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: P1456329

Luminaire Tested: GLAN-SB9C-940-U-T2LG

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: | P1456329 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB9C-940-U-T2LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 615mA 9xLight Square PACKAGE 90CRI 4000K FIXTURE w/ TYPE II LOW GLARE |
| Light Source: | (234) 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 47824.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 106.3 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B4 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 449.8 |
| 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: P1456329
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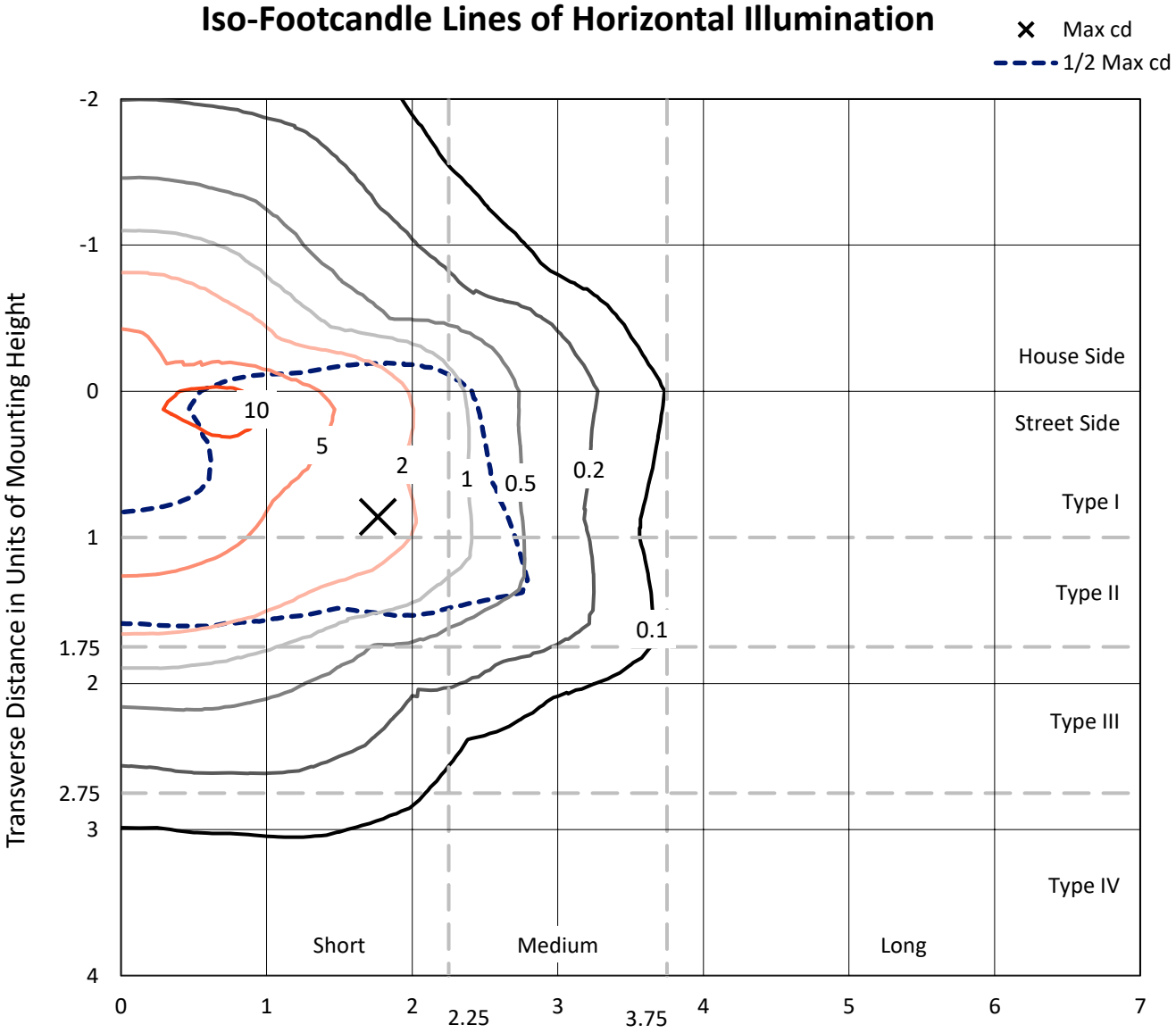
## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 12.5 fc
Type II - Short - N/A

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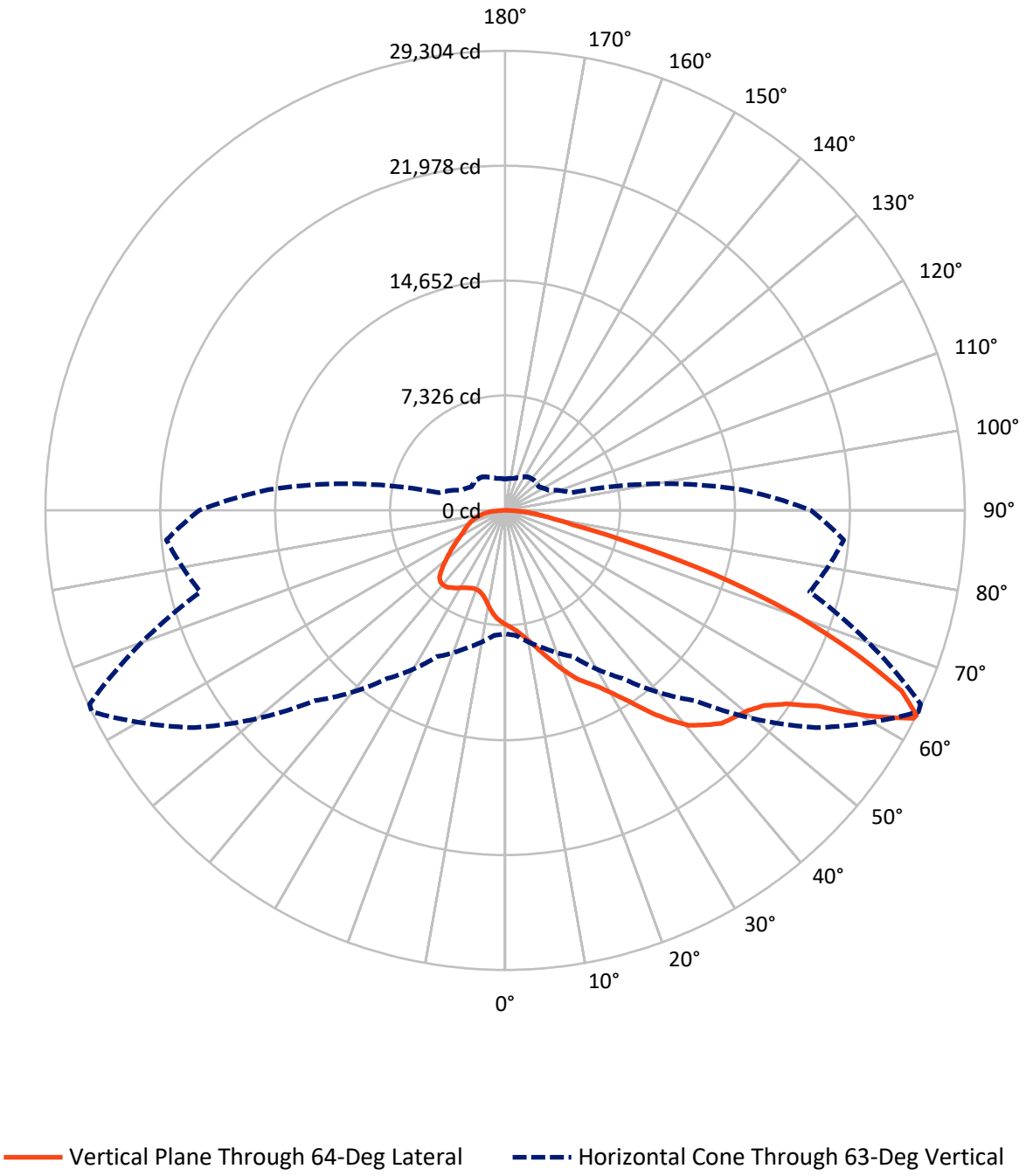
## Luminous Intensity Polar Plot



