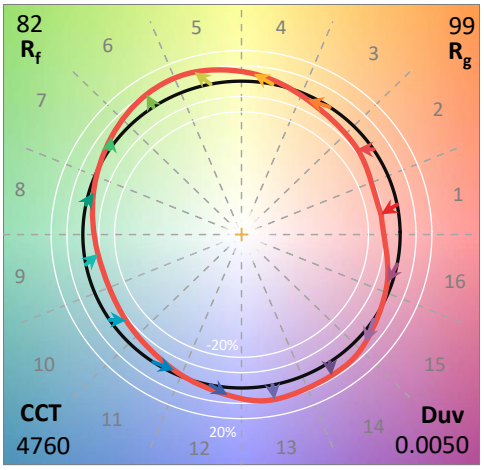
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-12 |
| 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-850-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 5000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 4760 |
| CIE u': | 0.2107 |
| CIE v': | 0.4939 |
| Duv: | 0.0050 |
| CIE x: | 0.3537 |
| CIE y: | 0.3685 |
| CIE z: | 0.2779 |
| Peak Wavelength (nm): | 443 |
| Dominant Wavelength (nm): | 571 |
| Purity: | 16.69598 |
| Rf: | 82 |
| Rg: | 99.4 |

| | |
|---|---|
| CRI (Ra): | 81.1 |
| R1: | 79.8 |
| R2: | 83.5 |
| R3: | 87.9 |
| R4: | 83.1 |
| R5: | 80.5 |
| R6: | 79.1 |
| R7: | 86.1 |
| R8: | 69.0 |
| R9: | 8.7 |
| R10: | 62.4 |
| R11: | 83.8 |
| R12: | 63.0 |
| R13: | 79.9 |
| R14: | 93.3 |
| R15: | 72.7 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

| 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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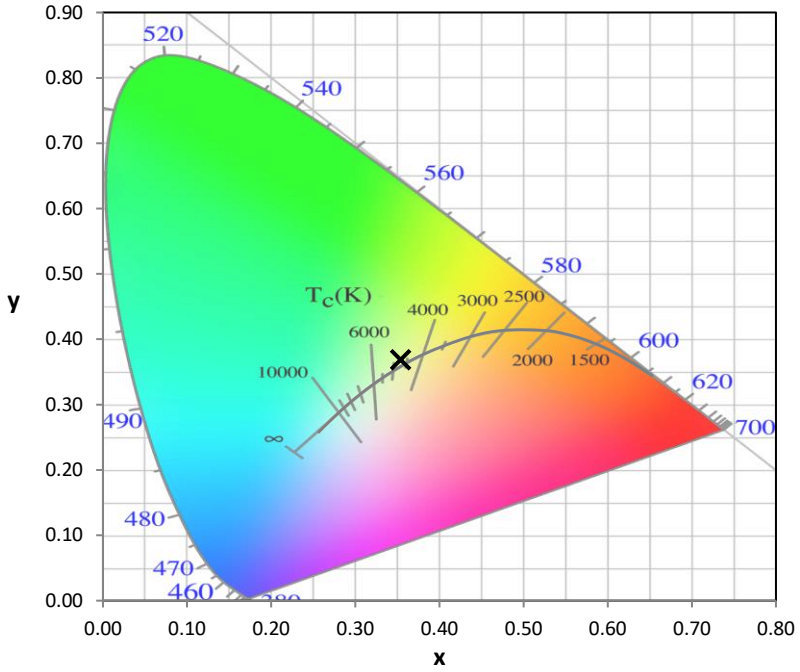
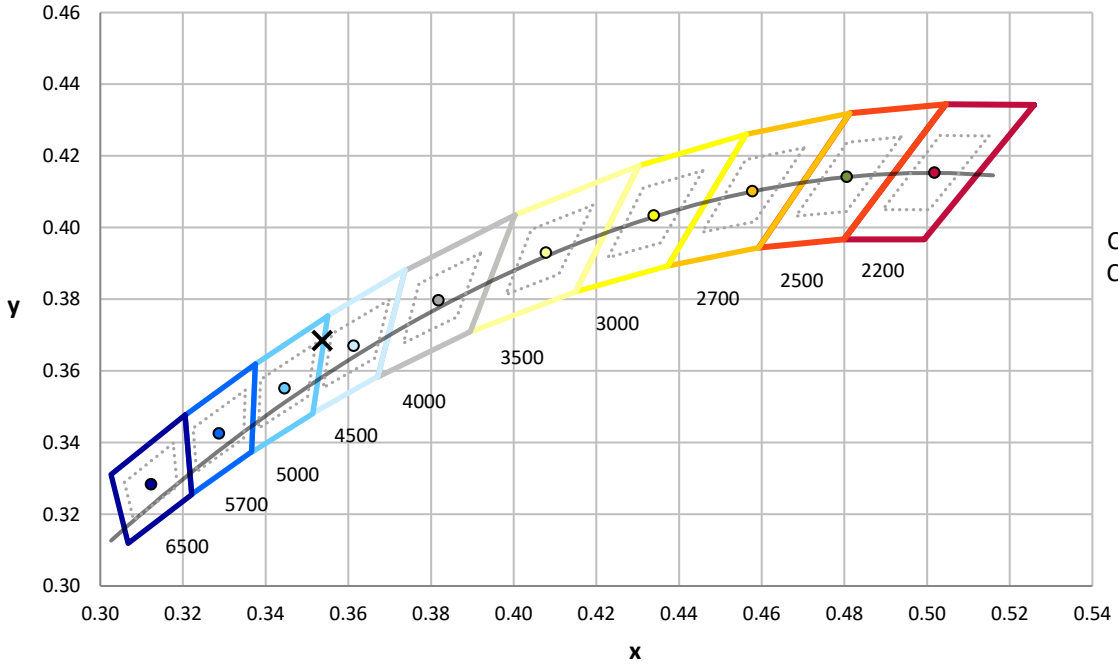
## CIE 1931 Chromaticity Diagram




