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: P1457264

Luminaire Tested: GLAN-SB9B-835-U-T4LG

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: | P1457264 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB9B-835-U-T4LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 450mA 9xLight Square PACKAGE 80CRI 3500K FIXTURE w/ TYPE IV LOW GLARE |
| Light Source: | (234) 3500K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 46572.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 141.3 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B4 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 329.5 |
| 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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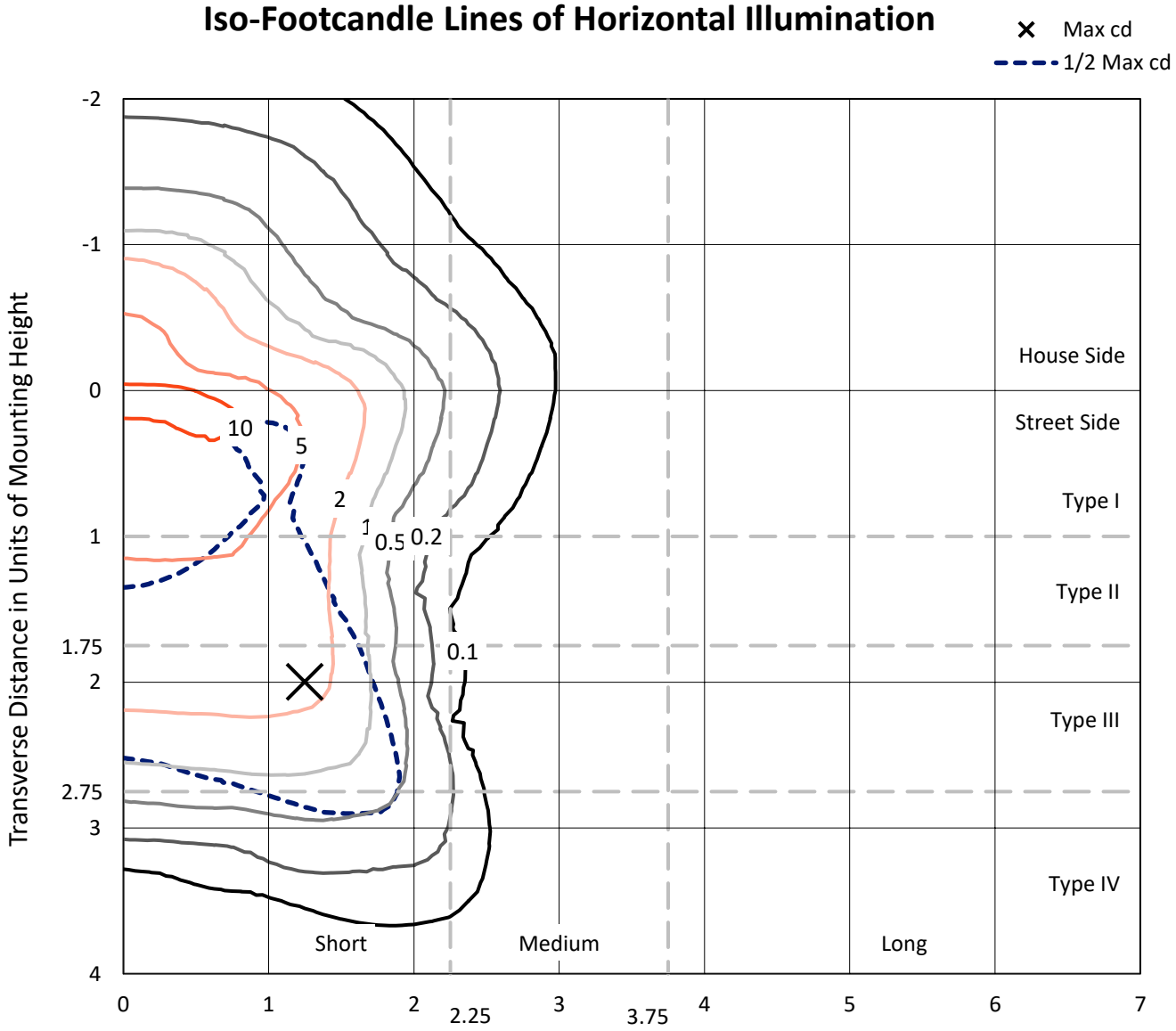
Scaled Data Report

REPORT NUMBER: P1457264
CATALOG NUMBER: GLAN-SB9B-835-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 12.8 fc
Type IV - Short - N/A

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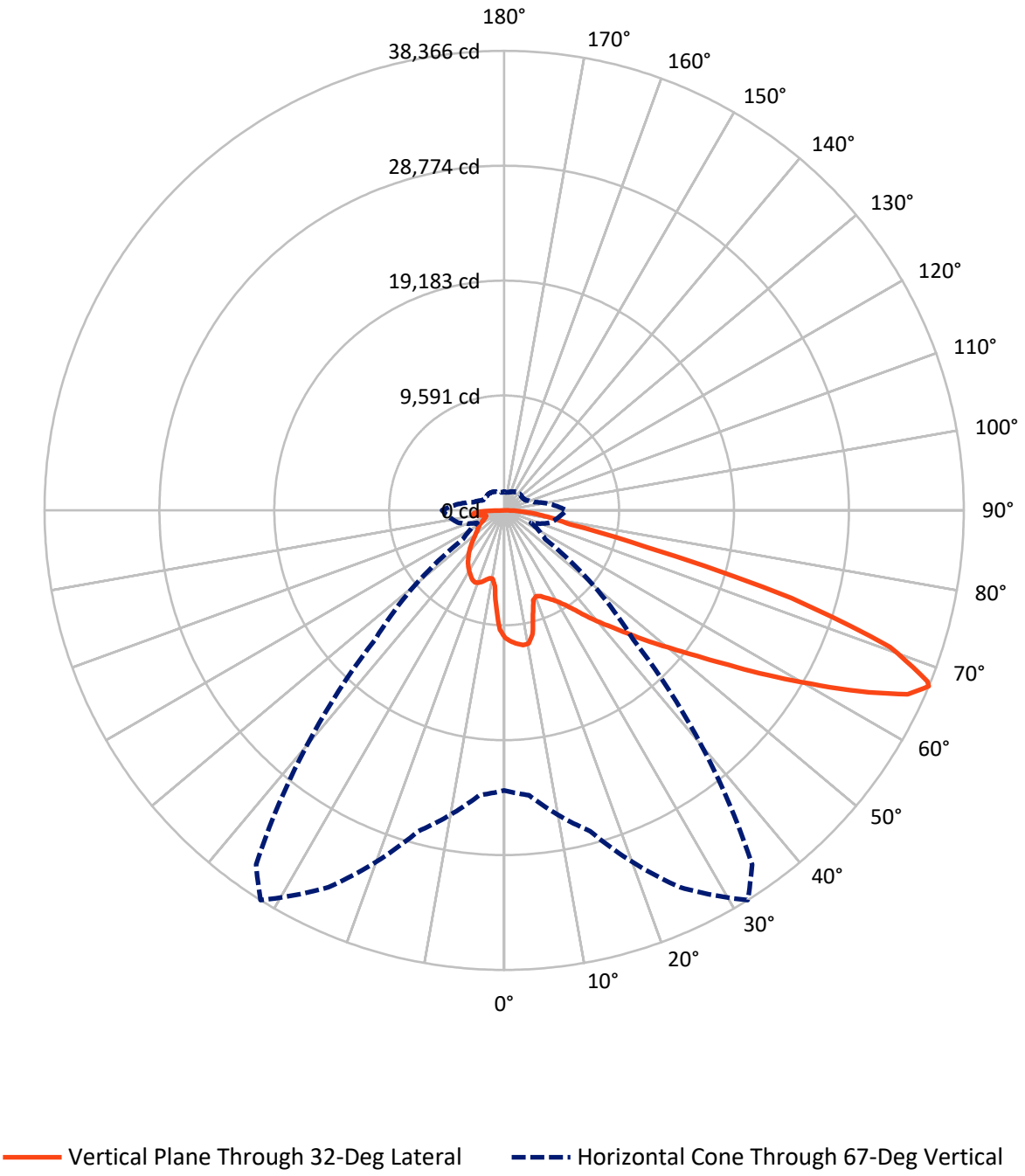
## Luminous Intensity Polar Plot