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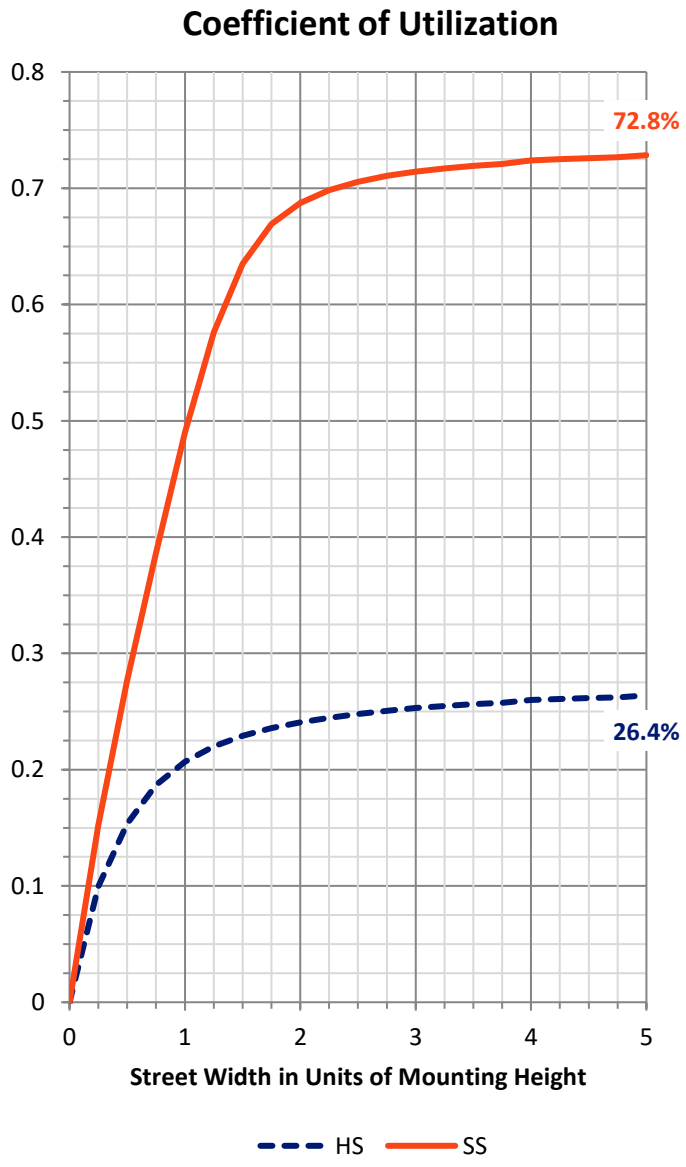
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 12849.0 | 0.0 | 12849.0 |
| | % Fixture | 26.9 | 0.0 | 26.9 |
| **Street Side** | Lumens | 34975.2 | 0.0 | 34975.2 |
| | % Fixture | 73.1 | 0.0 | 73.1 |
| **Total** | Lumens | 47824.3 | 0.0 | 47824.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 668.7 | 1.4 |
| 10°-20° | 2058.6 | 4.3 |
| 20°-30° | 3764.4 | 7.9 |
| 30°-40° | 6475.4 | 13.5 |
| 40°-50° | 9549.5 | 20.0 |
| 50°-60° | 11445.7 | 23.9 |
| 60°-70° | 9186.3 | 19.2 |
| 70°-80° | 3691.3 | 7.7 |
| 80°-90° | 984.3 | 2.1 |
| 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° | 47824.3 | 100.0 |
| 0°-180° | 47824.3 | 100.0 |