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




CCT = 4760K
CIE x = 0.3537
CIE y = 0.3685
Duv = 0.0050

Point lies inside the ANSI 5000K 7-step quadrangle

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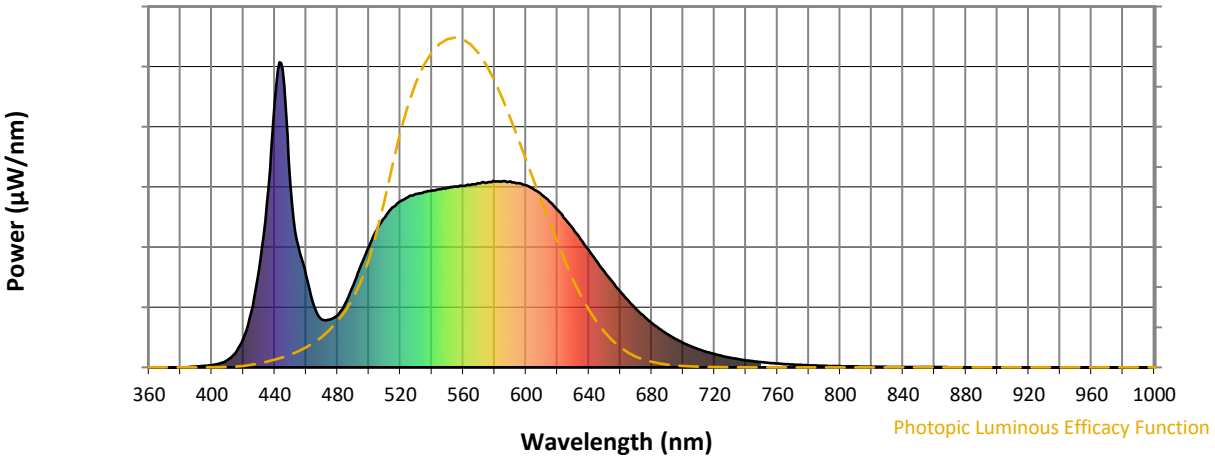
## Photopic Flux vs. Wavelength