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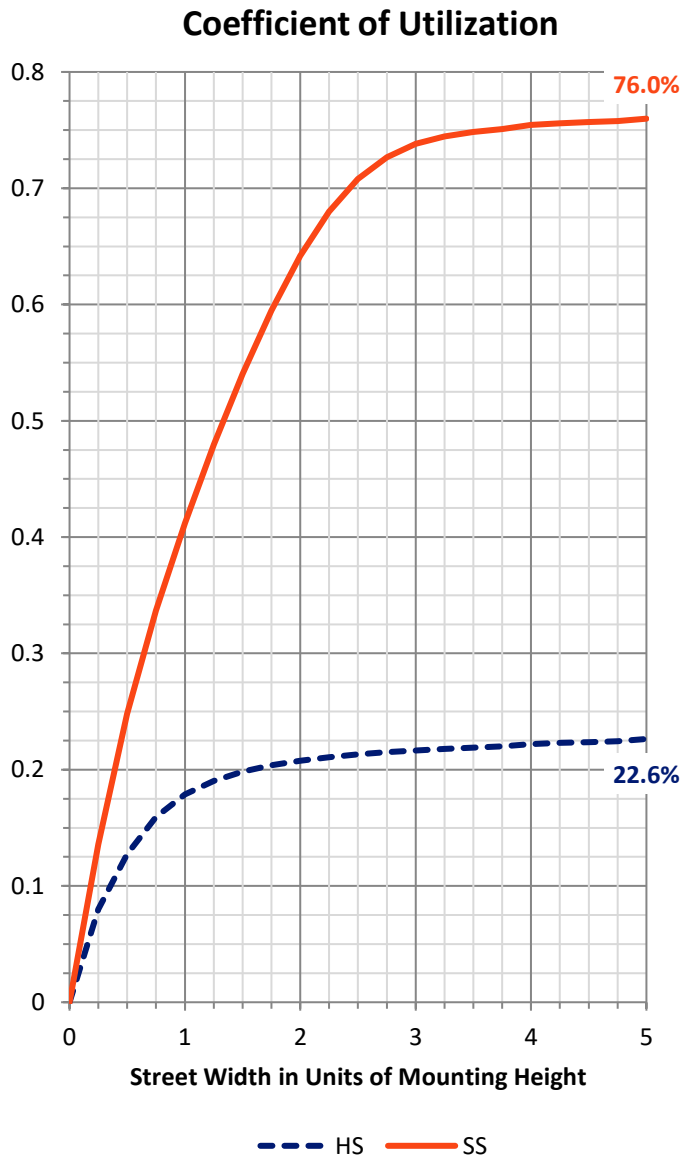
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 11026.0 | 0.0 | 11026.0 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 35546.9 | 0.0 | 35546.9 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 46572.9 | 0.0 | 46572.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 929.8 | 2.0 |
| 10°-20° | 2468.6 | 5.3 |
| 20°-30° | 4031.3 | 8.7 |
| 30°-40° | 5941.8 | 12.8 |
| 40°-50° | 8194.1 | 17.6 |
| 50°-60° | 10351.6 | 22.2 |
| 60°-70° | 10018.5 | 21.5 |
| 70°-80° | 3575.5 | 7.7 |
| 80°-90° | 1061.8 | 2.3 |
| 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° | 46572.9 | 100.0 |
| 0°-180° | 46572.9 | 100.0 |



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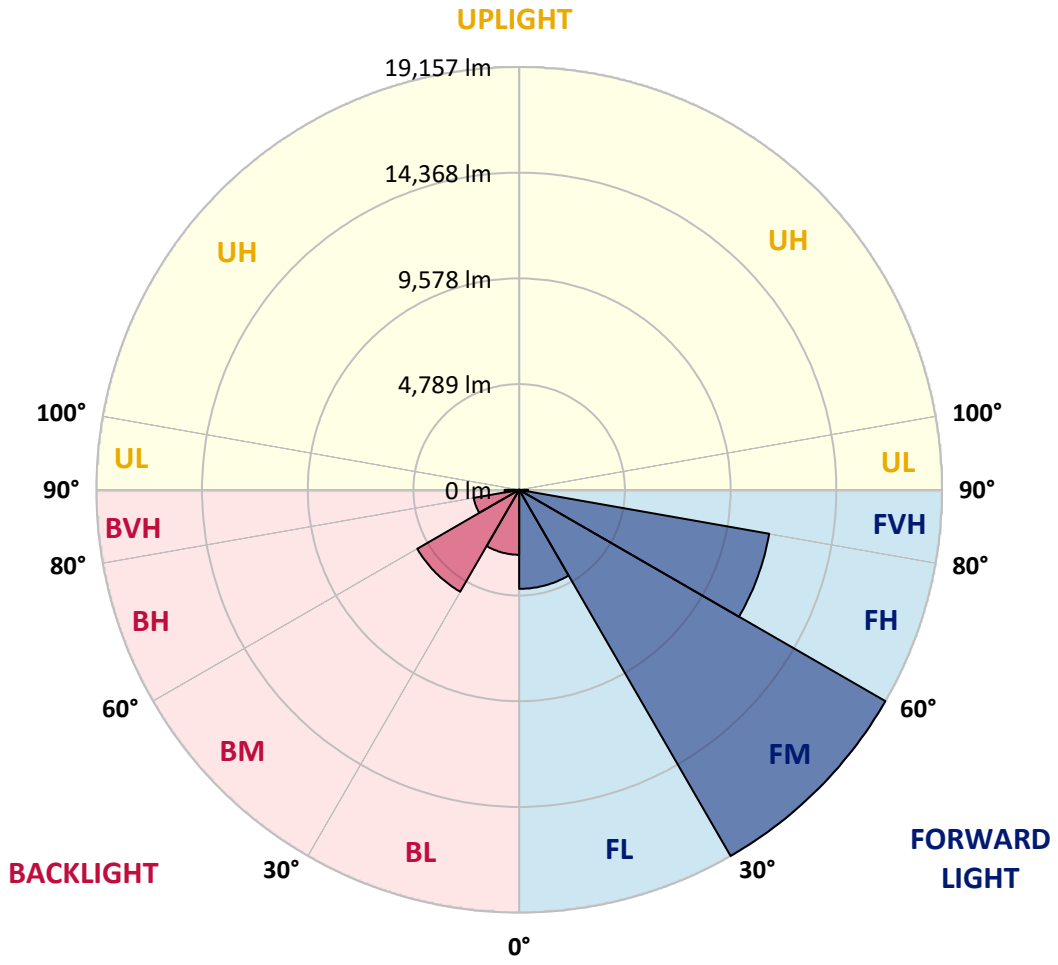
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 4487.4 | 9.6 | | | |
| FM | (30°-60°) | 19156.9 | 41.1 | | | |
| FH | (60°-80°) | 11502.5 | 24.7 | | | G4/12000 |
| FVH | (80°-90°) | 400.1 | 0.9 | | | G3/500 |
| BL | (0°-30°) | 2942.3 | 6.3 | B4/5000 | | |
| BM | (30°-60°) | 5330.6 | 11.4 | B4/8500 | | |
| BH | (60°-80°) | 2091.5 | 4.5 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 661.7 | 1.4 | | | G4/750 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B4-U0-G4**
Type IV Short