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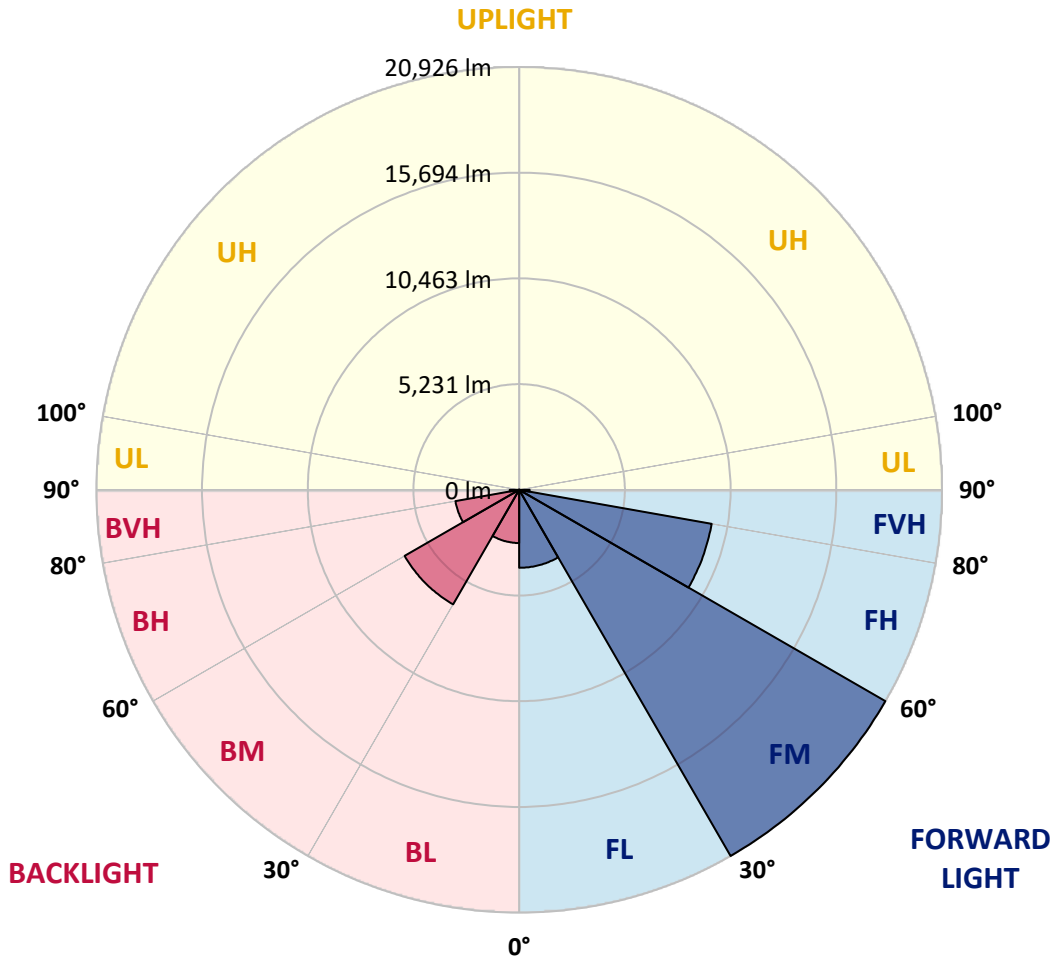
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 3858.5 | 8.1 | | | |
| FM | (30°-60°) | 20925.6 | 43.8 | | | |
| FH | (60°-80°) | 9673.9 | 20.2 | | | G4/12000 |
| FVH | (80°-90°) | 517.1 | 1.1 | | | G4/750 |
| BL | (0°-30°) | 2633.2 | 5.5 | B4/5000 | | |
| BM | (30°-60°) | 6545.0 | 13.7 | B4/8500 | | |
| BH | (60°-80°) | 3203.7 | 6.7 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 467.1 | 1.0 | | | G3/500 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 |
| 2.5° | 7583.9 | 7594.6 | 7562.4 | 7551.6 | 7573.1 | 7530.2 | 7519.4 | 7476.4 | 7455.0 | 7412.0 | 7358.3 |
| 5° | 7798.7 | 7809.4 | 7788.0 | 7788.0 | 7809.4 | 7777.2 | 7766.5 | 7723.5 | 7702.0 | 7659.1 | 7551.6 |
| 7.5° | 7788.0 | 7798.7 | 7820.2 | 7906.1 | 8013.5 | 8056.5 | 8088.7 | 8056.5 | 8045.8 | 7981.3 | 7873.9 |
| 10° | 7616.1 | 7626.8 | 7680.5 | 7809.4 | 8078.0 | 8271.4 | 8475.5 | 8475.5 | 8496.9 | 8443.2 | 8249.9 |
| 12.5° | 7379.8 | 7390.5 | 7519.4 | 7723.5 | 8078.0 | 8411.0 | 8829.9 | 9001.8 | 8991.1 | 8958.8 | 8733.3 |
| 15° | 6810.4 | 6810.4 | 7003.8 | 7390.5 | 7959.8 | 8507.7 | 9130.7 | 9592.6 | 9603.4 | 9635.6 | 9367.0 |
| 17.5° | 6327.0 | 6337.8 | 6498.9 | 6842.7 | 7583.9 | 8454.0 | 9453.0 | 10247.9 | 10280.1 | 10462.7 | 10076.0 |
| 20° | 6370.0 | 6370.0 | 6423.7 | 6574.1 | 7175.7 | 8239.1 | 9635.6 | 10946.1 | 11053.5 | 11483.2 | 10999.8 |
| 22.5° | 6703.0 | 6703.0 | 6746.0 | 6735.2 | 7100.5 | 8099.5 | 9753.8 | 11644.3 | 11837.7 | 12729.3 | 12106.3 |
| 25° | 7315.3 | 7304.6 | 7261.6 | 7197.2 | 7412.0 | 8249.9 | 10022.3 | 12181.5 | 12557.4 | 14104.3 | 13384.6 |
| 27.5° | 8067.3 | 8045.8 | 7981.3 | 7873.9 | 8024.3 | 8701.0 | 10484.2 | 12750.8 | 13159.0 | 15608.2 | 14738.1 |
| 30° | 9001.8 | 8937.4 | 8872.9 | 8733.3 | 8894.4 | 9442.2 | 11171.7 | 13556.4 | 13943.1 | 17316.1 | 16370.8 |
| 32.5° | 10108.2 | 10183.4 | 9968.6 | 9775.2 | 9947.1 | 10452.0 | 12192.2 | 14512.5 | 14931.4 | 19099.3 | 18068.1 |
| 35° | 11762.5 | 11988.1 | 11923.6 | 10946.1 | 11107.2 | 11665.8 | 13384.6 | 15747.8 | 16123.8 | 20721.4 | 19808.3 |
| 37.5° | 13395.3 | 13341.6 | 13395.3 | 12578.9 | 12321.1 | 12997.8 | 14662.9 | 16929.4 | 17294.7 | 22042.6 | 21344.4 |
| 40° | 14705.8 | 14867.0 | 14867.0 | 14201.0 | 13867.9 | 14319.1 | 15823.0 | 18014.4 | 18368.9 | 22773.1 | 22450.8 |
| 42.5° | 16134.5 | 16156.0 | 16113.0 | 15533.0 | 15404.1 | 15522.2 | 16843.5 | 18701.9 | 18991.9 | 23149.1 | 23202.8 |
| 45° | 17745.8 | 17735.1 | 17552.5 | 17069.1 | 16875.7 | 16768.3 | 17477.3 | 19367.9 | 19657.9 | 23320.9 | 23611.0 |
| 47.5° | 19077.8 | 19131.5 | 19142.3 | 18626.7 | 18304.4 | 17842.5 | 18025.1 | 19700.9 | 20033.9 | 23127.6 | 23696.9 |
| 50° | 19153.0 | 19239.0 | 19647.2 | 19797.5 | 19733.1 | 18991.9 | 18530.0 | 20055.4 | 20388.4 | 23170.5 | 24008.4 |
| 52.5° | 18680.4 | 18766.3 | 19292.7 | 19915.7 | 20667.6 | 20313.2 | 19324.9 | 20667.6 | 21011.4 | 23589.5 | 24717.4 |
| 55° | 17412.8 | 17552.5 | 18336.6 | 19206.7 | 20549.5 | 21054.4 | 20732.1 | 21774.1 | 22096.3 | 23922.5 | 25544.5 |
| 57.5° | 15157.0 | 15328.9 | 16413.8 | 17799.5 | 19636.4 | 20882.5 | 22773.1 | 23546.5 | 23815.1 | 24158.8 | 25555.3 |
| 60° | 11332.8 | 11472.5 | 13169.7 | 15038.8 | 17799.5 | 19808.3 | 23986.9 | 26586.5 | 26736.9 | 22880.5 | 24105.1 |
| 62.5° | 8346.5 | 8486.2 | 9624.8 | 10967.6 | 13986.1 | 17831.8 | 24223.3 | 29218.3 | 29239.8 | 20571.0 | 22107.1 |
| 63° | 7863.2 | 8002.8 | 9034.0 | 10290.9 | 13083.8 | 17165.7 | 24148.1 | 29304.2 | 29229.0 | 20098.3 | 21666.7 |
| 65° | 6123.0 | 6370.0 | 7444.2 | 8400.3 | 9807.5 | 13663.8 | 23181.3 | 27778.9 | 27886.3 | 18701.9 | 19453.8 |
| 67.5° | 4167.9 | 4350.5 | 5714.8 | 6821.2 | 7412.0 | 8701.0 | 19013.4 | 23772.1 | 23944.0 | 17251.7 | 15522.2 |
| 70° | 3222.6 | 3308.5 | 4103.5 | 5403.2 | 5994.0 | 5532.1 | 12396.3 | 19142.3 | 19142.3 | 13470.5 | 10999.8 |
| 72.5° | 2524.4 | 2556.6 | 3093.7 | 4221.6 | 4823.2 | 4253.8 | 6907.1 | 13921.7 | 13406.0 | 7992.1 | 7336.8 |
| 75° | 1804.7 | 1847.6 | 2331.0 | 3147.4 | 3845.6 | 3351.5 | 4415.0 | 8110.2 | 7798.7 | 4597.6 | 4898.4 |
| 77.5° | 1428.7 | 1450.2 | 1740.2 | 2320.3 | 3115.2 | 2556.6 | 3362.3 | 4425.7 | 4382.7 | 3233.3 | 3147.4 |
| 80° | 1127.9 | 1170.9 | 1364.2 | 1665.0 | 2406.2 | 1998.0 | 2502.9 | 2921.8 | 2835.9 | 2223.6 | 2019.5 |
| 82.5° | 805.7 | 880.8 | 1052.7 | 1267.6 | 1783.2 | 1428.7 | 1643.5 | 2062.5 | 2062.5 | 1675.8 | 1332.0 |