## 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 | 270 | NR | 620 | 517 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 335 | NR | 625 | 486 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 397 | NR | 630 | 454 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 451 | NR | 635 | 419 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 492 | NR | 640 | 384 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 524 | NR | 645 | 347 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 545 | NR | 650 | 313 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 558 | NR | 655 | 280 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 568 | NR | 660 | 248 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 13 | NR | 535 | 575 | NR | 665 | 219 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 579 | NR | 670 | 192 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 47 | NR | 545 | 585 | NR | 675 | 167 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 95 | NR | 550 | 588 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 181 | NR | 555 | 593 | NR | 685 | 126 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 319 | NR | 560 | 595 | NR | 690 | 109 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 539 | NR | 565 | 600 | NR | 695 | 94 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 603 | NR | 700 | 80 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 977 | NR | 575 | 606 | NR | 705 | 69 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 601 | NR | 580 | 609 | NR | 710 | 59 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 397 | NR | 585 | 611 | NR | 715 | 51 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 302 | NR | 590 | 610 | NR | 720 | 44 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 201 | NR | 595 | 604 | NR | 725 | 37 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 596 | NR | 730 | 32 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 157 | NR | 605 | 583 | NR | 735 | 27 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 566 | NR | 740 | 23 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 543 | NR | 745 | 20 | NR | 875 | 0 | NR | | | |

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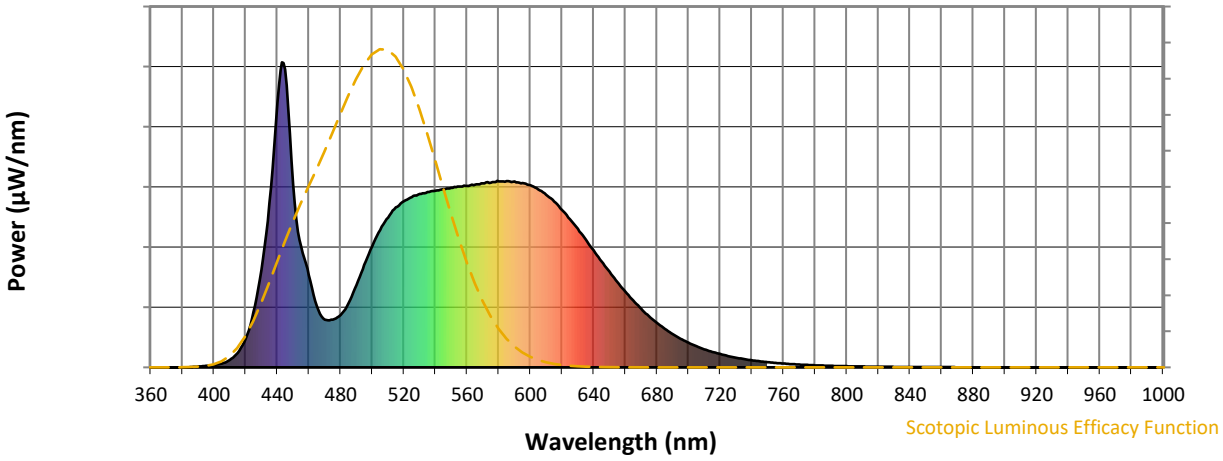
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.83**

| 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 | 270 | NR | 620 | 517 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 335 | NR | 625 | 486 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 397 | NR | 630 | 454 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 451 | NR | 635 | 419 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 492 | NR | 640 | 384 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 524 | NR | 645 | 347 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 545 | NR | 650 | 313 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 558 | NR | 655 | 280 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 568 | NR | 660 | 248 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 13 | NR | 535 | 575 | NR | 665 | 219 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 579 | NR | 670 | 192 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 47 | NR | 545 | 585 | NR | 675 | 167 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 95 | NR | 550 | 588 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 181 | NR | 555 | 593 | NR | 685 | 126 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 319 | NR | 560 | 595 | NR | 690 | 109 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 539 | NR | 565 | 600 | NR | 695 | 94 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 603 | NR | 700 | 80 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 977 | NR | 575 | 606 | NR | 705 | 69 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 601 | NR | 580 | 609 | NR | 710 | 59 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 397 | NR | 585 | 611 | NR | 715 | 51 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 302 | NR | 590 | 610 | NR | 720 | 44 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 201 | NR | 595 | 604 | NR | 725 | 37 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 596 | NR | 730 | 32 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 157 | NR | 605 | 583 | NR | 735 | 27 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 566 | NR | 740 | 23 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 543 | NR | 745 | 20 | NR | 875 | 0 | NR | | | |

