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: P1363464

Luminaire Tested: **GSS-SB5B-735-U-SL3**

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: | P1363464 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB5B-735-U-SL3 |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 5SQUARE 184W 70CRI 3500K FIXTURE w/ TYPE III SPILL CONTROL DISTRIBUTION OPTIC |
| Light Source: | (130) 3500K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 25548.4 lumens |
| Efficiency: | N/A |
| Efficacy: | 138.9 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type III - Medium |
| BUG Rating: | B3 - U0 - G4 |

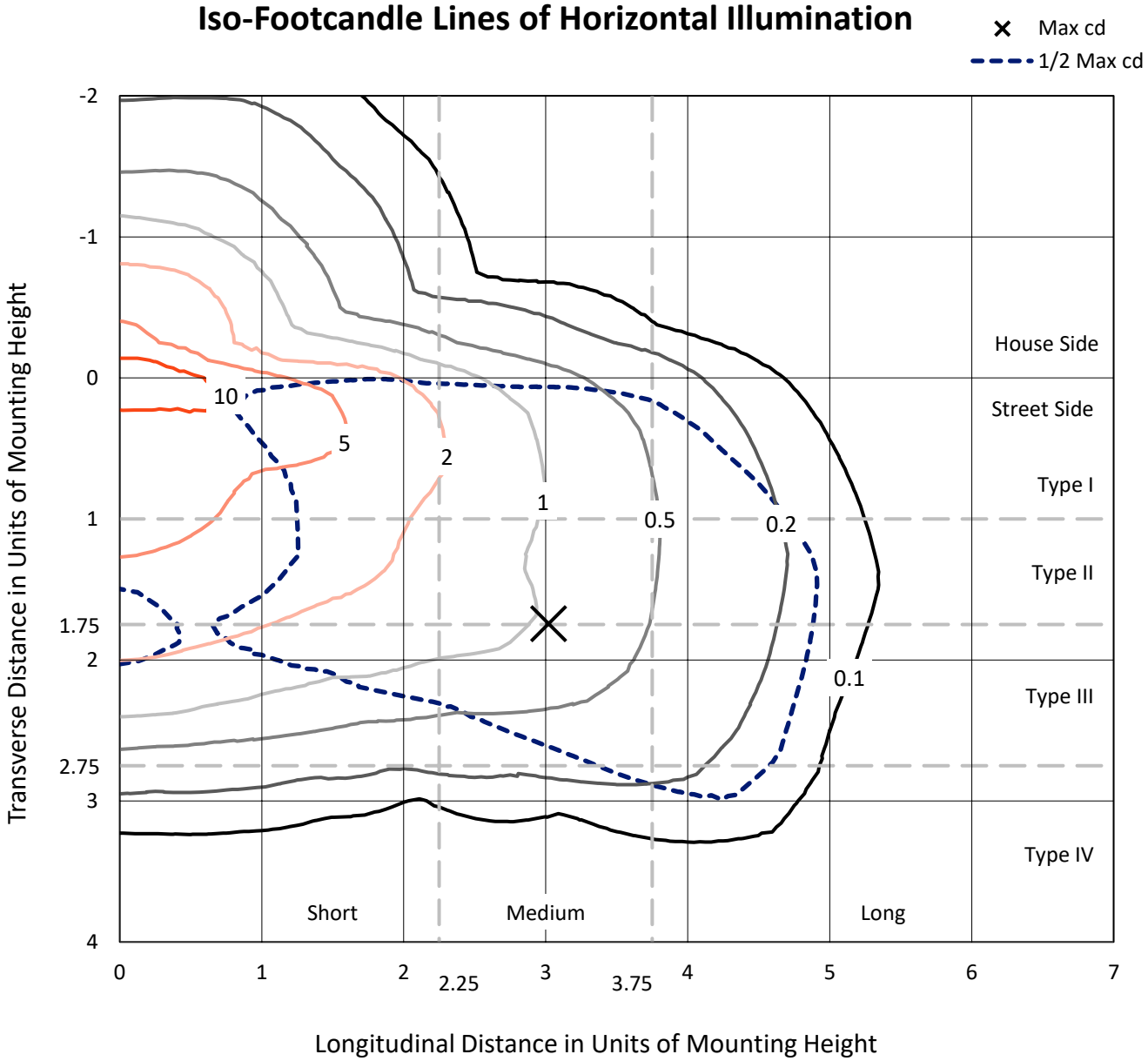
| | |
|---|---|
| Input Watts (W): | 184 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 11.1% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1363464
CATALOG NUMBER: GSS-SB5B-735-U-SL3