| 85° | 494.1 | 558.6 | 623.0 | 784.2 | 1267.6 | 923.8 | 870.1 | 1332.0 | 1364.2 | 1256.8 | 859.4 |
| 87.5° | 236.3 | 257.8 | 300.8 | 333.0 | 461.9 | 418.9 | 343.7 | 504.9 | 515.6 | 558.6 | 354.5 |
| 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: P1456329
CATALOG NUMBER: GLAN-SB9C-940-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 | 7283.1 |
| 2.5° | 7347.5 | 7326.1 | 7218.6 | 7111.2 | 6993.1 | 6885.6 | 6778.2 | 6692.3 | 6595.6 | 6617.1 | 6627.8 |
| 5° | 7487.2 | 7433.5 | 7197.2 | 6917.9 | 6552.6 | 6208.9 | 5875.9 | 5639.6 | 5489.2 | 5446.2 | 5360.3 |
| 7.5° | 7788.0 | 7659.1 | 7229.4 | 6638.6 | 5961.8 | 5424.7 | 5113.2 | 4973.6 | 4930.6 | 4941.3 | 4919.8 |
| 10° | 8131.7 | 7938.4 | 7272.3 | 6305.6 | 5446.2 | 5081.0 | 5038.0 | 5123.9 | 5166.9 | 5209.9 | 5220.6 |
| 12.5° | 8582.9 | 8271.4 | 7250.9 | 5940.3 | 5199.1 | 5134.7 | 5295.8 | 5456.9 | 5553.6 | 5618.1 | 5607.3 |
| 15° | 9109.2 | 8690.3 | 7186.4 | 5639.6 | 5166.9 | 5338.8 | 5542.9 | 5725.5 | 5843.7 | 5908.1 | 5875.9 |
| 17.5° | 9743.0 | 9184.4 | 7111.2 | 5446.2 | 5263.6 | 5467.7 | 5682.5 | 5865.1 | 5994.0 | 6037.0 | 6004.8 |
| 20° | 10527.2 | 9743.0 | 6982.3 | 5360.3 | 5338.8 | 5521.4 | 5714.8 | 5886.6 | 5994.0 | 6037.0 | 5994.0 |
| 22.5° | 11451.0 | 10409.0 | 6874.9 | 5360.3 | 5371.0 | 5521.4 | 5661.0 | 5789.9 | 5886.6 | 5918.9 | 5865.1 |
| 25° | 12632.6 | 11182.4 | 6831.9 | 5446.2 | 5381.8 | 5467.7 | 5542.9 | 5618.1 | 5671.8 | 5693.3 | 5671.8 |
| 27.5° | 13835.7 | 12074.0 | 6853.4 | 5553.6 | 5371.0 | 5392.5 | 5392.5 | 5403.2 | 5414.0 | 5424.7 | 5414.0 |
| 30° | 15221.4 | 12976.4 | 6939.3 | 5693.3 | 5392.5 | 5285.1 | 5252.8 | 5188.4 | 5134.7 | 5091.7 | 5048.7 |
| 32.5° | 16564.2 | 13835.7 | 7089.7 | 5897.4 | 5371.0 | 5166.9 | 5102.5 | 4941.3 | 4790.9 | 4662.0 | 4662.0 |
| 35° | 18014.4 | 14727.3 | 7358.3 | 6047.8 | 5349.5 | 5059.5 | 4876.9 | 4694.3 | 4533.1 | 4350.5 | 4350.5 |
| 37.5° | 19260.4 | 15490.0 | 7573.1 | 6219.6 | 5328.0 | 4930.6 | 4640.6 | 4436.5 | 4264.6 | 4082.0 | 4060.5 |
| 40° | 20130.5 | 15930.4 | 7702.0 | 6284.1 | 5252.8 | 4758.7 | 4415.0 | 4157.2 | 3910.1 | 3663.0 | 3652.3 |
| 42.5° | 20549.5 | 15908.9 | 7626.8 | 6262.6 | 5113.2 | 4543.9 | 4221.6 | 3877.9 | 3544.9 | 3319.3 | 3297.8 |
| 45° | 20775.1 | 15769.3 | 7336.8 | 6080.0 | 4887.6 | 4318.3 | 3974.5 | 3609.3 | 3276.3 | 3072.2 | 3029.2 |
| 47.5° | 20732.1 | 15425.5 | 6939.3 | 5628.8 | 4586.8 | 4071.2 | 3727.5 | 3351.5 | 3083.0 | 2964.8 | 2964.8 |
| 50° | 20850.3 | 15157.0 | 6488.2 | 5113.2 | 4178.6 | 3781.2 | 3501.9 | 3158.2 | 2997.0 | 2846.6 | 2792.9 |
| 52.5° | 21376.6 | 15382.6 | 6101.5 | 4629.8 | 3791.9 | 3501.9 | 3308.5 | 3018.5 | 2814.4 | 2717.7 | 2685.5 |
| 55° | 22074.9 | 15866.0 | 5736.2 | 4200.1 | 3416.0 | 3254.8 | 3158.2 | 2889.6 | 2653.3 | 2556.6 | 2502.9 |
| 57.5° | 22203.8 | 16199.0 | 5381.8 | 3781.2 | 3104.4 | 3061.5 | 3029.2 | 2664.0 | 2470.7 | 2395.5 | 2352.5 |
| 60° | 21312.2 | 15951.9 | 4919.8 | 3405.2 | 2857.4 | 2878.9 | 2792.9 | 2524.4 | 2298.8 | 2223.6 | 2180.6 |
| 62.5° | 19797.5 | 15307.4 | 4457.9 | 3083.0 | 2664.0 | 2707.0 | 2621.1 | 2352.5 | 2126.9 | 2051.7 | 2030.2 |
| 63° | *19496.8* | *15135.5* | *4350.5* | *3050.7* | *2621.1* | *2674.8* | *2599.6* | *2331.0* | *2105.4* | *2030.2* | *1998.0* |
| 65° | 17702.8 | 14104.3 | 3974.5 | 2878.9 | 2481.4 | 2481.4 | 2492.1 | 2223.6 | 2030.2 | 1998.0 | 1976.5 |
| 67.5° | 14437.3 | 11773.3 | 3566.4 | 2674.8 | 2331.0 | 2363.2 | 2417.0 | 2266.6 | 2191.4 | 2169.9 | 2148.4 |
| 70° | 10913.9 | 8862.2 | 3211.9 | 2481.4 | 2169.9 | 2277.3 | 2642.5 | 2578.1 | 2298.8 | 2105.4 | 2062.5 |
| 72.5° | 7734.3 | 6037.0 | 2900.3 | 2288.1 | 1976.5 | 2245.1 | 2739.2 | 2459.9 | 2073.2 | 1847.6 | 1804.7 |
| 75° | 5177.7 | 3888.6 | 2588.8 | 2084.0 | 1761.7 | 2073.2 | 2588.8 | 2245.1 | 1804.7 | 1750.9 | 1686.5 |
| 77.5° | 3254.8 | 2771.4 | 2277.3 | 1847.6 | 1525.4 | 1847.6 | 2352.5 | 1998.0 | 1557.6 | 1579.1 | 1482.4 |
| 80° | 1987.3 | 1976.5 | 1912.1 | 1568.3 | 1224.6 | 1471.7 | 1976.5 | 1686.5 | 1246.1 | 1246.1 | 1106.4 |
| 82.5° | 1181.6 | 1428.7 | 1622.0 | 1299.8 | 891.6 | 1052.7 | 1428.7 | 1267.6 | 1042.0 | 1009.7 | 945.3 |
| 85° | 794.9 | 966.8 | 1289.0 | 999.0 | 569.3 | 644.5 | 988.3 | 1063.5 | 956.0 | 837.9 | 784.2 |
| 87.5° | 290.0 | 386.7 | 590.8 | 408.2 | 247.1 | 386.7 | 741.2 | 773.4 | 580.1 | 451.2 | 408.2 |
| 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: SP1-2407-184-16