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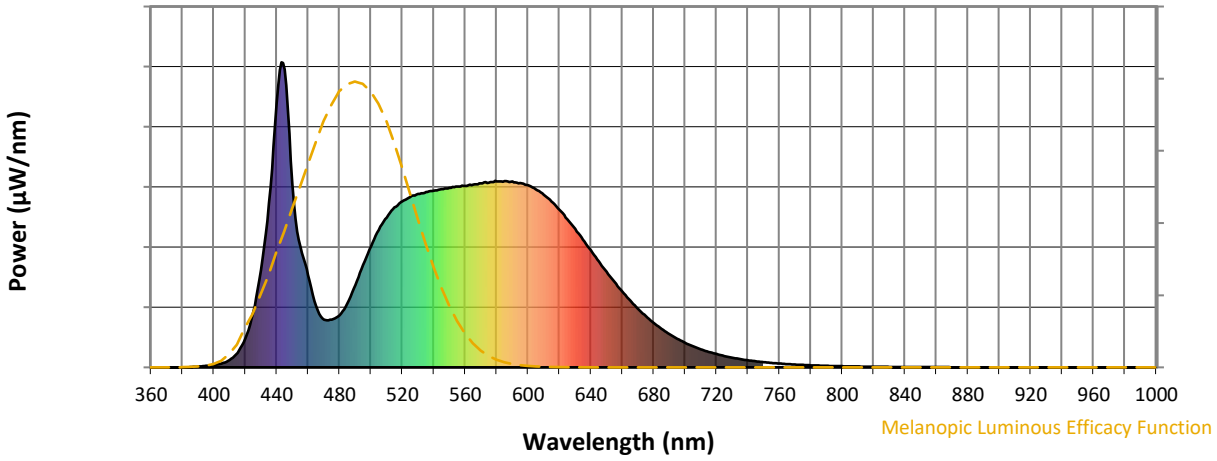
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.74**

| 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 | 270 | NR | 620 | 517 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 335 | NR | 625 | 486 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 397 | NR | 630 | 454 | NR | 760 | 12 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 451 | NR | 635 | 419 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 492 | NR | 640 | 384 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 524 | NR | 645 | 347 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 545 | NR | 650 | 313 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 558 | NR | 655 | 280 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 7 | NR | 530 | 568 | NR | 660 | 248 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 13 | NR | 535 | 575 | NR | 665 | 219 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 24 | NR | 540 | 579 | NR | 670 | 192 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 47 | NR | 545 | 585 | NR | 675 | 167 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 95 | NR | 550 | 588 | NR | 680 | 146 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 181 | NR | 555 | 593 | NR | 685 | 126 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 319 | NR | 560 | 595 | NR | 690 | 109 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 539 | NR | 565 | 600 | NR | 695 | 94 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 603 | NR | 700 | 80 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 977 | NR | 575 | 606 | NR | 705 | 69 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 601 | NR | 580 | 609 | NR | 710 | 59 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 397 | NR | 585 | 611 | NR | 715 | 51 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 302 | NR | 590 | 610 | NR | 720 | 44 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 201 | NR | 595 | 604 | NR | 725 | 37 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 157 | NR | 600 | 596 | NR | 730 | 32 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 157 | NR | 605 | 583 | NR | 735 | 27 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 566 | NR | 740 | 23 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 543 | NR | 745 | 20 | NR | 875 | 0 | NR | | | |

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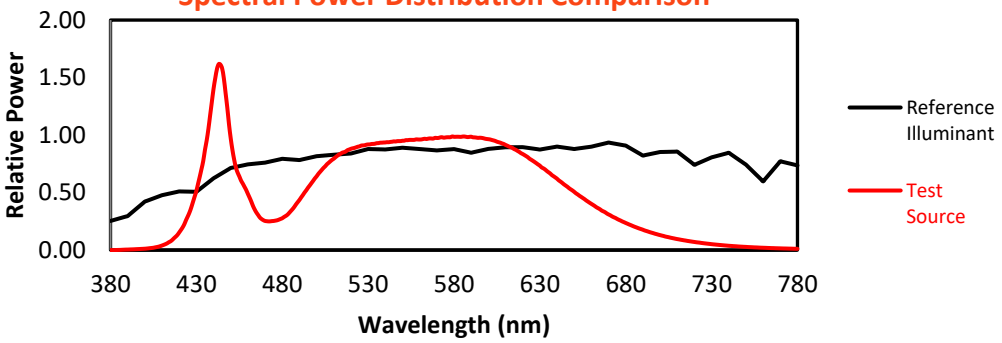
# TM-30-18