## Iso-Footcandle Lines of Horizontal Illumination



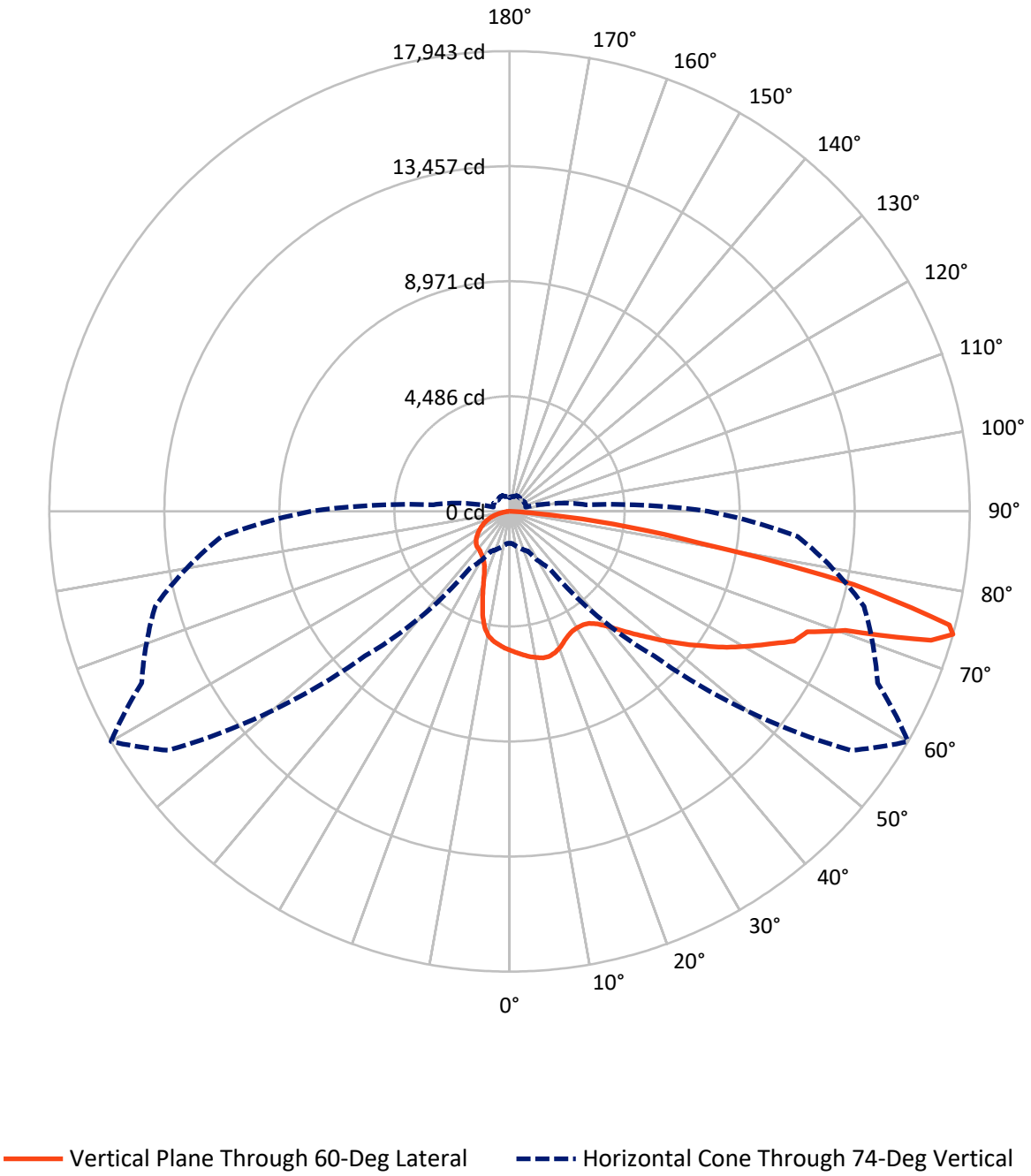

Based on 20 foot mounting height. Maximum calculated value = 13.5 fc
Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

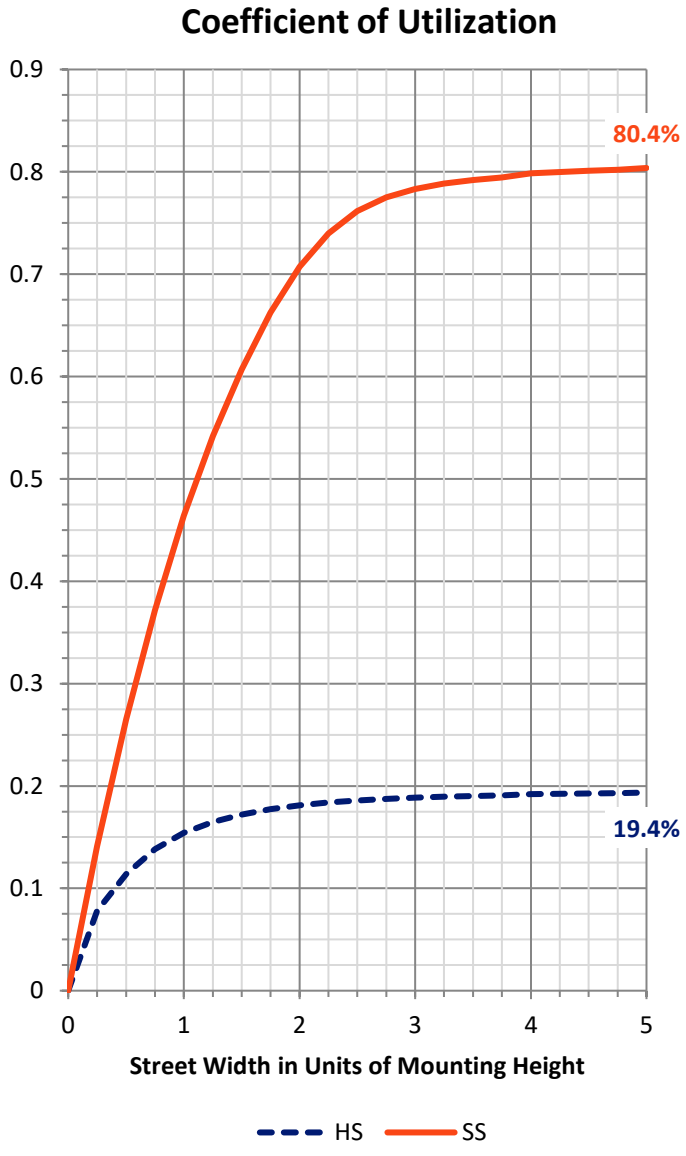
REPORT NUMBER: P1363464
CATALOG NUMBER: GSS-SB5B-735-U-SL3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 4987.0 | 0.0 | 4987.0 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| **Street Side** | Lumens | 20561.5 | 0.0 | 20561.5 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| **Total** | Lumens | 25548.4 | 0.0 | 25548.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 498.6 | 2.0 |
| 10°-20° | 1223.5 | 4.8 |
| 20°-30° | 1829.3 | 7.2 |
| 30°-40° | 2607.7 | 10.2 |
| 40°-50° | 3749.6 | 14.7 |
| 50°-60° | 5020.5 | 19.7 |
| 60°-70° | 5895.4 | 23.1 |
| 70°-80° | 4204.9 | 16.5 |
| 80°-90° | 518.9 | 2.0 |
| 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° | 25548.4 | 100.0 |
| 0°-180° | 25548.4 | 100.0 |