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Scaled Data Report

REPORT NUMBER: P1457264
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 10641.0 | 10641.0 | 10641.0 | 10641.0 | *10641.0* | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 |
| 2.5° | 11044.3 | 11013.3 | 10982.2 | 11002.9 | *10961.6* | 10951.2 | 10899.5 | 10878.8 | 10816.8 | 10806.4 | 10692.7 |
| 5° | 11271.8 | 11209.7 | 11199.4 | 11220.1 | *11178.7* | 11178.7 | 11137.4 | 11106.3 | 11013.3 | 10961.6 | 10796.1 |
| 7.5° | 11271.8 | 11261.5 | 11282.1 | 11354.5 | *11364.9* | 11364.9 | 11364.9 | 11375.2 | 11282.1 | 11209.7 | 10951.2 |
| 10° | 10630.6 | 10527.2 | 10754.7 | 11116.7 | *11292.5* | 11395.9 | 11582.0 | 11695.8 | 11623.4 | 11571.7 | 11220.1 |
| 12.5° | 8717.5 | 8727.9 | 9089.8 | 9865.4 | *10568.6* | 10868.5 | 11644.1 | 12057.7 | 12088.7 | 12006.0 | 11561.3 |
| 15° | 7393.9 | 7445.6 | 7631.7 | 8190.1 | *8996.8* | 9441.4 | 11282.1 | 12378.3 | 12626.5 | 12543.7 | 11975.0 |
| 17.5° | 6990.6 | 7021.6 | 7104.3 | 7424.9 | *7879.9* | 8241.9 | 10299.7 | 12585.1 | 13278.0 | 13174.6 | 12440.3 |
| 20° | 6928.5 | 6949.2 | 7052.6 | 7321.5 | *7631.7* | 7838.6 | 9296.6 | 12419.7 | 13888.1 | 13846.7 | 12864.3 |
| 22.5° | 6938.9 | 6959.6 | 7094.0 | 7466.3 | *7786.8* | 7962.6 | 8976.1 | 12037.0 | 14529.2 | 14570.6 | 13298.6 |
| 25° | 6959.6 | 6969.9 | 7176.7 | 7673.1 | *8076.4* | 8293.6 | 9182.9 | 11695.8 | 15067.0 | 15418.6 | 13774.3 |
| 27.5° | 7073.3 | 7104.3 | 7383.5 | 7942.0 | *8417.7* | 8665.8 | 9668.9 | 11809.5 | 15656.4 | 16380.3 | 14343.1 |
| 30° | 7383.5 | 7404.2 | 7745.5 | 8324.6 | *8841.6* | 9100.2 | 10248.0 | 12264.5 | 16380.3 | 17373.0 | 14901.5 |
| 32.5° | 7869.6 | 7890.3 | 8283.2 | 8883.0 | *9441.4* | 9751.7 | 11002.9 | 13133.2 | 17186.9 | 18417.5 | 15459.9 |
| 35° | 8541.7 | 8552.1 | 8996.8 | 9637.9 | *10227.3* | 10578.9 | 11881.9 | 14115.6 | 18024.5 | 19306.8 | 15873.6 |
| 37.5° | 9338.0 | 9410.4 | 9865.4 | 10537.6 | *11230.4* | 11551.0 | 12916.0 | 15263.5 | 18769.1 | 20061.7 | 16111.4 |
| 40° | 10434.2 | 10454.8 | 10899.5 | 11551.0 | *12285.2* | 12595.5 | 13950.1 | 16349.3 | 19586.0 | 20506.4 | 16328.6 |
| 42.5° | 11561.3 | 11737.1 | 12109.4 | 12833.3 | *13381.4* | 13629.6 | 15129.0 | 17342.0 | 20237.5 | 20527.1 | 16235.5 |
| 45° | 13071.1 | 13205.6 | 13577.9 | 14219.0 | *14767.1* | 15056.6 | 16401.0 | 18252.0 | 20568.4 | 20351.3 | 16028.7 |
| 47.5° | 14798.1 | 14880.8 | 15180.7 | 15759.8 | *16370.0* | 16576.8 | 17724.6 | 18769.1 | 20692.5 | 20227.2 | 15935.6 |
| 50° | 16835.3 | 16835.3 | 17052.5 | 17548.8 | *18107.3* | 18396.8 | 18944.9 | 19079.3 | 21054.5 | 20010.0 | 16173.5 |
| 52.5° | 18551.9 | 18634.7 | 18924.2 | 19627.4 | *20185.8* | 20516.7 | 19896.3 | 19555.0 | 20320.3 | 18800.1 | 16245.9 |
| 55° | 20196.2 | 20289.2 | 20940.7 | 21819.7 | *22771.1* | 23133.0 | 21085.5 | 19317.2 | 17848.7 | 17031.8 | 15749.5 |
| 57.5° | 21768.0 | 21964.5 | 22781.4 | 24498.1 | *25935.5* | 25904.4 | 22595.3 | 17186.9 | 14570.6 | 15077.3 | 14663.7 |
| 60° | 23960.3 | 24167.1 | 25470.1 | 27631.4 | *29389.4* | 28655.2 | 22616.0 | 14301.7 | 11354.5 | 12037.0 | 12626.5 |
| 62.5° | 25790.7 | 26142.3 | 28055.4 | 31654.1 | *33267.3* | 32119.4 | 20744.2 | 10951.2 | 7538.7 | 8397.0 | 9762.0 |
| 65° | 25625.2 | 26090.6 | 29058.5 | 34611.6 | *37021.1* | 35956.0 | 18003.8 | 6928.5 | 3888.3 | 5739.3 | 6835.5 |
| 67° | *23370.9* | *23877.6* | *27724.5* | *34715.1* | *38365.5* | *36090.4* | *15201.4* | *4188.1* | *2471.5* | *3981.3* | *4746.6* |
| 67.5° | 22078.2 | 22822.8 | 27062.6 | 34518.6 | *38117.3* | 35521.7 | 13939.8 | 3505.6 | 2326.7 | 3702.1 | 4322.6 |
| 70° | 13577.9 | 14777.4 | 20309.9 | 30516.6 | *34167.0* | 29730.7 | 7745.5 | 1985.5 | 1892.4 | 2481.9 | 2988.6 |
| 72.5° | 4084.7 | 4446.7 | 7838.6 | 19575.7 | *25077.2* | 22036.9 | 3484.9 | 1530.5 | 1695.9 | 1995.8 | 2306.1 |
| 75° | 1985.5 | 2119.9 | 3236.8 | 8004.0 | *12212.8* | 12150.8 | 1944.1 | 1313.3 | 1571.8 | 1675.3 | 1820.0 |
| 77.5° | 1272.0 | 1354.7 | 2016.5 | 4477.7 | *5594.5* | 4984.4 | 1406.4 | 1147.9 | 1396.0 | 1375.4 | 1354.7 |
| 80° | 796.3 | 837.6 | 1292.6 | 2595.6 | *4126.1* | 3443.6 | 1034.1 | 941.0 | 1199.6 | 1065.1 | 961.7 |
| 82.5° | 517.1 | 568.8 | 827.3 | 1582.2 | *2947.2* | 2564.6 | 682.5 | 672.2 | 992.7 | 848.0 | 744.6 |
| 85° | 341.3 | 382.6 | 527.4 | 930.7 | *1747.6* | 1830.4 | 444.7 | 465.3 | 765.2 | 641.1 | 568.8 |
| 87.5° | 124.1 | 155.1 | 268.9 | 413.6 | *816.9* | 1013.4 | 186.1 | 175.8 | 372.3 | 299.9 | 237.8 |
| 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: P1457264
CATALOG NUMBER: GLAN-SB9B-835-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 | 10641.0 |
| 2.5° | 10672.0 | 10641.0 | 10496.2 | 10372.1 | 10279.0 | 10155.0 | 10020.5 | 9865.4 | 9762.0 | 9782.7 | 9751.7 |
| 5° | 10723.7 | 10641.0 | 10361.8 | 9937.8 | 9524.1 | 9007.1 | 8345.3 | 7952.3 | 7652.4 | 7497.3 | 7538.7 |
| 7.5° | 10837.5 | 10692.7 | 10103.3 | 9244.9 | 8169.5 | 7114.7 | 6463.2 | 6090.9 | 5915.1 | 5842.7 | 5832.4 |
| 10° | 11033.9 | 10785.8 | 9772.3 | 8169.5 | 6763.1 | 6049.5 | 5811.7 | 5708.3 | 5687.6 | 5687.6 | 5677.3 |
| 12.5° | 11271.8 | 10878.8 | 9213.9 | 7125.0 | 6090.9 | 5832.4 | 5791.0 | 5801.4 | 5832.4 | 5863.4 | 5811.7 |
| 15° | 11561.3 | 10920.2 | 8521.1 | 6494.2 | 5956.5 | 5894.4 | 5956.5 | 6028.9 | 6080.6 | 6121.9 | 6070.2 |
| 17.5° | 11850.9 | 10878.8 | 7869.6 | 6194.3 | 5977.2 | 6059.9 | 6184.0 | 6297.7 | 6328.8 | 6390.8 | 6349.4 |
| 20° | 12057.7 | 10734.1 | 7311.2 | 6080.6 | 6028.9 | 6215.0 | 6370.1 | 6494.2 | 6556.3 | 6597.6 | 6556.3 |
| 22.5° | 12212.8 | 10547.9 | 6907.9 | 5966.8 | 6028.9 | 6256.4 | 6442.5 | 6587.3 | 6659.7 | 6701.0 | 6649.3 |
| 25° | 12347.3 | 10289.4 | 6597.6 | 5801.4 | 5904.8 | 6121.9 | 6328.8 | 6473.5 | 6576.9 | 6639.0 | 6608.0 |
| 27.5° | 12512.7 | 10082.6 | 6308.1 | 5553.2 | 5646.2 | 5853.1 | 6070.2 | 6246.0 | 6442.5 | 6545.9 | 6525.2 |
| 30° | 12698.9 | 9979.2 | 6028.9 | 5284.3 | 5346.3 | 5553.2 | 5811.7 | 6049.5 | 6318.4 | 6452.8 | 6452.8 |
| 32.5° | 12916.0 | 9906.8 | 5770.3 | 5025.8 | 5077.5 | 5305.0 | 5553.2 | 5770.3 | 6059.9 | 6277.0 | 6266.7 |
| 35° | 13009.1 | 9824.0 | 5563.5 | 4787.9 | 4891.3 | 5077.5 | 5274.0 | 5418.7 | 5718.6 | 5977.2 | 5997.8 |
| 37.5° | 13102.2 | 9793.0 | 5460.1 | 4601.8 | 4684.5 | 4829.3 | 4932.7 | 5005.1 | 5284.3 | 5553.2 | 5563.5 |
| 40° | 13215.9 | 9937.8 | 5532.5 | 4477.7 | 4405.3 | 4550.1 | 4601.8 | 4643.2 | 4787.9 | 4963.7 | 4963.7 |
| 42.5° | 13143.5 | 10041.2 | 5697.9 | 4363.9 | 4064.1 | 4229.5 | 4250.2 | 4239.8 | 4250.2 | 4260.5 | 4250.2 |
| 45° | 12957.4 | 9937.8 | 5697.9 | 4188.1 | 3702.1 | 3877.9 | 3867.6 | 3815.9 | 3733.1 | 3516.0 | 3484.9 |
| 47.5° | 12916.0 | 9875.7 | 5480.8 | 3898.6 | 3340.2 | 3484.9 | 3505.6 | 3402.2 | 3164.4 | 2936.9 | 2864.5 |
| 50° | 13091.8 | 9989.5 | 5139.5 | 3547.0 | 3029.9 | 3154.0 | 3205.7 | 3029.9 | 2761.1 | 2523.2 | 2481.9 |
| 52.5° | 13350.4 | 10134.3 | 4643.2 | 3164.4 | 2771.4 | 2895.5 | 2957.6 | 2761.1 | 2481.9 | 2295.7 | 2275.0 |
| 55° | 13319.3 | 10134.3 | 4084.7 | 2812.8 | 2574.9 | 2668.0 | 2771.4 | 2564.6 | 2347.4 | 2244.0 | 2233.7 |
| 57.5° | 12647.2 | 9751.7 | 3671.1 | 2564.6 | 2388.8 | 2471.5 | 2606.0 | 2409.5 | 2202.7 | 2223.3 | 2254.4 |
| 60° | 11333.8 | 8758.9 | 3360.9 | 2399.1 | 2223.3 | 2306.1 | 2450.8 | 2223.3 | 1954.5 | 1882.1 | 1882.1 |
| 62.5° | 9338.0 | 7218.1 | 3112.7 | 2233.7 | 2068.2 | 2171.6 | 2244.0 | 1944.1 | 1768.3 | 1685.6 | 1685.6 |
| 65° | 7000.9 | 5584.2 | 2854.1 | 2099.2 | 1933.8 | 2047.5 | 1964.8 | 1820.0 | 1644.2 | 1582.2 | 1592.5 |
| 67° | *5191.2* | *4332.9* | *2637.0* | *1985.5* | *1851.1* | *1902.8* | *1840.7* | *1737.3* | *1561.5* | *1509.8* | *1561.5* |
| 67.5° | 4663.8 | 4115.8 | 2585.3 | 1954.5 | 1830.4 | 1871.7 | 1809.7 | 1727.0 | 1540.8 | 1489.1 | 1540.8 |
| 70° | 3205.7 | 3164.4 | 2306.1 | 1809.7 | 1716.6 | 1675.3 | 1706.3 | 1602.9 | 1447.8 | 1427.1 | 1478.8 |
| 72.5° | 2440.5 | 2523.2 | 2068.2 | 1685.6 | 1592.5 | 1540.8 | 1613.2 | 1509.8 | 1354.7 | 1385.7 | 1437.4 |
| 75° | 1913.1 | 2037.2 | 1851.1 | 1509.8 | 1447.8 | 1458.1 | 1602.9 | 1561.5 | 1437.4 | 1468.4 | 1478.8 |
| 77.5° | 1416.7 | 1644.2 | 1582.2 | 1313.3 | 1261.6 | 1406.4 | 1809.7 | 1933.8 | 1716.6 | 1664.9 | 1592.5 |
| 80° | 1034.1 | 1178.9 | 1334.0 | 1085.8 | 1054.8 | 1354.7 | 2233.7 | 2471.5 | 2119.9 | 1913.1 | 1861.4 |
| 82.5° | 765.2 | 827.3 | 1096.2 | 868.7 | 765.2 | 1209.9 | 2481.9 | 2905.8 | 2523.2 | 2130.3 | 2068.2 |
| 85° | 548.1 | 641.1 | 868.7 | 641.1 | 506.7 | 992.7 | 2430.2 | 2843.8 | 2502.5 | 2016.5 | 1964.8 |
| 87.5° | 196.5 | 279.2 | 372.3 | 289.6 | 258.5 | 682.5 | 2006.2 | 2047.5 | 1561.5 | 713.5 | 723.9 |
| 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: SP1-2407-184-10