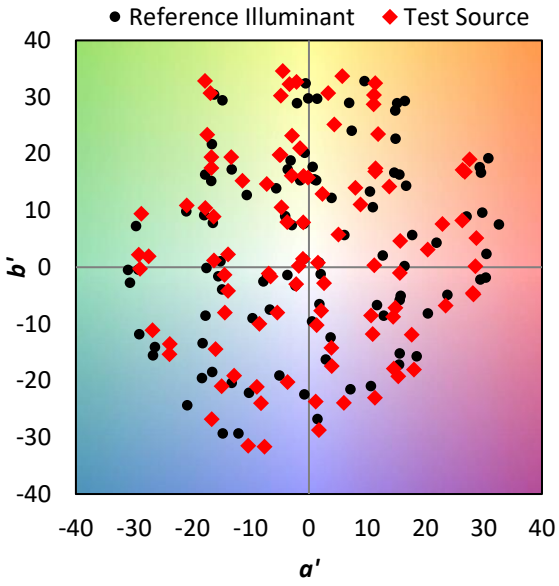
## Summary

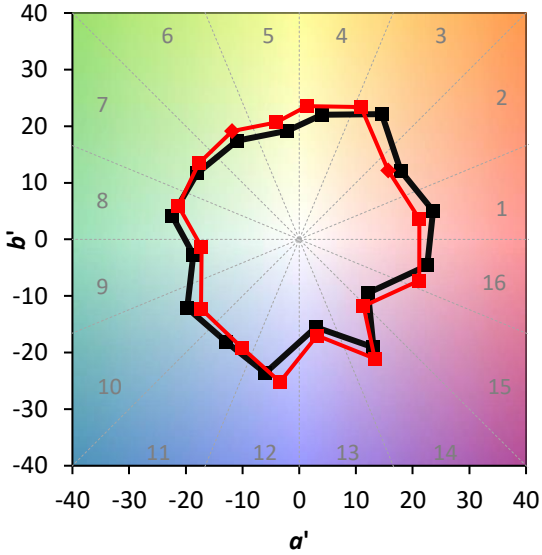
$R_f$ = 82
$R_g$ = 99.4
CIE $R_a$ = 81.1
$R_9$ = 8.7

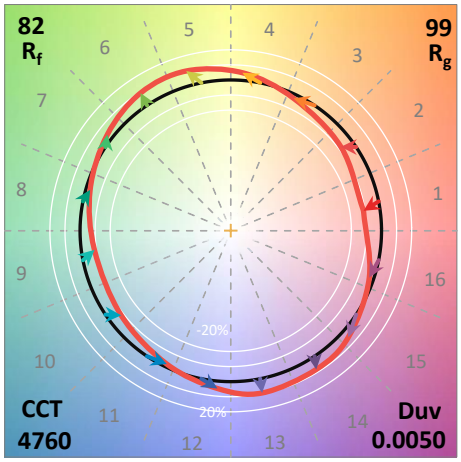
## Spectral Power Distribution Comparison