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-940-U-5WQ

Data in this report applies to families of products including GSS-SB1A-940-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

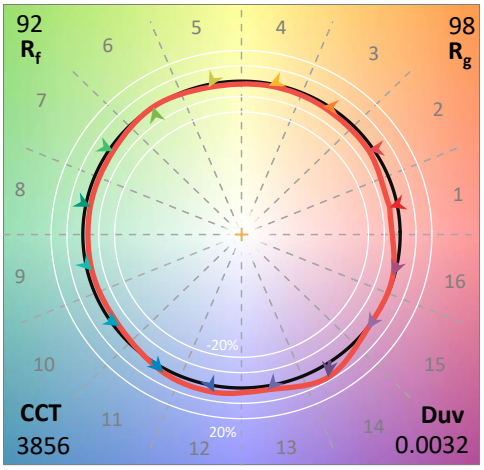
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-16 |
| 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-940-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3856 |
| CIE u': | 0.2261 |
| CIE v': | 0.5084 |
| Duv: | 0.0032 |
| CIE x: | 0.3896 |
| CIE y: | 0.3894 |
| CIE z: | 0.2211 |
| Peak Wavelength (nm): | 614 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 33.77304 |
| Rf: | 91.8 |
| Rg: | 98.4 |

| | |
|---|---|
| CRI (Ra): | 92.1 |
| R1: | 91.8 |
| R2: | 94.1 |
| R3: | 95.3 |
| R4: | 92.8 |
| R5: | 91.0 |
| R6: | 91.6 |
| R7: | 95.0 |
| R8: | 85.2 |
| R9: | 60.7 |
| R10: | 85.2 |
| R11: | 92.4 |
| R12: | 74.5 |
| R13: | 92.3 |
| R14: | 97.0 |
| R15: | 88.5 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 23M |
| Operation Time: | 1H 23M |
| 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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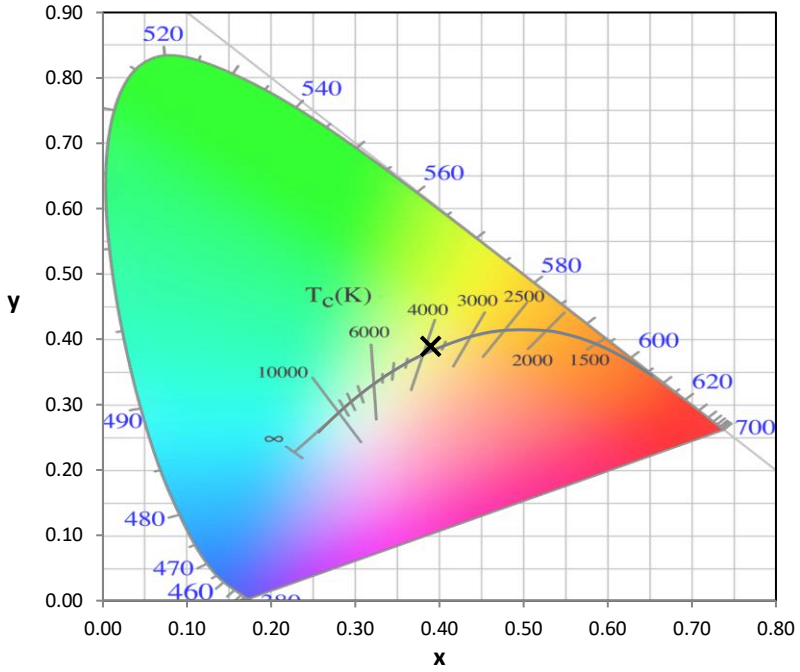
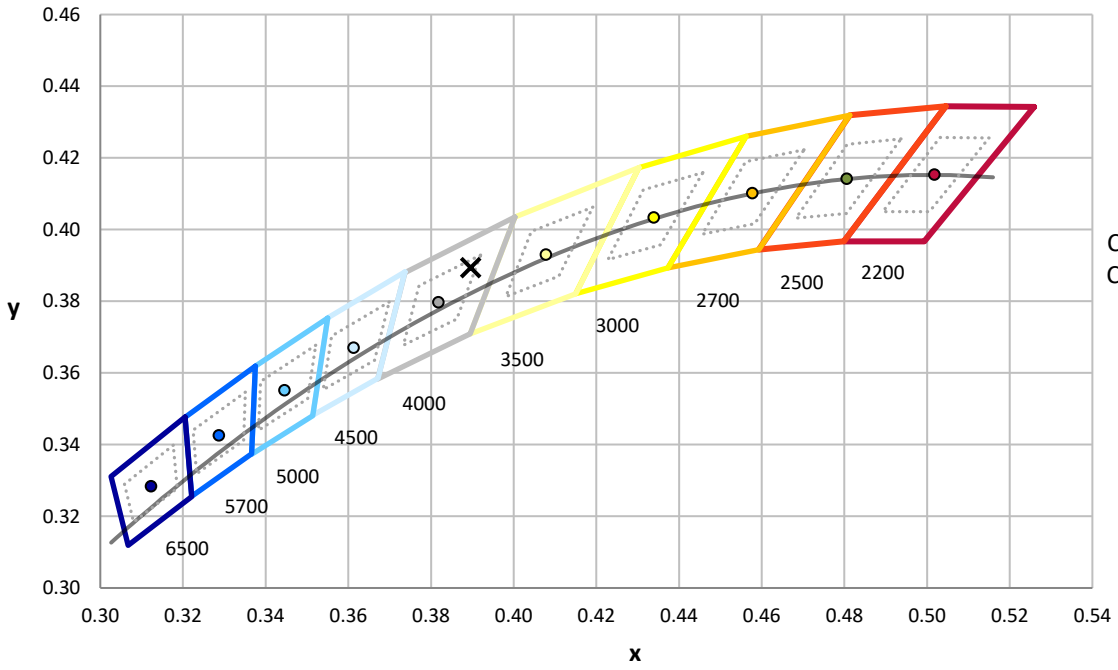
## CIE 1931 Chromaticity Diagram




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




CCT = 3856K
CIE x = 0.3896
CIE y = 0.3894
Duv = 0.0032

Point lies inside the ANSI 4000K 4-step quadrangle

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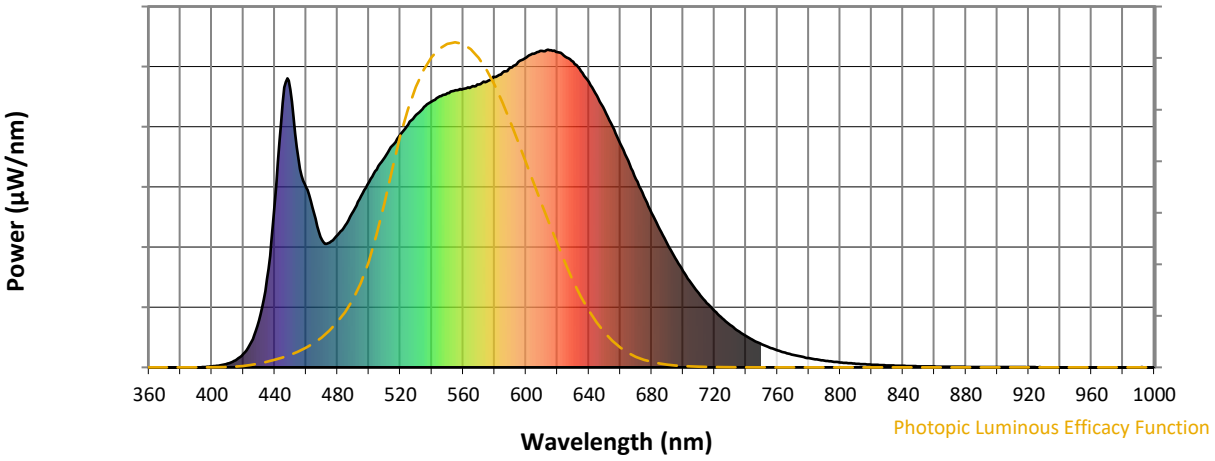
## Photopic Flux vs. Wavelength