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-835-U-5WQ

Data in this report applies to families of products including GSS-SB1A-835-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

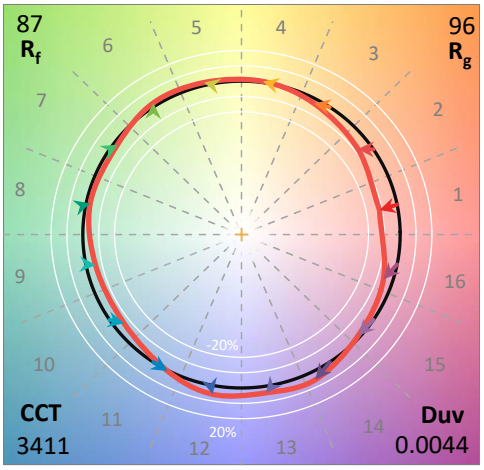
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-10 |
| 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-835-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 3500K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3411 |
| CIE u': | 0.2360 |
| CIE v': | 0.5189 |
| Duv: | 0.0044 |
| CIE x: | 0.4154 |
| CIE y: | 0.4059 |
| CIE z: | 0.1787 |
| Peak Wavelength (nm): | 601 |
| Dominant Wavelength (nm): | 579 |
| Purity: | 46.51914 |
| Rf: | 86.6 |
| Rg: | 95.9 |