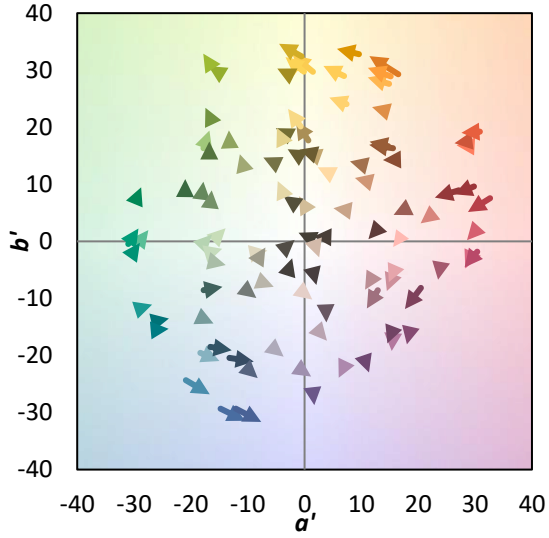



## Color Vector Graphics



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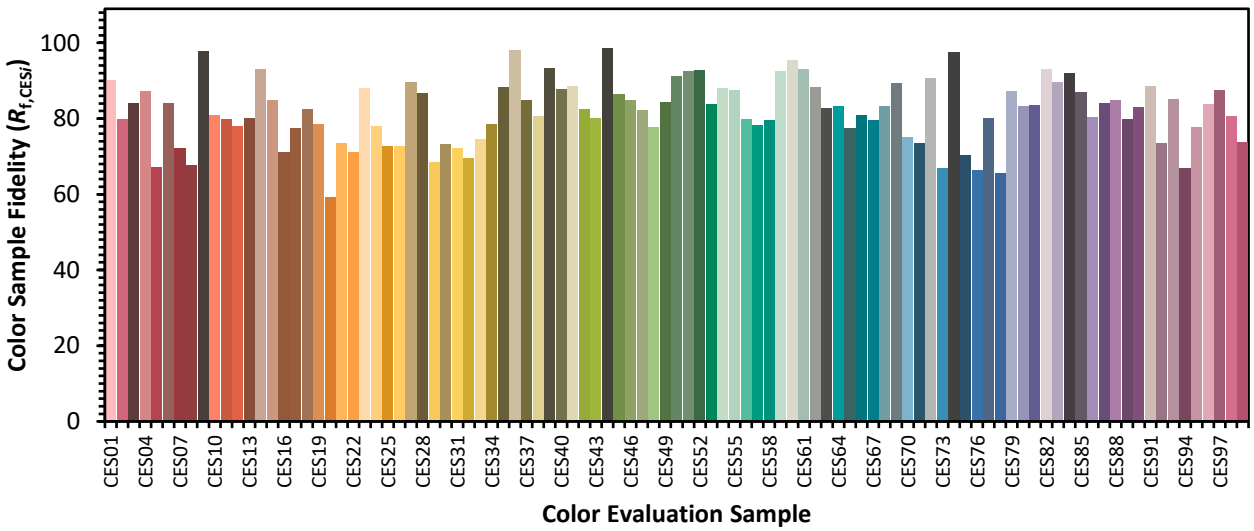
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 73 | CES51 = 92 | CES76 = 66 |
| CES02 = 60 | CES27 = 90 | CES52 = 93 | CES77 = 80 |
| CES03 = 30 | CES28 = 87 | CES53 = 84 | CES78 = 65 |
| CES04 = 69 | CES29 = 69 | CES54 = 88 | CES79 = 87 |
| CES05 = 47 | CES30 = 73 | CES55 = 88 | CES80 = 83 |
| CES06 = 50 | CES31 = 72 | CES56 = 80 | CES81 = 84 |
| CES07 = 40 | CES32 = 69 | CES57 = 78 | CES82 = 93 |
| CES08 = 39 | CES33 = 75 | CES58 = 80 | CES83 = 90 |
| CES09 = 29 | CES34 = 78 | CES59 = 93 | CES84 = 92 |
| CES10 = 73 | CES35 = 88 | CES60 = 95 | CES85 = 87 |
| CES11 = 56 | CES36 = 98 | CES61 = 93 | CES86 = 80 |
| CES12 = 62 | CES37 = 85 | CES62 = 88 | CES87 = 84 |
| CES13 = 42 | CES38 = 81 | CES63 = 83 | CES88 = 85 |
| CES14 = 74 | CES39 = 93 | CES64 = 83 | CES89 = 80 |
| CES15 = 71 | CES40 = 88 | CES65 = 77 | CES90 = 83 |
| CES16 = 46 | CES41 = 89 | CES66 = 81 | CES91 = 89 |
| CES17 = 48 | CES42 = 82 | CES67 = 80 | CES92 = 73 |
| CES18 = 55 | CES43 = 80 | CES68 = 83 | CES93 = 85 |
| CES19 = 70 | CES44 = 99 | CES69 = 89 | CES94 = 67 |
| CES20 = 64 | CES45 = 87 | CES70 = 75 | CES95 = 78 |
| CES21 = 85 | CES46 = 85 | CES71 = 73 | CES96 = 84 |
| CES22 = 77 | CES47 = 82 | CES72 = 91 | CES97 = 87 |
| CES23 = 91 | CES48 = 78 | CES73 = 67 | CES98 = 81 |
| CES24 = 90 | CES49 = 84 | CES74 = 98 | CES99 = 74 |
| CES25 = 71 | CES50 = 91 | CES75 = 70 | |