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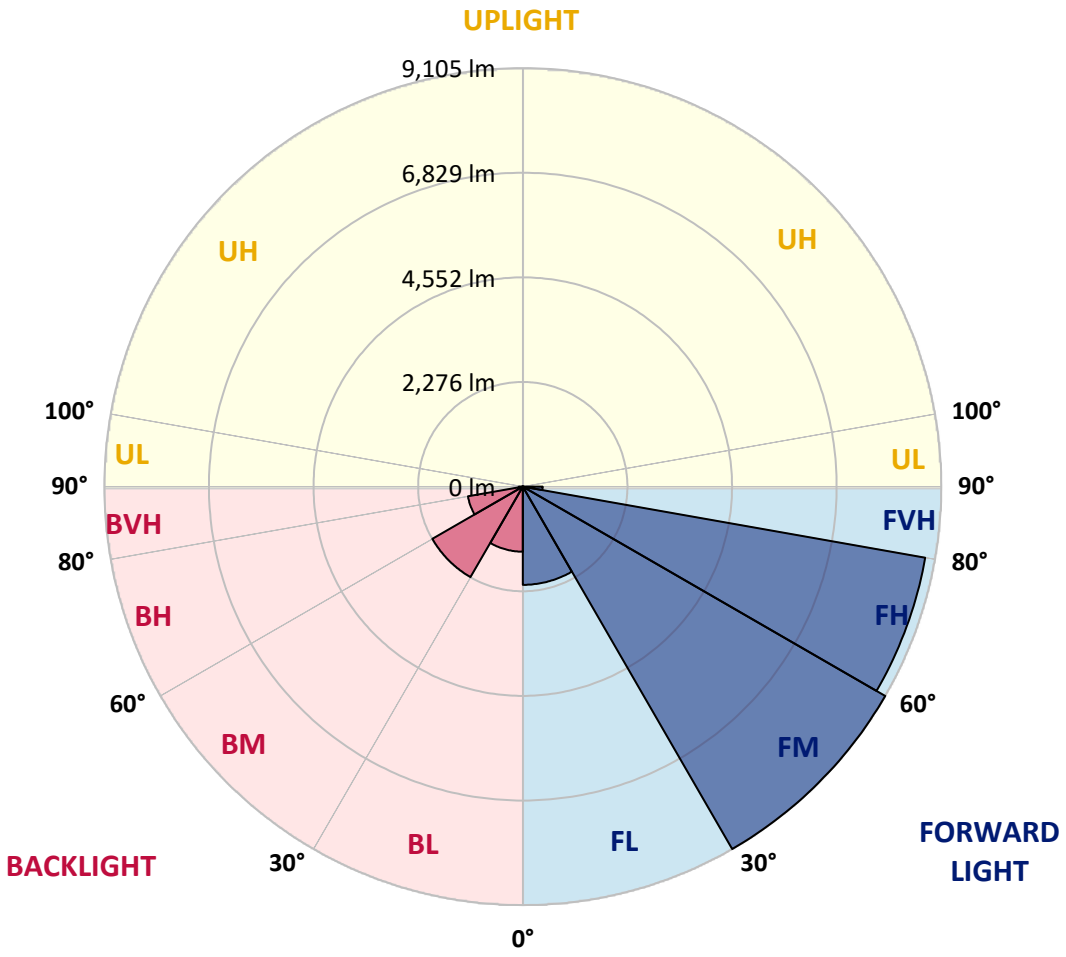
Scaled Data Report