| | |
|---|---|
| CRI (Ra): | 83.5 |
| R1: | 81.1 |
| R2: | 88.9 |
| R3: | 97.2 |
| R4: | 83.8 |
| R5: | 81.7 |
| R6: | 86.9 |
| R7: | 86.1 |
| R8: | 62.2 |
| R9: | 6.3 |
| R10: | 75.4 |
| R11: | 84.1 |
| R12: | 69.7 |
| R13: | 82.8 |
| R14: | 98.5 |
| R15: | 72.6 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 35M |
| Operation Time: | 1H 35M |
| 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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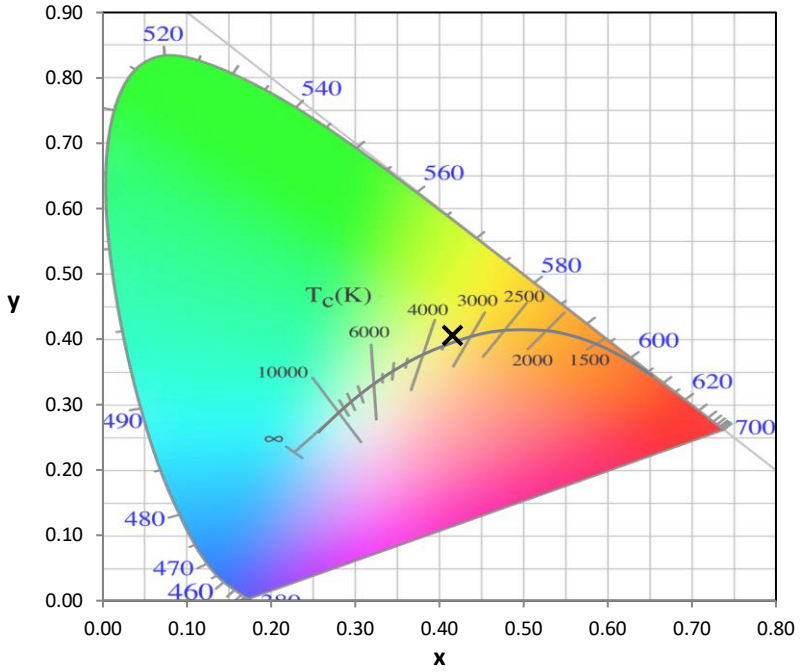
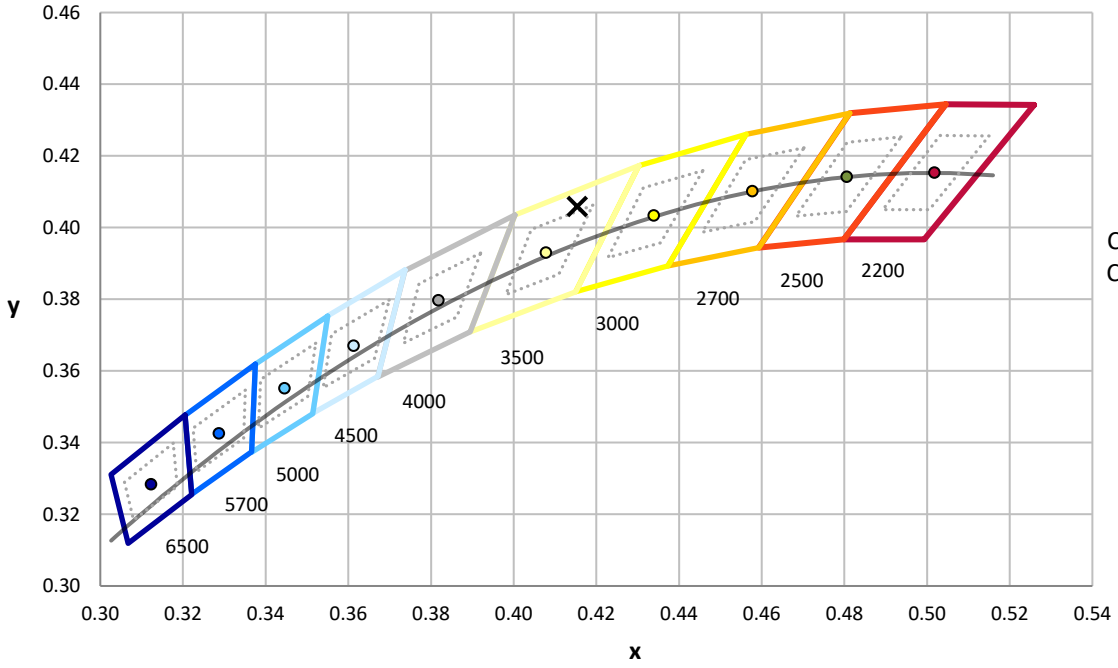
## CIE 1931 Chromaticity Diagram




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




CCT = 3411K
CIE x = 0.4154
CIE y = 0.4059
Duv = 0.0044

Point lies inside the ANSI 3500K 7-step quadrangle

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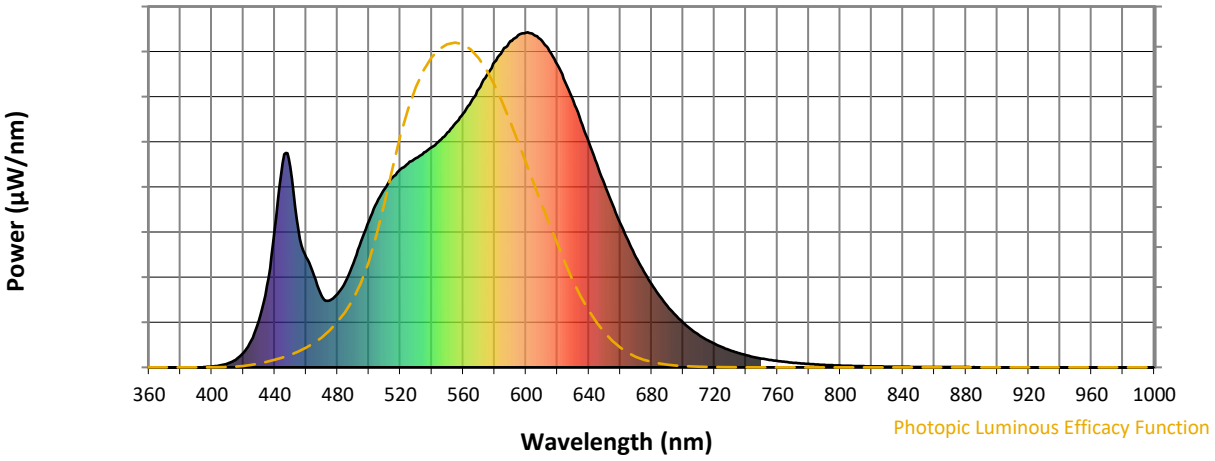
## Photopic Flux vs. Wavelength