## 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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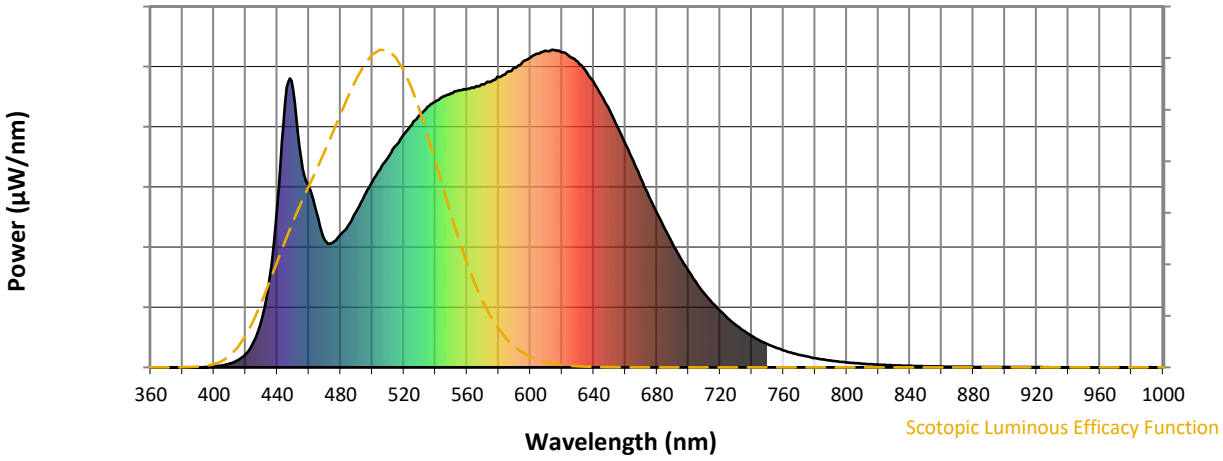
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.72**

| 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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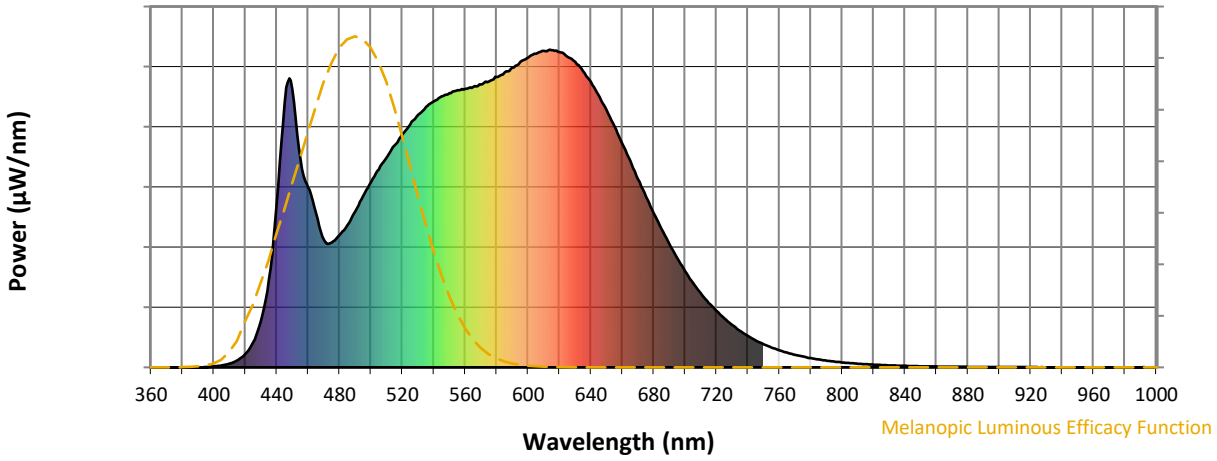
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.52**

| 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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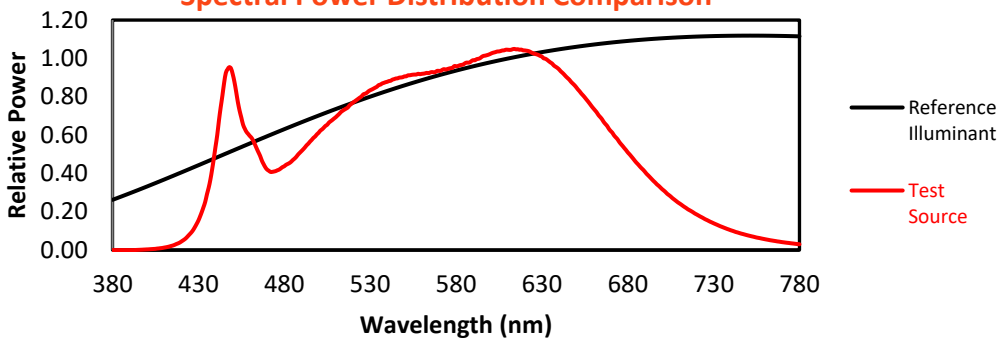
# TM-30-18

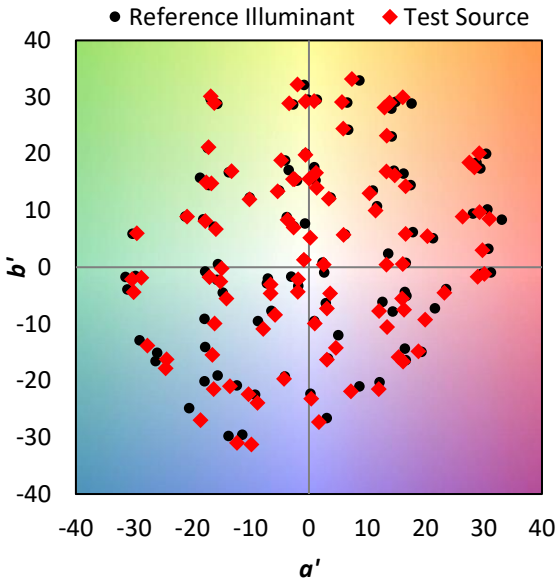
## Summary

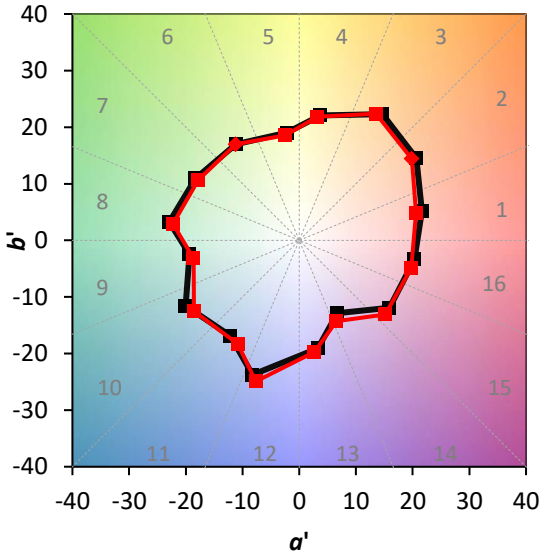
$R_f$ = 91.8
$R_g$ = 98.4
CIE $R_a$ = 92.1
$R_9$ = 60.7