REPORT NUMBER: P1363464
CATALOG NUMBER: GSS-SB5B-735-U-SL3

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 2136.2 | 8.4 | | | |
| FM | (30°-60°) | 9104.9 | 35.6 | | | |
| FH | (60°-80°) | 8889.1 | 34.8 | | | G4/12000 |
| FVH | (80°-90°) | 431.3 | 1.7 | | | G3/500 |
| BL | (0°-30°) | 1415.3 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 2272.9 | 8.9 | B2/2500 | | |
| BH | (60°-80°) | 1211.2 | 4.7 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 87.7 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G4**
Type III Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 60° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 |
| 2.5° | 5590.7 | 5597.1 | 5571.6 | 5552.6 | 5552.6 | 5520.8 | 5520.8 | 5520.8 | 5489.0 | 5482.6 | 5438.1 |
| 5° | 5654.3 | 5648.0 | 5635.2 | 5641.6 | 5648.0 | 5635.2 | 5641.6 | 5622.5 | 5578.0 | 5565.3 | 5495.3 |
| 7.5° | 5476.2 | 5476.2 | 5508.0 | 5571.6 | 5660.7 | 5705.2 | 5730.6 | 5717.9 | 5698.8 | 5660.7 | 5558.9 |
| 10° | 4833.8 | 4878.4 | 4973.8 | 5183.7 | 5444.4 | 5660.7 | 5800.6 | 5794.2 | 5800.6 | 5749.7 | 5635.2 |
| 12.5° | 4267.8 | 4286.9 | 4375.9 | 4560.3 | 4935.6 | 5399.9 | 5787.9 | 5864.2 | 5883.3 | 5851.5 | 5711.6 |
| 15° | 3962.5 | 3956.1 | 4026.1 | 4172.4 | 4458.6 | 4967.4 | 5648.0 | 5857.9 | 5972.3 | 5966.0 | 5819.7 |
| 17.5° | 3828.9 | 3835.3 | 3873.4 | 3968.8 | 4178.7 | 4598.5 | 5399.9 | 5781.5 | 6016.9 | 6093.2 | 5921.5 |
| 20° | 3892.5 | 3873.4 | 3892.5 | 3911.6 | 4026.1 | 4356.8 | 5132.8 | 5648.0 | 6055.0 | 6214.0 | 6035.9 |
| 22.5° | 4026.1 | 4007.0 | 4000.6 | 3987.9 | 4013.4 | 4216.9 | 4891.1 | 5482.6 | 6086.8 | 6373.0 | 6169.5 |
| 25° | 4261.4 | 4242.3 | 4185.1 | 4115.1 | 4083.3 | 4172.4 | 4732.1 | 5342.7 | 6118.6 | 6595.6 | 6341.2 |
| 27.5° | 4598.5 | 4573.1 | 4490.4 | 4325.0 | 4223.2 | 4236.0 | 4681.2 | 5266.3 | 6175.9 | 6811.9 | 6506.6 |
| 30° | 5101.0 | 5088.3 | 4903.8 | 4636.7 | 4426.8 | 4350.5 | 4706.6 | 5247.3 | 6239.5 | 7060.0 | 6672.0 |
| 32.5° | 5552.6 | 5539.8 | 5399.9 | 5101.0 | 4751.2 | 4534.9 | 4770.2 | 5272.7 | 6322.2 | 7378.0 | 6913.7 |
| 35° | 5921.5 | 5896.0 | 5781.5 | 5552.6 | 5196.4 | 4814.8 | 4910.2 | 5361.7 | 6500.2 | 7797.7 | 7206.2 |
| 37.5° | 6296.7 | 6277.6 | 6118.6 | 5876.9 | 5654.3 | 5202.7 | 5145.5 | 5565.3 | 6741.9 | 8370.2 | 7632.4 |
| 40° | 6748.3 | 6722.9 | 6532.0 | 6245.8 | 6048.7 | 5730.6 | 5482.6 | 5889.7 | 7110.8 | 9025.3 | 8115.8 |
| 42.5° | 7180.8 | 7155.4 | 6932.7 | 6684.7 | 6436.6 | 6239.5 | 5959.6 | 6322.2 | 7568.8 | 9858.5 | 8688.2 |
| 45° | 7683.3 | 7683.3 | 7371.6 | 7098.1 | 6837.3 | 6595.6 | 6411.2 | 6818.3 | 8103.0 | 10799.8 | 9324.2 |
| 47.5° | 8153.9 | 8109.4 | 7804.1 | 7505.2 | 7250.8 | 6792.8 | 6843.7 | 7339.8 | 8700.9 | 11753.9 | 10011.1 |
| 50° | 8306.6 | 8293.9 | 8090.3 | 7823.2 | 7606.9 | 7034.5 | 7288.9 | 7963.1 | 9375.1 | 12663.4 | 10659.9 |
| 52.5° | 8484.7 | 8427.4 | 8134.8 | 8096.7 | 7848.6 | 7339.8 | 7835.9 | 8605.5 | 9992.1 | 13490.2 | 11181.4 |
| 55° | 8707.3 | 8643.7 | 8243.0 | 8166.6 | 8033.1 | 7683.3 | 8459.2 | 9267.0 | 10577.2 | 14132.6 | 11671.2 |
| 57.5° | 9114.3 | 9038.0 | 8471.9 | 8306.6 | 8198.4 | 8115.8 | 9165.2 | 9998.4 | 11168.7 | 14635.1 | 12091.0 |
| 60° | 9349.7 | 9286.1 | 8802.7 | 8681.8 | 8522.8 | 8713.6 | 9922.1 | 10672.6 | 11728.4 | 15023.1 | 12415.3 |
| 62.5° | 9228.8 | 9184.3 | 8847.2 | 9076.2 | 9203.4 | 9502.3 | 10787.1 | 11372.2 | 12173.6 | 15315.6 | 12428.1 |
| 65° | 8605.5 | 8516.5 | 8287.5 | 8980.8 | 9985.7 | 10831.6 | 11887.4 | 12192.7 | 12466.2 | 14527.0 | 11677.5 |
| 67.5° | 7110.8 | 7021.8 | 7155.4 | 7867.7 | 9540.5 | 12879.6 | 13401.2 | 12523.5 | 11938.3 | 13808.2 | 11569.4 |
| 70° | 3231.0 | 3084.8 | 3892.5 | 5565.3 | 7893.2 | 12434.4 | 15506.5 | 13897.3 | 12472.6 | 13744.6 | 11353.2 |
| 72.5° | 1583.7 | 1647.3 | 1901.7 | 2499.6 | 4827.5 | 9546.8 | 17096.5 | 17185.6 | 14285.3 | 13910.0 | 11505.8 |
| 74° | 1240.3 | 1259.3 | 1469.2 | 1717.3 | 2696.8 | 7969.5 | 16244.2 | 17942.5 | 15830.8 | 14304.4 | 11270.5 |
| 75° | 1068.5 | 1094.0 | 1303.9 | 1431.1 | 1736.4 | 6710.1 | 15163.0 | 17713.5 | 16536.8 | 14228.0 | 10748.9 |
| 77.5° | 782.3 | 776.0 | 928.6 | 1138.5 | 814.1 | 2989.3 | 12281.8 | 13725.6 | 14100.8 | 11588.5 | 7168.1 |
| 80° | 483.4 | 502.5 | 642.4 | 795.0 | 540.6 | 1138.5 | 7219.0 | 7498.8 | 6672.0 | 6710.1 | 3479.1 |
| 82.5° | 292.6 | 305.3 | 343.5 | 413.4 | 298.9 | 400.7 | 3269.2 | 4077.0 | 3377.3 | 2194.3 | 585.1 |
| 85° | 89.0 | 95.4 | 114.5 | 146.3 | 108.1 | 146.3 | 1100.3 | 992.2 | 706.0 | 292.6 | 171.7 |
| 87.5° | 6.4 | 6.4 | 12.7 | 12.7 | 19.1 | 31.8 | 44.5 | 50.9 | 57.2 | 63.6 | 63.6 |
| 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: P1363464
CATALOG NUMBER: GSS-SB5B-735-U-SL3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 | 5419.0 |
| 2.5° | 5438.1 | 5419.0 | 5393.5 | 5349.0 | 5317.2 | 5285.4 | 5247.3 | 5190.0 | 5170.9 | 5177.3 | 5190.0 |
| 5° | 5482.6 | 5431.7 | 5355.4 | 5253.6 | 5177.3 | 5113.7 | 5011.9 | 4929.2 | 4878.4 | 4878.4 | 4852.9 |
| 7.5° | 5527.1 | 5457.2 | 5336.3 | 5164.6 | 5031.0 | 4852.9 | 4662.1 | 4471.3 | 4337.7 | 4280.5 | 4229.6 |
| 10° | 5603.4 | 5495.3 | 5298.1 | 5069.2 | 4783.0 | 4426.8 | 4038.8 | 3644.5 | 3396.4 | 3269.2 | 3262.8 |
| 12.5° | 5654.3 | 5546.2 | 5279.1 | 4910.2 | 4369.5 | 3695.3 | 3103.8 | 2779.5 | 2677.7 | 2633.2 | 2620.5 |
| 15° | 5737.0 | 5590.7 | 5234.5 | 4617.6 | 3733.5 | 2925.7 | 2601.4 | 2506.0 | 2499.6 | 2506.0 | 2512.3 |
| 17.5° | 5807.0 | 5628.9 | 5120.1 | 4153.3 | 2995.7 | 2544.1 | 2461.4 | 2455.1 | 2499.6 | 2518.7 | 2537.8 |
| 20° | 5883.3 | 5660.7 | 4916.5 | 3504.5 | 2582.3 | 2429.6 | 2416.9 | 2455.1 | 2518.7 | 2569.6 | 2575.9 |
| 22.5° | 5991.4 | 5686.1 | 4560.3 | 2862.1 | 2385.1 | 2366.0 | 2397.8 | 2436.0 | 2474.2 | 2518.7 | 2531.4 |
| 25° | 6105.9 | 5686.1 | 4070.6 | 2423.3 | 2283.4 | 2334.2 | 2366.0 | 2334.2 | 2321.5 | 2359.7 | 2359.7 |
| 27.5° | 6194.9 | 5641.6 | 3377.3 | 2187.9 | 2213.4 | 2296.1 | 2277.0 | 2207.0 | 2194.3 | 2219.8 | 2213.4 |
| 30° | 6258.6 | 5476.2 | 2677.7 | 2060.7 | 2143.4 | 2213.4 | 2162.5 | 2124.3 | 2098.9 | 2105.3 | 2111.6 |
| 32.5° | 6354.0 | 5221.8 | 2194.3 | 1971.7 | 2086.2 | 2079.8 | 2073.5 | 2035.3 | 2003.5 | 2009.9 | 2016.2 |
| 35° | 6468.4 | 4802.0 | 1920.8 | 1908.1 | 2035.3 | 1984.4 | 1990.8 | 1946.3 | 1908.1 | 1908.1 | 1914.5 |
| 37.5° | 6614.7 | 4299.6 | 1806.3 | 1882.7 | 1952.6 | 1946.3 | 1927.2 | 1869.9 | 1812.7 | 1800.0 | 1800.0 |
| 40° | 6773.7 | 3682.6 | 1749.1 | 1869.9 | 1914.5 | 1933.5 | 1895.4 | 1825.4 | 1672.8 | 1577.4 | 1571.0 |
| 42.5° | 6875.5 | 3173.8 | 1730.0 | 1850.9 | 1908.1 | 1927.2 | 1876.3 | 1660.0 | 1513.8 | 1450.2 | 1443.8 |
| 45° | 7021.8 | 2893.9 | 1730.0 | 1800.0 | 1882.7 | 1901.7 | 1723.6 | 1577.4 | 1494.7 | 1462.9 | 1469.2 |
| 47.5° | 7168.1 | 2893.9 | 1730.0 | 1761.8 | 1812.7 | 1838.1 | 1602.8 | 1539.2 | 1462.9 | 1462.9 | 1488.3 |
| 50° | 7371.6 | 3053.0 | 1717.3 | 1704.6 | 1723.6 | 1628.2 | 1526.5 | 1475.6 | 1373.8 | 1335.7 | 1342.0 |
| 52.5° | 7676.9 | 3294.6 | 1666.4 | 1621.9 | 1628.2 | 1507.4 | 1475.6 | 1399.3 | 1297.5 | 1221.2 | 1202.1 |
| 55° | 8007.6 | 3555.4 | 1564.6 | 1526.5 | 1520.1 | 1431.1 | 1418.4 | 1335.7 | 1240.3 | 1138.5 | 1119.4 |
| 57.5° | 8370.2 | 3765.3 | 1437.4 | 1431.1 | 1412.0 | 1354.7 | 1373.8 | 1316.6 | 1183.0 | 1049.5 | 1030.4 |
| 60° | 8713.6 | 4000.6 | 1316.6 | 1329.3 | 1297.5 | 1284.8 | 1310.2 | 1272.1 | 1106.7 | 960.4 | 947.7 |
| 62.5° | 8713.6 | 3994.3 | 1208.5 | 1221.2 | 1214.8 | 1183.0 | 1227.5 | 1202.1 | 1004.9 | 884.1 | 871.4 |
| 65° | 8236.6 | 3816.2 | 1081.3 | 1113.1 | 1138.5 | 1074.9 | 1132.1 | 1087.6 | 915.9 | 820.5 | 801.4 |
| 67.5° | 8173.0 | 3746.2 | 954.0 | 985.8 | 1030.4 | 960.4 | 998.6 | 954.0 | 833.2 | 750.5 | 737.8 |
| 70° | 8045.8 | 3587.2 | 839.6 | 877.7 | 896.8 | 820.5 | 871.4 | 839.6 | 750.5 | 686.9 | 674.2 |
| 72.5° | 8109.4 | 3447.3 | 718.7 | 763.2 | 769.6 | 699.6 | 750.5 | 737.8 | 661.5 | 617.0 | 591.5 |
| 74° | *7753.2* | *2983.0* | *648.8* | *686.9* | *674.2* | *623.3* | *667.8* | *667.8* | *597.9* | *566.1* | *534.3* |
| 75° | 7282.6 | 2645.9 | 597.9 | 636.0 | 604.2 | 572.4 | 617.0 | 623.3 | 553.3 | 553.3 | 502.5 |
| 77.5° | 4783.0 | 1774.5 | 470.7 | 496.1 | 483.4 | 464.3 | 489.7 | 483.4 | 432.5 | 419.8 | 388.0 |
| 80° | 2340.6 | 973.1 | 356.2 | 343.5 | 349.8 | 343.5 | 362.5 | 356.2 | 330.7 | 318.0 | 311.7 |
| 82.5° | 438.9 | 324.4 | 235.3 | 229.0 | 216.3 | 203.5 | 229.0 | 229.0 | 305.3 | 343.5 | 343.5 |
| 85° | 133.6 | 127.2 | 114.5 | 114.5 | 108.1 | 95.4 | 101.8 | 146.3 | 178.1 | 120.8 | 114.5 |
| 87.5° | 57.2 | 57.2 | 50.9 | 44.5 | 31.8 | 31.8 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |
| 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: SP1-2407-184-5