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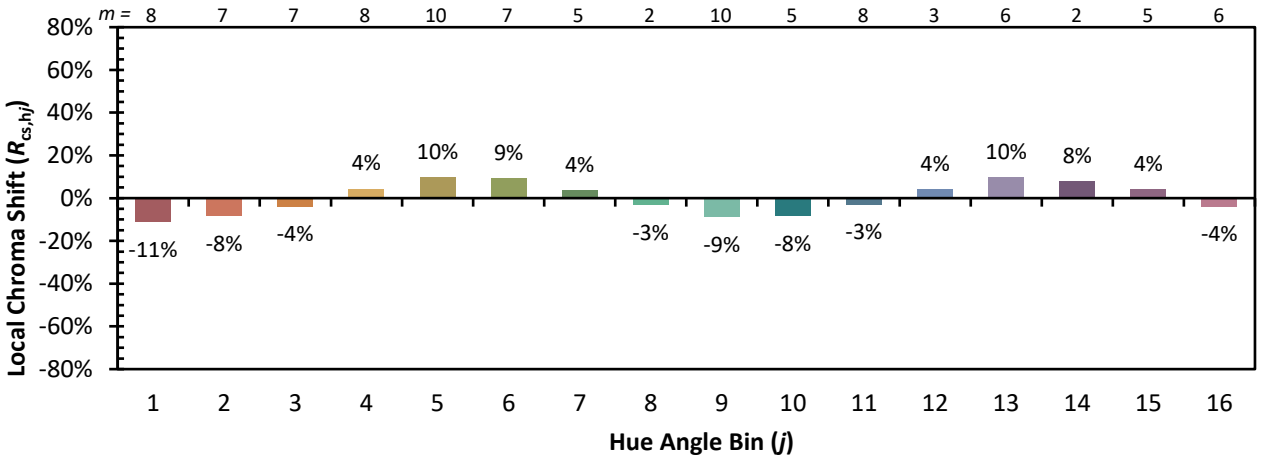
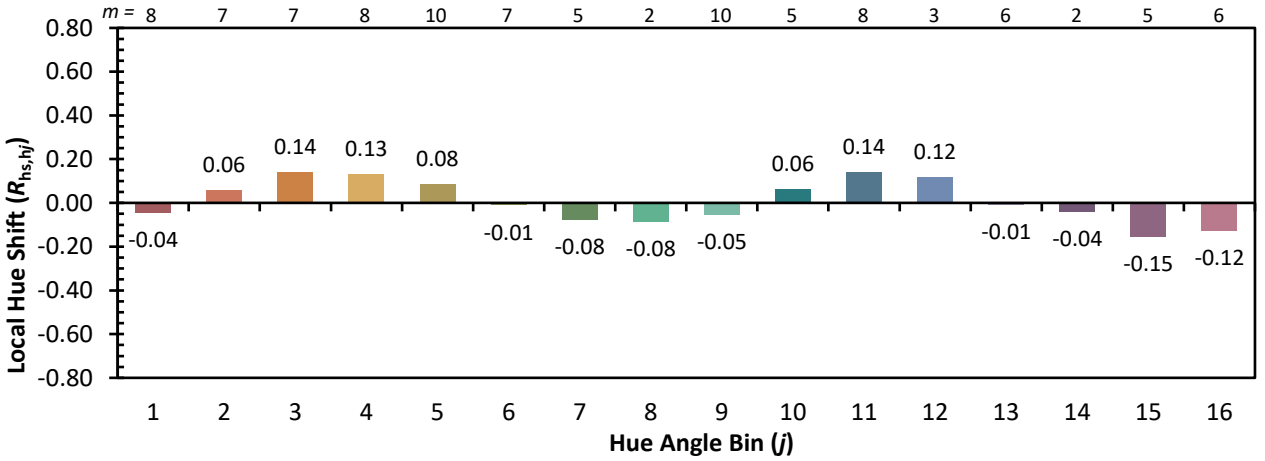
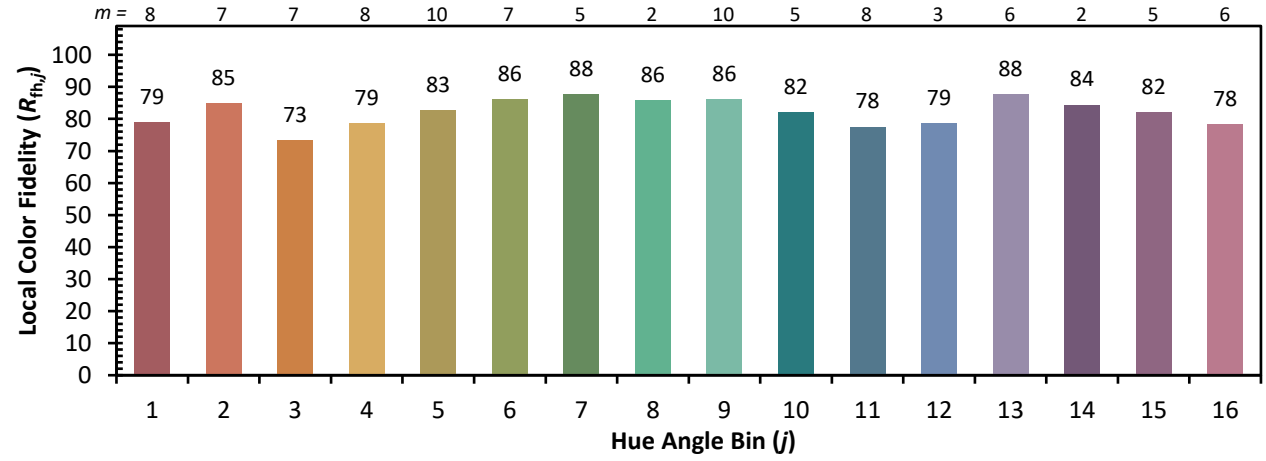
# TM-30-18