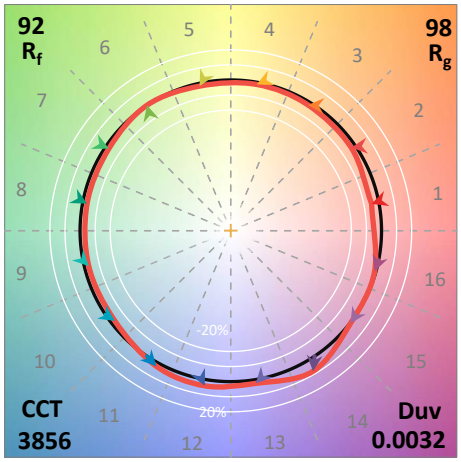
## Spectral Power Distribution Comparison

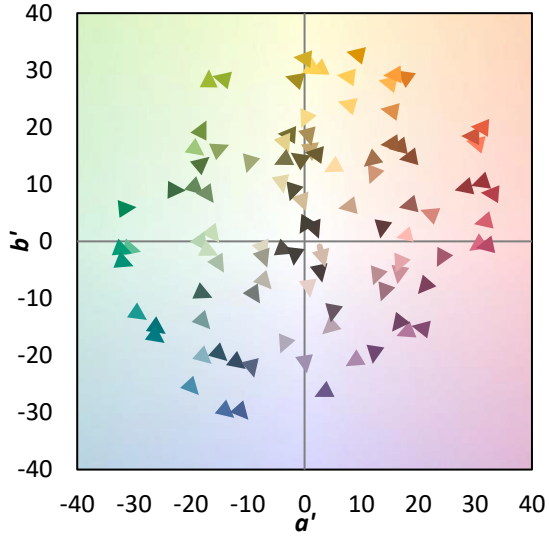



## Color Vector Graphics



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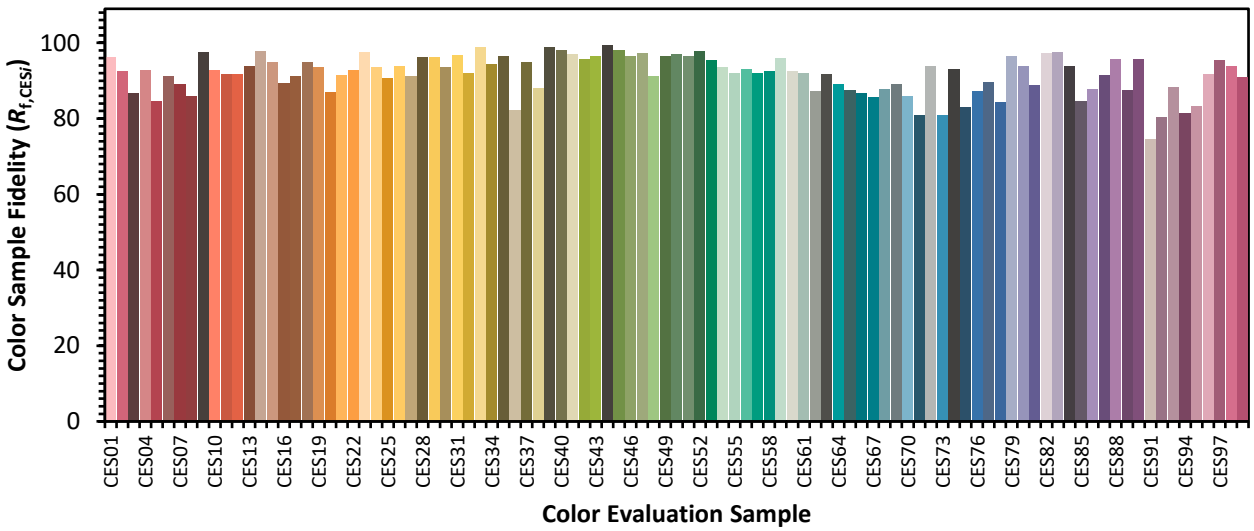
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 94 | CES51 = 96 | CES76 = 87 |
| CES02 = 62 | CES27 = 91 | CES52 = 98 | CES77 = 90 |
| CES03 = 31 | CES28 = 96 | CES53 = 95 | CES78 = 84 |
| CES04 = 69 | CES29 = 96 | CES54 = 94 | CES79 = 96 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 94 |
| CES06 = 50 | CES31 = 97 | CES56 = 93 | CES81 = 89 |
| CES07 = 42 | CES32 = 92 | CES57 = 92 | CES82 = 97 |
| CES08 = 41 | CES33 = 99 | CES58 = 92 | CES83 = 98 |
| CES09 = 29 | CES34 = 94 | CES59 = 96 | CES84 = 94 |
| CES10 = 74 | CES35 = 96 | CES60 = 93 | CES85 = 85 |
| CES11 = 57 | CES36 = 82 | CES61 = 92 | CES86 = 88 |
| CES12 = 63 | CES37 = 95 | CES62 = 87 | CES87 = 92 |
| CES13 = 43 | CES38 = 88 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 89 | CES89 = 87 |
| CES15 = 71 | CES40 = 98 | CES65 = 88 | CES90 = 96 |
| CES16 = 47 | CES41 = 97 | CES66 = 87 | CES91 = 74 |
| CES17 = 49 | CES42 = 96 | CES67 = 86 | CES92 = 80 |
| CES18 = 56 | CES43 = 96 | CES68 = 88 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 89 | CES94 = 82 |
| CES20 = 66 | CES45 = 98 | CES70 = 86 | CES95 = 83 |
| CES21 = 85 | CES46 = 97 | CES71 = 81 | CES96 = 92 |
| CES22 = 78 | CES47 = 97 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 91 | CES73 = 81 | CES98 = 94 |
| CES24 = 90 | CES49 = 96 | CES74 = 93 | CES99 = 91 |
| CES25 = 71 | CES50 = 97 | CES75 = 83 | |