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-735-U-5WQ

Data in this report applies to families of products including GSS-SB1A-735-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

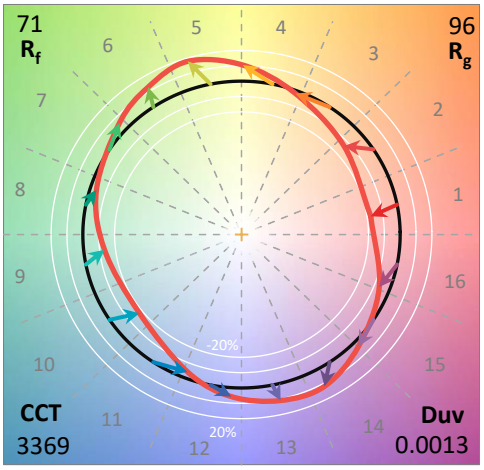
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-5 |
| 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-735-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3500K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3369 |
| CIE u': | 0.2386 |
| CIE v': | 0.5156 |
| Duv: | 0.0013 |
| CIE x: | 0.4143 |
| CIE y: | 0.3980 |
| CIE z: | 0.1877 |
| Peak Wavelength (nm): | 590 |
| Dominant Wavelength (nm): | 580 |
| Purity: | 43.80166 |
| Rf: | 71.4 |
| Rg: | 96 |

| | |
|---|---|
| CRI (Ra): | 70.1 |
| R1: | 66.6 |
| R2: | 77.6 |
| R3: | 88.5 |
| R4: | 69.5 |
| R5: | 66.4 |
| R6: | 69.6 |
| R7: | 77.5 |
| R8: | 44.9 |
| R9: | -40.2 |
| R10: | 49.1 |
| R11: | 66.3 |
| R12: | 45.7 |
| R13: | 68.0 |
| R14: | 93.4 |
| R15: | 57.6 |