## Color Rendition by Hue-Angle Bin



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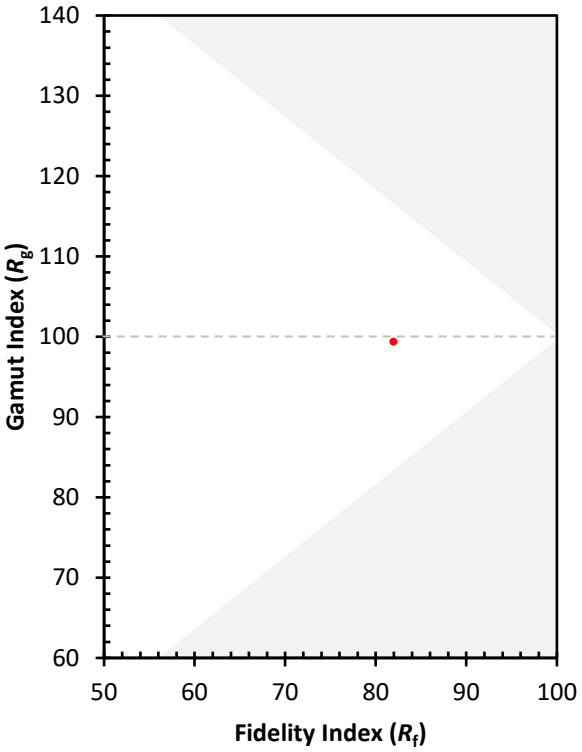
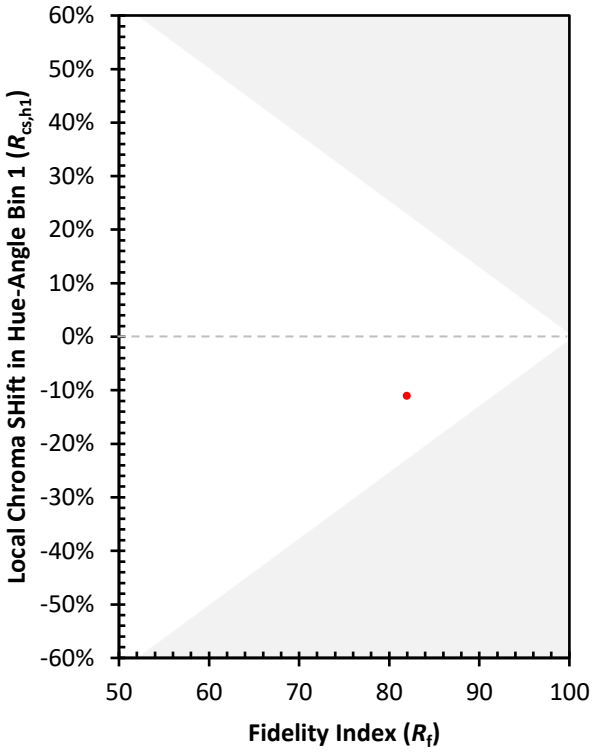
## Measure Comparisons




(END OF REPORT)