## 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 | 311 | NR | 620 | 903 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 376 | NR | 625 | 851 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 438 | NR | 630 | 797 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 491 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 533 | NR | 640 | 672 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 566 | NR | 645 | 607 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 592 | NR | 650 | 546 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 608 | NR | 655 | 487 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 625 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 642 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 657 | NR | 670 | 329 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 22 | NR | 545 | 677 | NR | 675 | 286 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 43 | NR | 550 | 701 | NR | 680 | 248 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 80 | NR | 555 | 728 | NR | 685 | 213 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 140 | NR | 560 | 757 | NR | 690 | 184 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 243 | NR | 565 | 793 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 412 | NR | 570 | 831 | NR | 700 | 134 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 610 | NR | 575 | 872 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 597 | NR | 580 | 911 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 412 | NR | 585 | 944 | NR | 715 | 83 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 330 | NR | 590 | 974 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 274 | NR | 595 | 992 | NR | 725 | 60 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 211 | NR | 600 | 999 | NR | 730 | 51 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 200 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 220 | NR | 610 | 975 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 255 | NR | 615 | 944 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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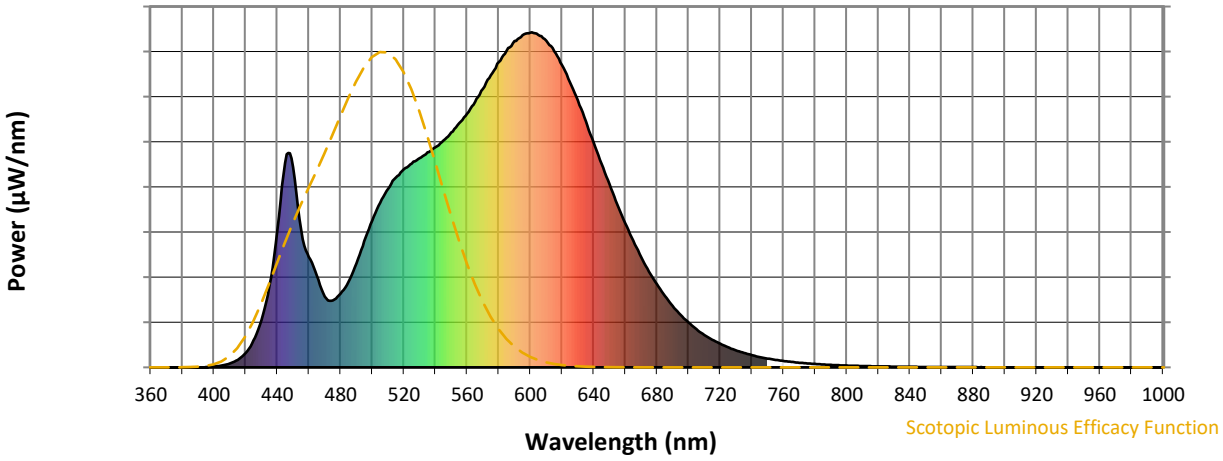
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.48**

| 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 | 311 | NR | 620 | 903 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 376 | NR | 625 | 851 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 438 | NR | 630 | 797 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 491 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 533 | NR | 640 | 672 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 566 | NR | 645 | 607 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 592 | NR | 650 | 546 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 608 | NR | 655 | 487 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 625 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 642 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 657 | NR | 670 | 329 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 22 | NR | 545 | 677 | NR | 675 | 286 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 43 | NR | 550 | 701 | NR | 680 | 248 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 80 | NR | 555 | 728 | NR | 685 | 213 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 140 | NR | 560 | 757 | NR | 690 | 184 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 243 | NR | 565 | 793 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 412 | NR | 570 | 831 | NR | 700 | 134 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 610 | NR | 575 | 872 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 597 | NR | 580 | 911 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 412 | NR | 585 | 944 | NR | 715 | 83 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 330 | NR | 590 | 974 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 274 | NR | 595 | 992 | NR | 725 | 60 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 211 | NR | 600 | 999 | NR | 730 | 51 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 200 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 220 | NR | 610 | 975 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 255 | NR | 615 | 944 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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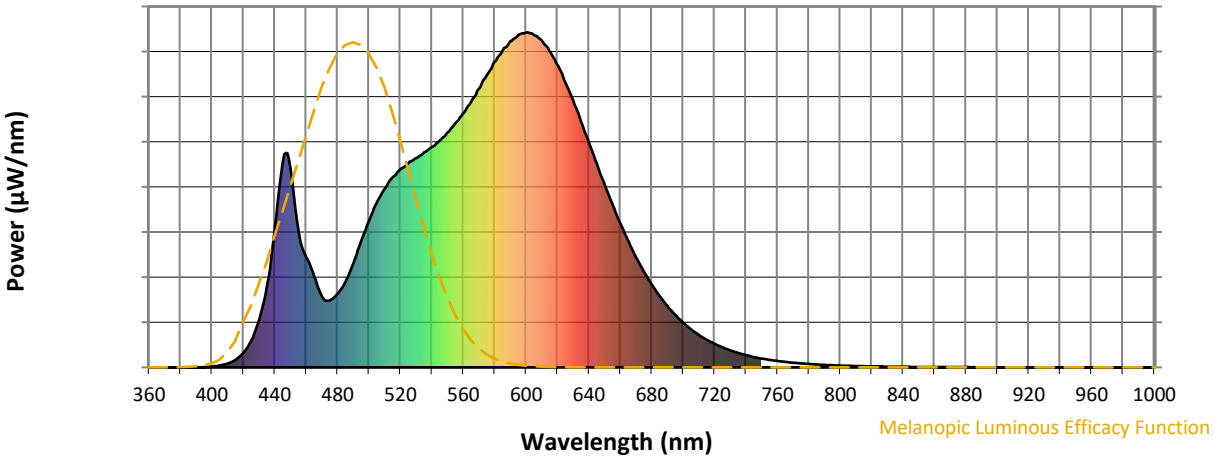
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.88**

| 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 | 311 | NR | 620 | 903 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 376 | NR | 625 | 851 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 438 | NR | 630 | 797 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 491 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 533 | NR | 640 | 672 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 566 | NR | 645 | 607 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 592 | NR | 650 | 546 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 608 | NR | 655 | 487 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 625 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 642 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 657 | NR | 670 | 329 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 22 | NR | 545 | 677 | NR | 675 | 286 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 43 | NR | 550 | 701 | NR | 680 | 248 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 80 | NR | 555 | 728 | NR | 685 | 213 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 140 | NR | 560 | 757 | NR | 690 | 184 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 243 | NR | 565 | 793 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 412 | NR | 570 | 831 | NR | 700 | 134 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 610 | NR | 575 | 872 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 597 | NR | 580 | 911 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 412 | NR | 585 | 944 | NR | 715 | 83 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 330 | NR | 590 | 974 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 274 | NR | 595 | 992 | NR | 725 | 60 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 211 | NR | 600 | 999 | NR | 730 | 51 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 200 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 220 | NR | 610 | 975 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 255 | NR | 615 | 944 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

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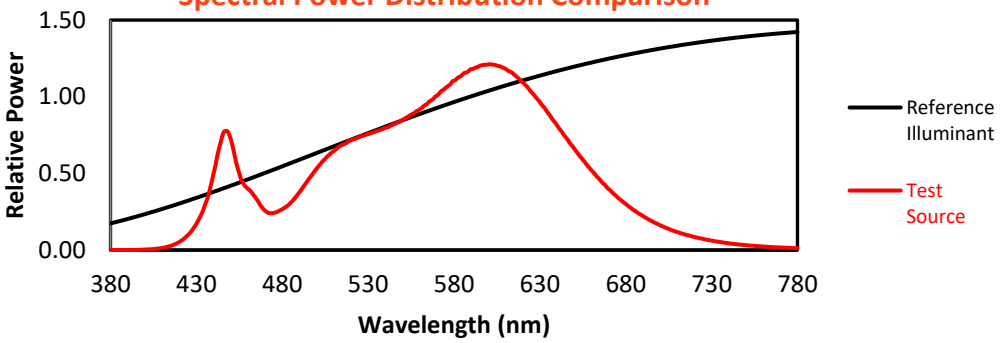
# TM-30-18