## Test Conditions

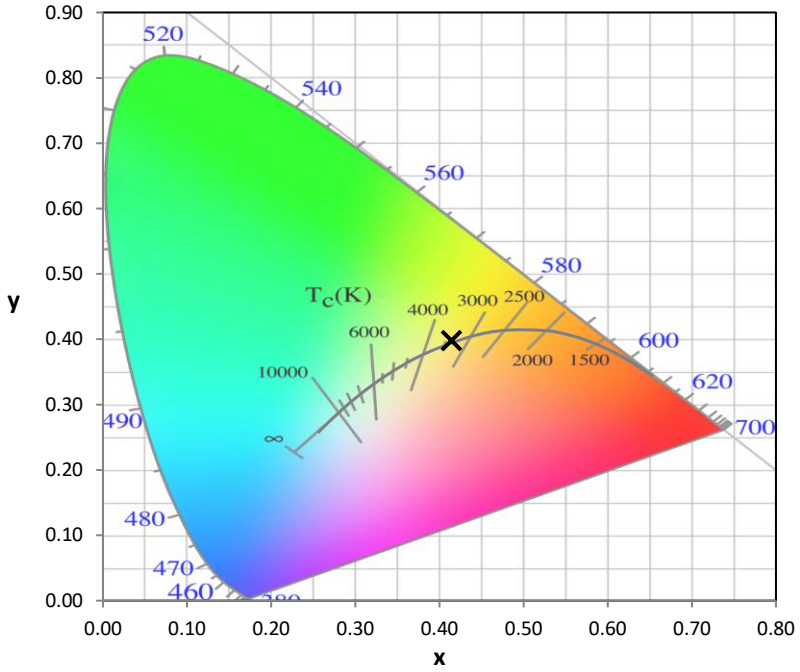
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

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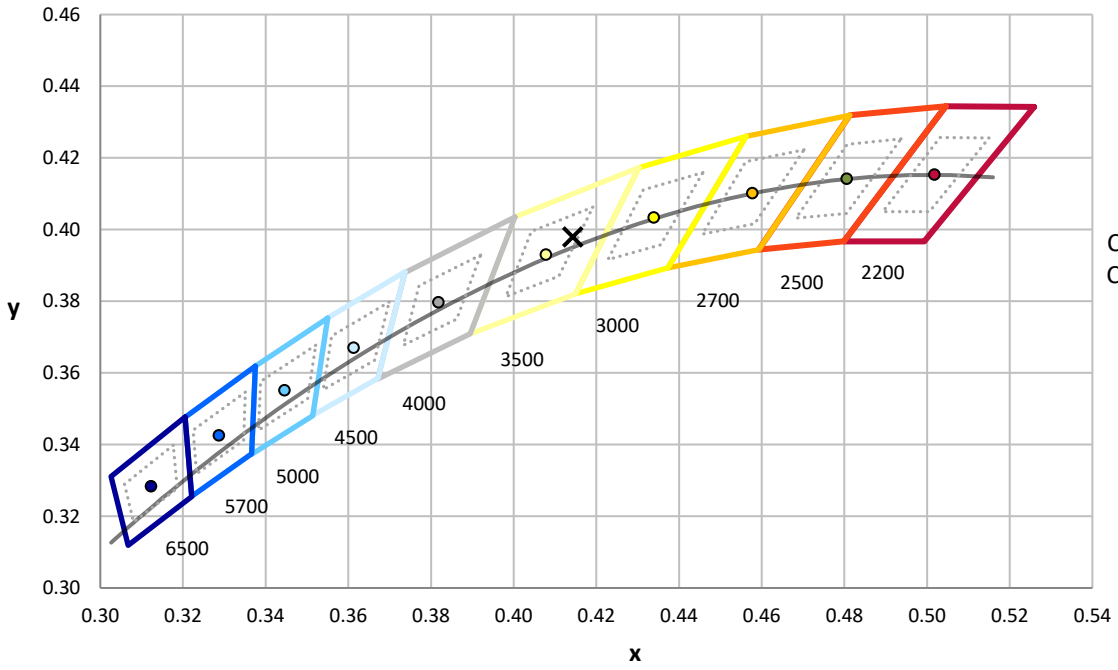
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

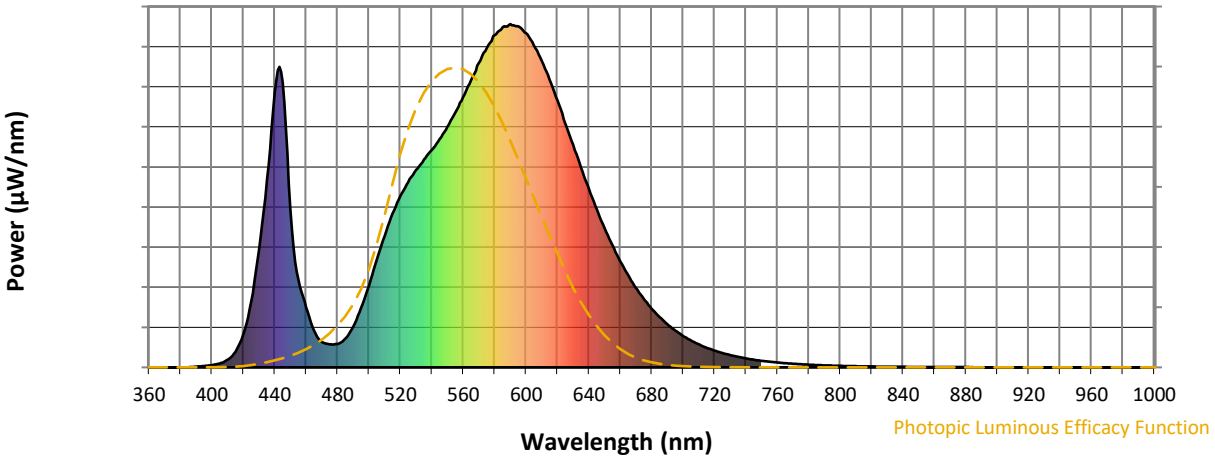



CCT = 3369K
CIE x = 0.4143
CIE y = 0.3980
Duv = 0.0013

Point lies inside the ANSI 3500K 4-step quadrangle

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## Photopic Flux vs. Wavelength