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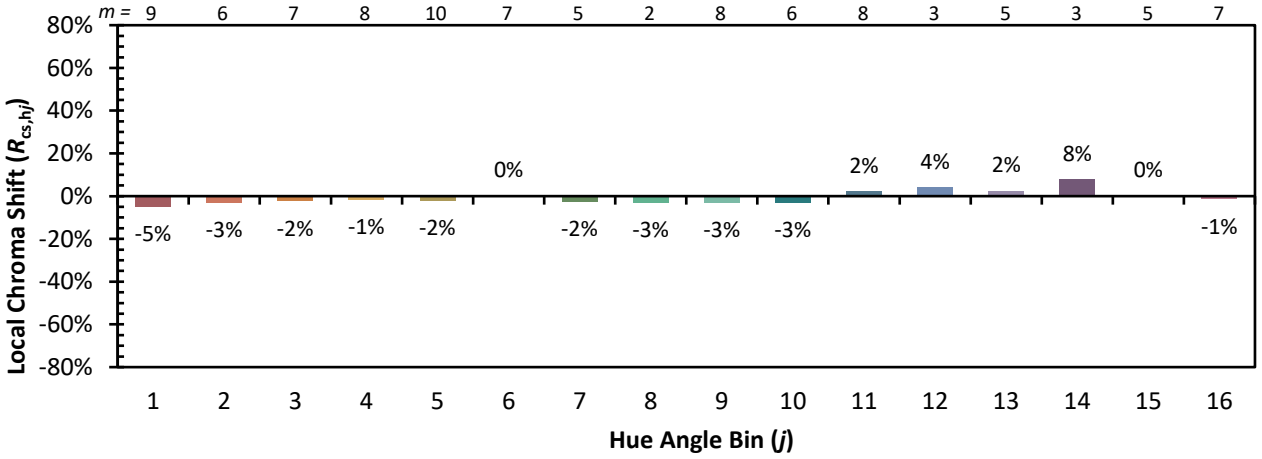
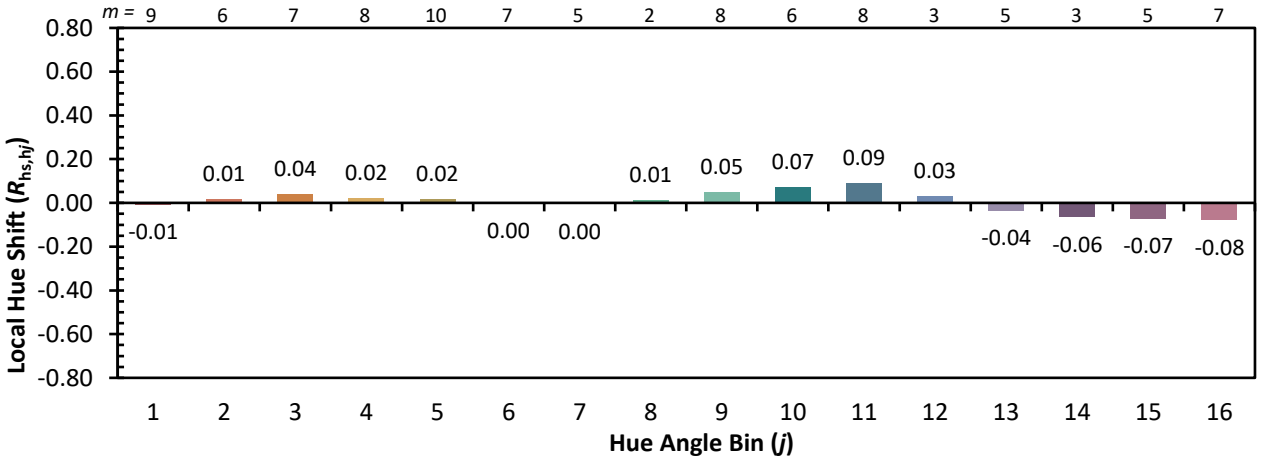
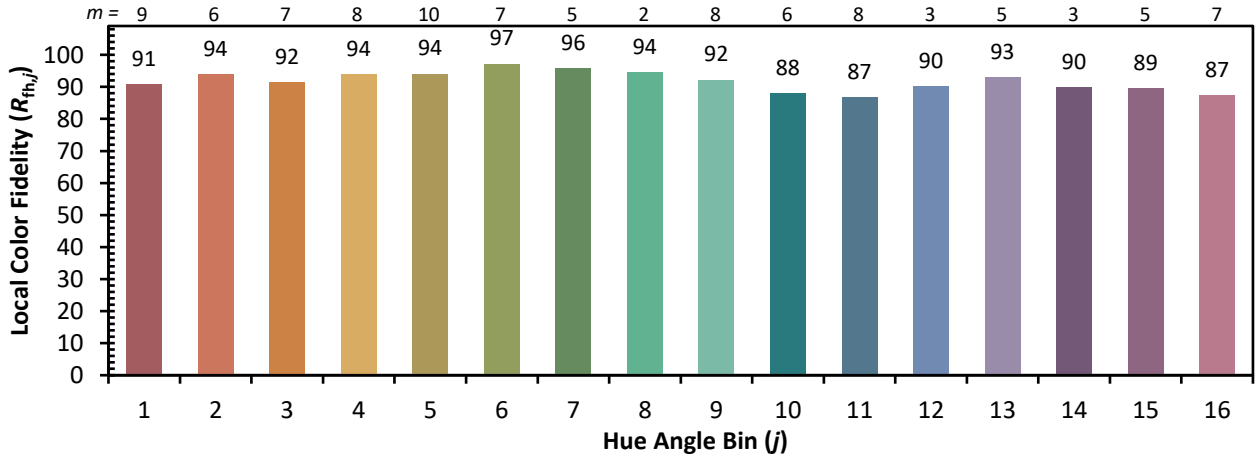
## Color Rendition by Hue-Angle Bin



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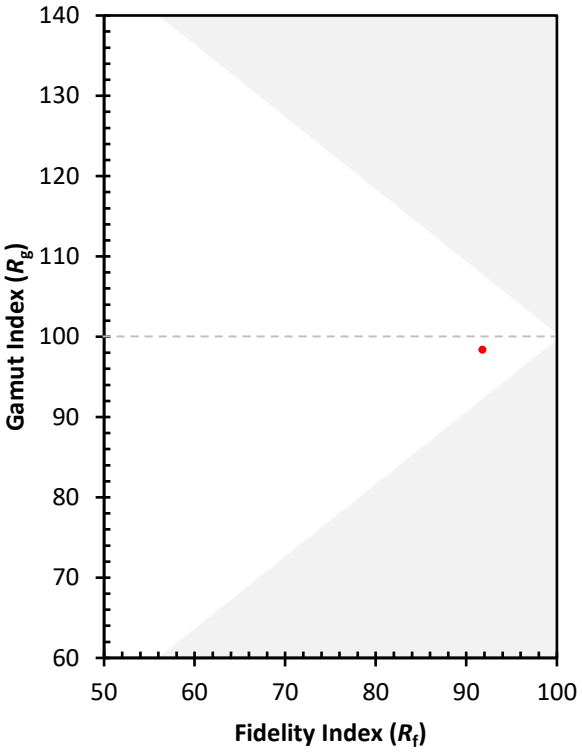
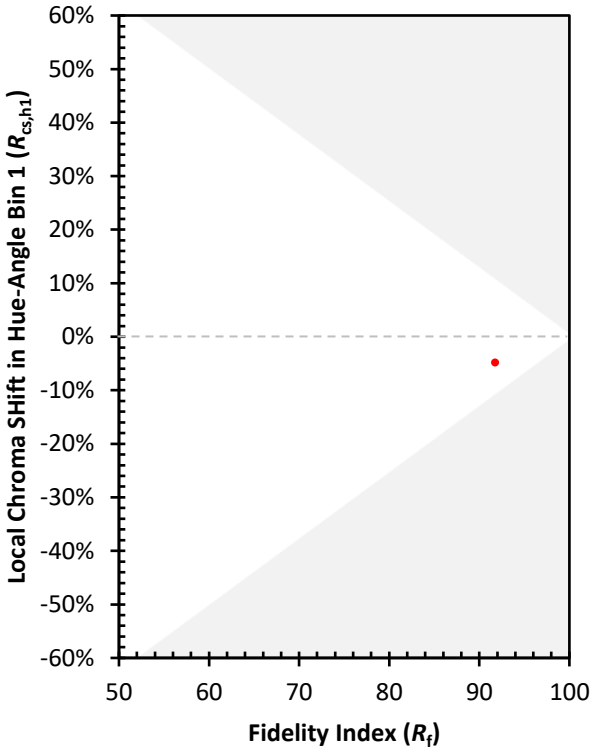
# TM-30-18

## Measure Comparisons




(END OF REPORT)