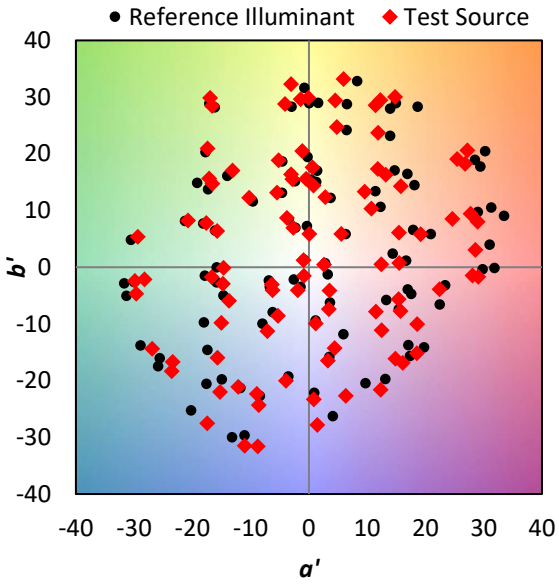
## Summary

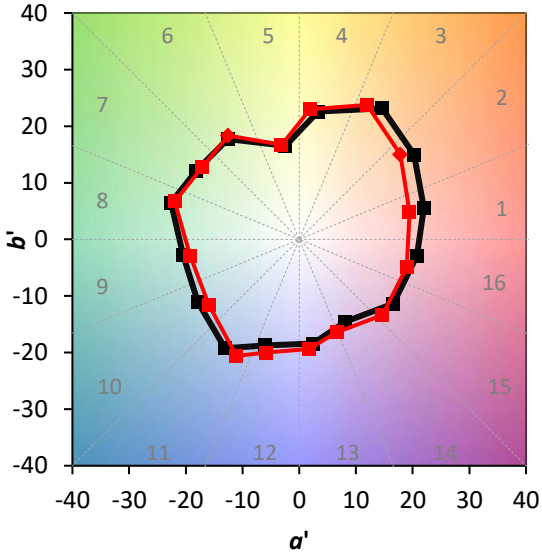
$R_f$ = 86.6
$R_g$ = 95.9
CIE $R_a$ = 83.5
$R_9$ = 6.3

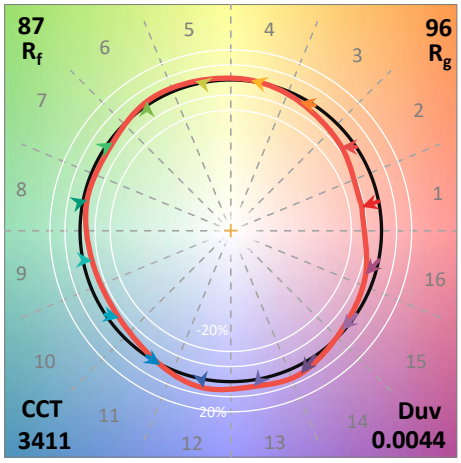
## Spectral Power Distribution Comparison

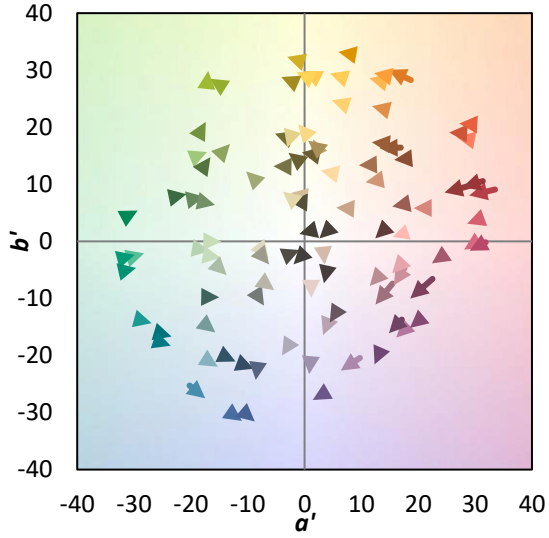



## Color Vector Graphics



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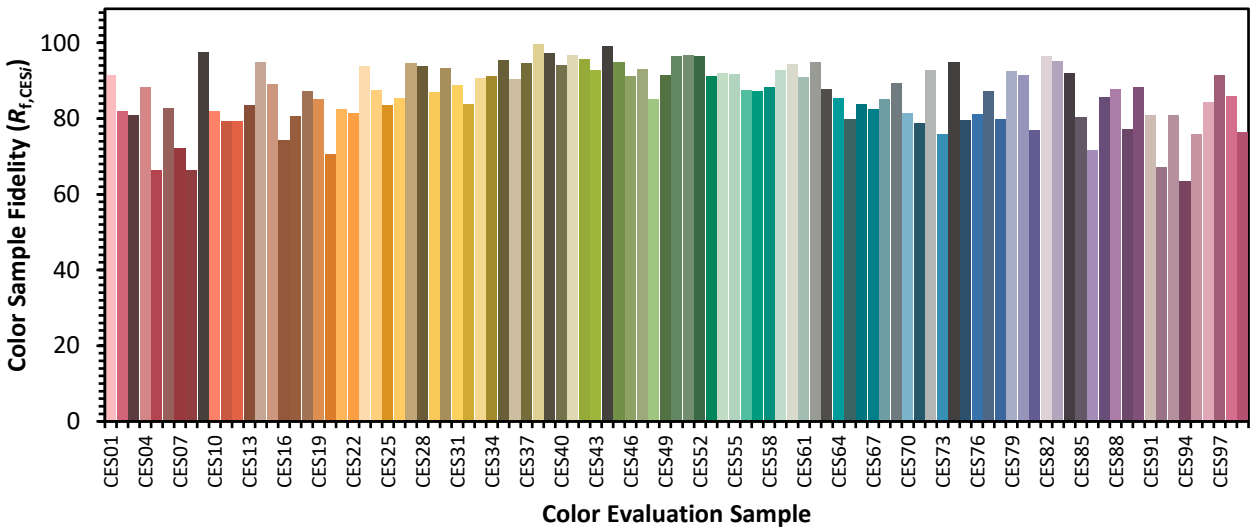
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 85 | CES51 = 97 | CES76 = 81 |
| CES02 = 62 | CES27 = 95 | CES52 = 96 | CES77 = 87 |
| CES03 = 31 | CES28 = 94 | CES53 = 91 | CES78 = 80 |
| CES04 = 70 | CES29 = 87 | CES54 = 92 | CES79 = 93 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 91 |
| CES06 = 51 | CES31 = 89 | CES56 = 88 | CES81 = 77 |
| CES07 = 41 | CES32 = 84 | CES57 = 87 | CES82 = 96 |
| CES08 = 40 | CES33 = 91 | CES58 = 88 | CES83 = 95 |
| CES09 = 29 | CES34 = 91 | CES59 = 93 | CES84 = 92 |
| CES10 = 75 | CES35 = 95 | CES60 = 94 | CES85 = 80 |
| CES11 = 58 | CES36 = 90 | CES61 = 91 | CES86 = 72 |
| CES12 = 64 | CES37 = 95 | CES62 = 95 | CES87 = 86 |
| CES13 = 43 | CES38 = 100 | CES63 = 88 | CES88 = 88 |
| CES14 = 74 | CES39 = 97 | CES64 = 85 | CES89 = 77 |
| CES15 = 71 | CES40 = 94 | CES65 = 80 | CES90 = 88 |
| CES16 = 47 | CES41 = 97 | CES66 = 84 | CES91 = 81 |
| CES17 = 49 | CES42 = 96 | CES67 = 82 | CES92 = 67 |
| CES18 = 56 | CES43 = 93 | CES68 = 85 | CES93 = 81 |
| CES19 = 72 | CES44 = 99 | CES69 = 89 | CES94 = 63 |
| CES20 = 66 | CES45 = 95 | CES70 = 81 | CES95 = 76 |
| CES21 = 86 | CES46 = 91 | CES71 = 79 | CES96 = 84 |
| CES22 = 78 | CES47 = 93 | CES72 = 93 | CES97 = 92 |
| CES23 = 91 | CES48 = 85 | CES73 = 76 | CES98 = 86 |
| CES24 = 90 | CES49 = 92 | CES74 = 95 | CES99 = 77 |
| CES25 = 72 | CES50 = 96 | CES75 = 80 | |