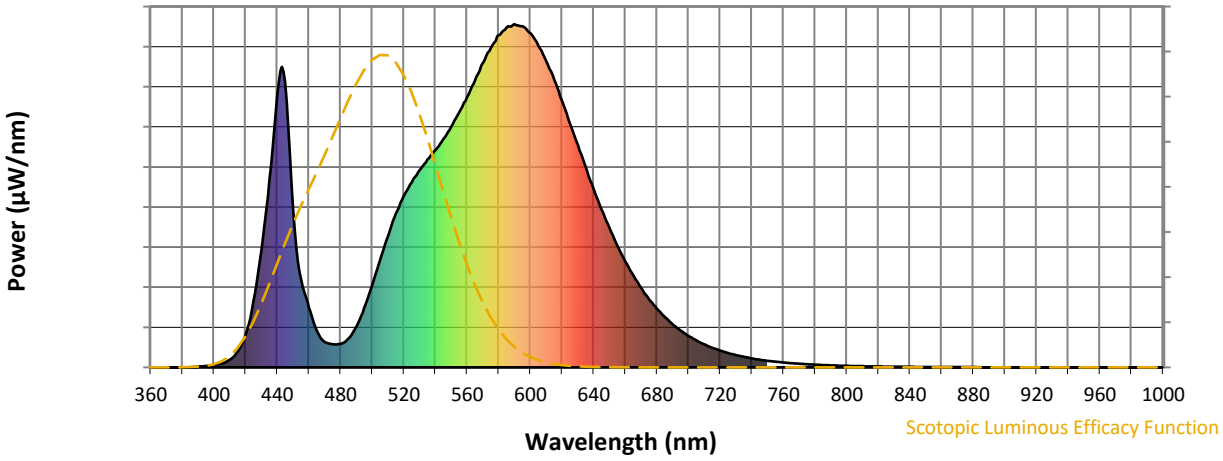



## Photopic Lumens: NR

| 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 | 119 | NR | 620 | 778 | NR | 750 | 19 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 173 | NR | 625 | 711 | NR | 755 | 16 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 239 | NR | 630 | 648 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 313 | NR | 635 | 582 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 383 | NR | 640 | 520 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 448 | NR | 645 | 460 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 500 | NR | 650 | 406 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 539 | NR | 655 | 355 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 575 | NR | 660 | 309 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 606 | NR | 665 | 269 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 633 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 45 | NR | 545 | 666 | NR | 675 | 199 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 96 | NR | 550 | 701 | NR | 680 | 171 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 193 | NR | 555 | 743 | NR | 685 | 147 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 341 | NR | 560 | 788 | NR | 690 | 126 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 547 | NR | 565 | 837 | NR | 695 | 107 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 799 | NR | 570 | 887 | NR | 700 | 92 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 831 | NR | 575 | 931 | NR | 705 | 78 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 461 | NR | 580 | 967 | NR | 710 | 67 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 256 | NR | 585 | 990 | NR | 715 | 57 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 176 | NR | 590 | 1000 | NR | 720 | 49 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 107 | NR | 595 | 994 | NR | 725 | 42 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 74 | NR | 600 | 973 | NR | 730 | 36 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 67 | NR | 605 | 938 | NR | 735 | 31 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 68 | NR | 610 | 892 | NR | 740 | 26 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 84 | NR | 615 | 838 | NR | 745 | 22 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

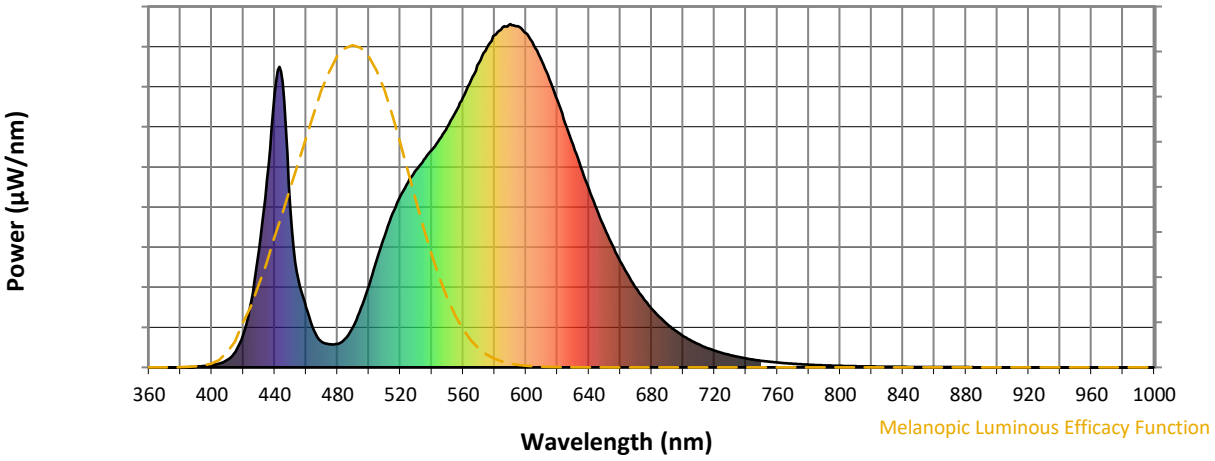



**Scotopic Lumens: NR** **S/P: 1.29**

| 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 | 119 | NR | 620 | 778 | NR | 750 | 19 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 173 | NR | 625 | 711 | NR | 755 | 16 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 239 | NR | 630 | 648 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 313 | NR | 635 | 582 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 383 | NR | 640 | 520 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 448 | NR | 645 | 460 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 500 | NR | 650 | 406 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 539 | NR | 655 | 355 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 575 | NR | 660 | 309 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 606 | NR | 665 | 269 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 633 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 45 | NR | 545 | 666 | NR | 675 | 199 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 96 | NR | 550 | 701 | NR | 680 | 171 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 193 | NR | 555 | 743 | NR | 685 | 147 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 341 | NR | 560 | 788 | NR | 690 | 126 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 547 | NR | 565 | 837 | NR | 695 | 107 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 799 | NR | 570 | 887 | NR | 700 | 92 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 831 | NR | 575 | 931 | NR | 705 | 78 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 461 | NR | 580 | 967 | NR | 710 | 67 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 256 | NR | 585 | 990 | NR | 715 | 57 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 176 | NR | 590 | 1000 | NR | 720 | 49 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 107 | NR | 595 | 994 | NR | 725 | 42 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 74 | NR | 600 | 973 | NR | 730 | 36 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 67 | NR | 605 | 938 | NR | 735 | 31 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 68 | NR | 610 | 892 | NR | 740 | 26 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 84 | NR | 615 | 838 | NR | 745 | 22 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.36**