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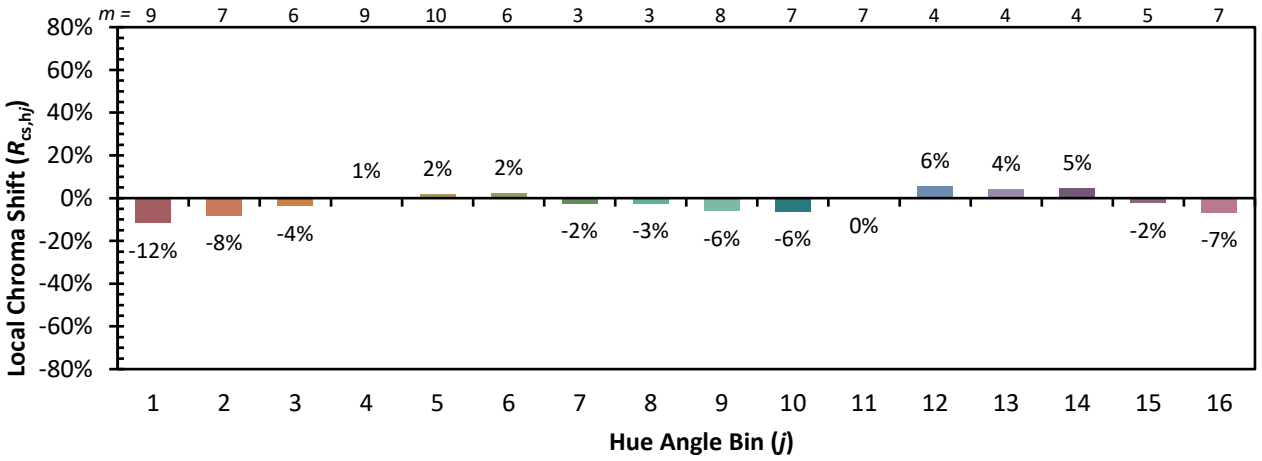
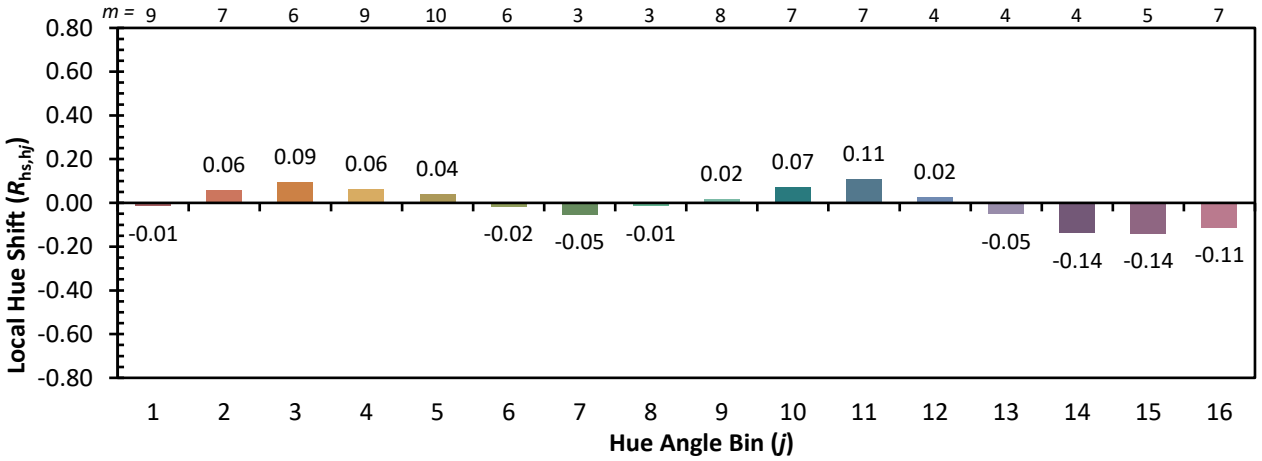
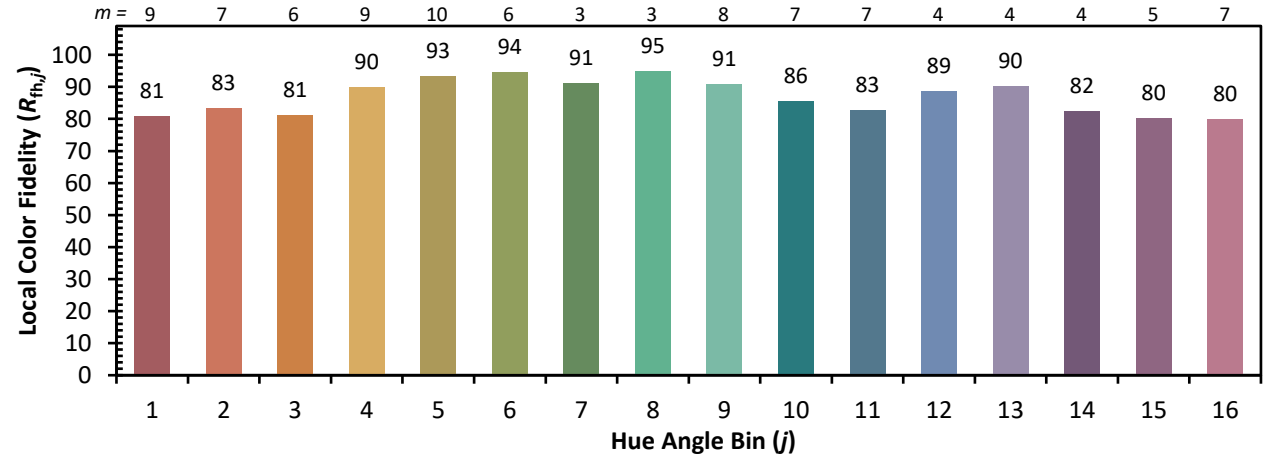
## Color Rendition by Hue-Angle Bin



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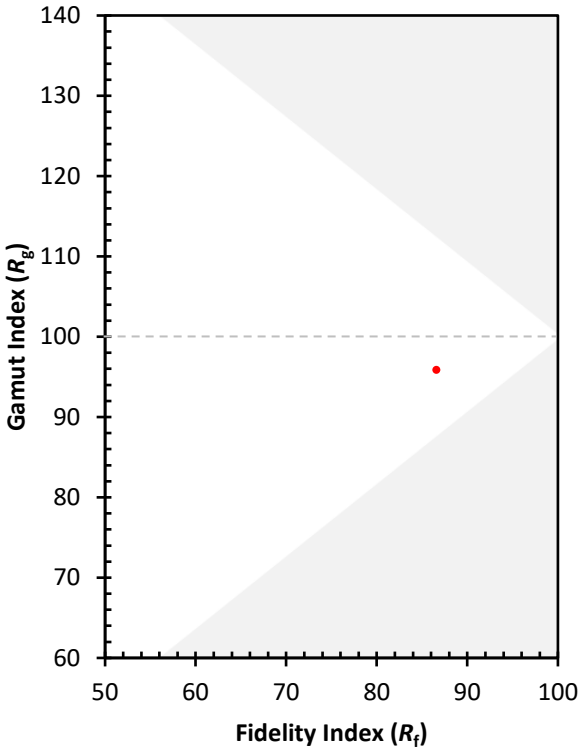
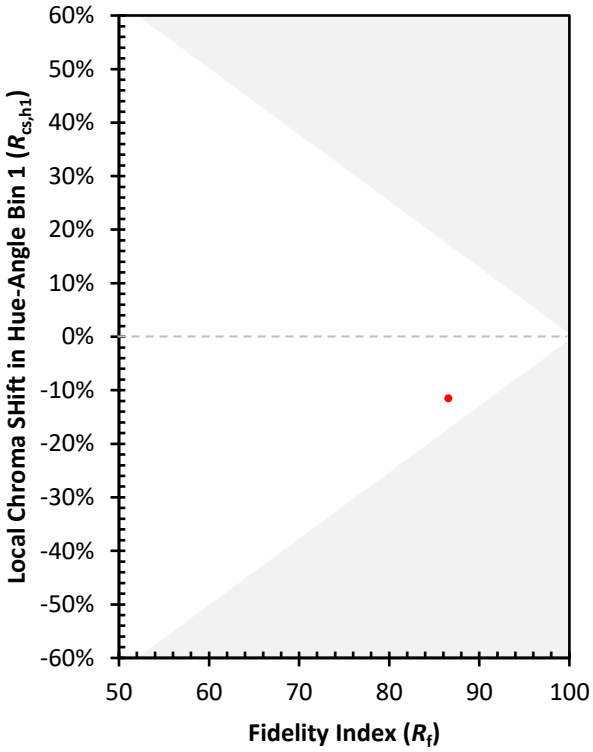
## Measure Comparisons




(END OF REPORT)