| 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 | 119 | NR | 620 | 778 | NR | 750 | 19 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 173 | NR | 625 | 711 | NR | 755 | 16 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 239 | NR | 630 | 648 | NR | 760 | 14 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 313 | NR | 635 | 582 | NR | 765 | 12 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 383 | NR | 640 | 520 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 448 | NR | 645 | 460 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 500 | NR | 650 | 406 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 539 | NR | 655 | 355 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 575 | NR | 660 | 309 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 11 | NR | 535 | 606 | NR | 665 | 269 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 22 | NR | 540 | 633 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 45 | NR | 545 | 666 | NR | 675 | 199 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 96 | NR | 550 | 701 | NR | 680 | 171 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 193 | NR | 555 | 743 | NR | 685 | 147 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 341 | NR | 560 | 788 | NR | 690 | 126 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 547 | NR | 565 | 837 | NR | 695 | 107 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 799 | NR | 570 | 887 | NR | 700 | 92 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 831 | NR | 575 | 931 | NR | 705 | 78 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 461 | NR | 580 | 967 | NR | 710 | 67 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 256 | NR | 585 | 990 | NR | 715 | 57 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 176 | NR | 590 | 1000 | NR | 720 | 49 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 107 | NR | 595 | 994 | NR | 725 | 42 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 74 | NR | 600 | 973 | NR | 730 | 36 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 67 | NR | 605 | 938 | NR | 735 | 31 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 68 | NR | 610 | 892 | NR | 740 | 26 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 84 | NR | 615 | 838 | NR | 745 | 22 | NR | 875 | 1 | NR | | | |

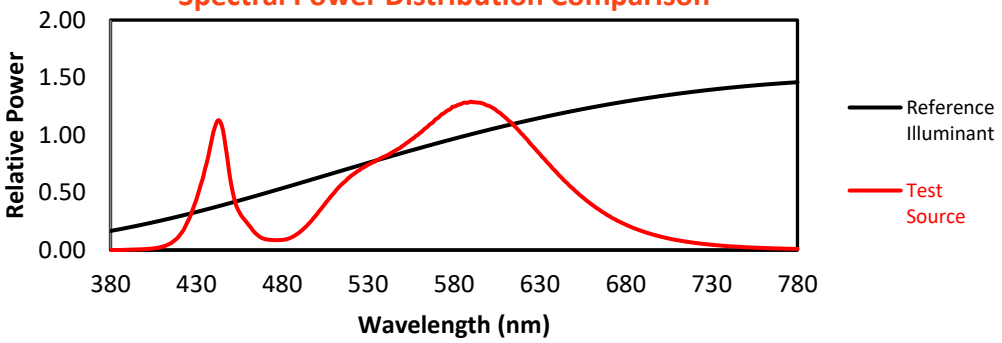
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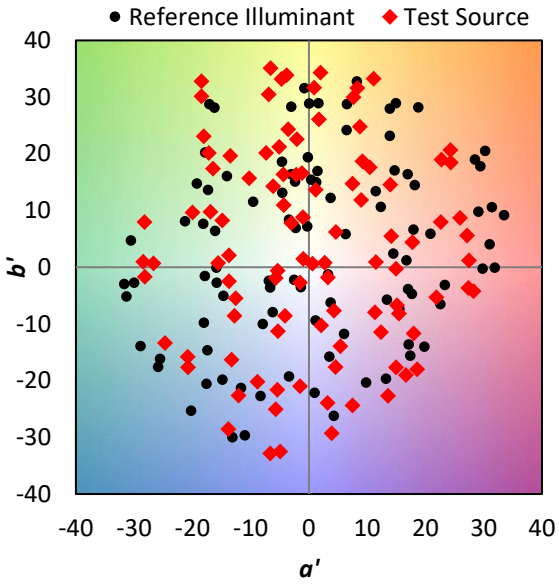
## Summary

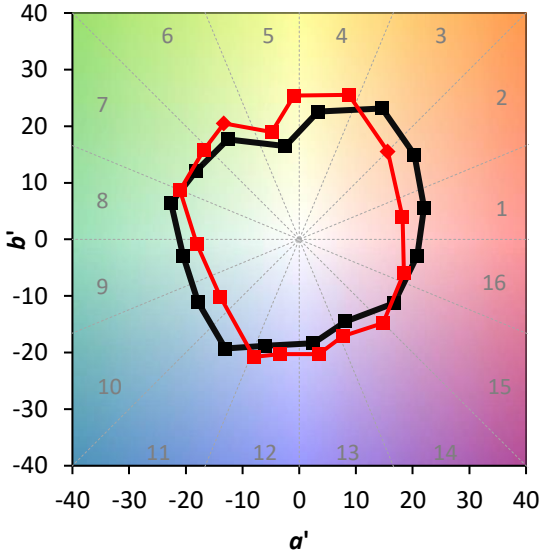
$R_f$ = 71.4
$R_g$ = 96
CIE $R_a$ = 70.1
$R_9$ = -40.2

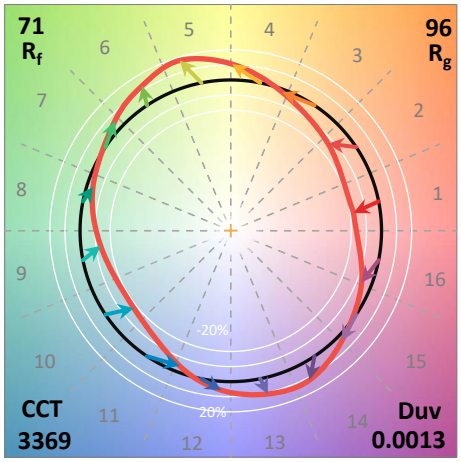
## Spectral Power Distribution Comparison

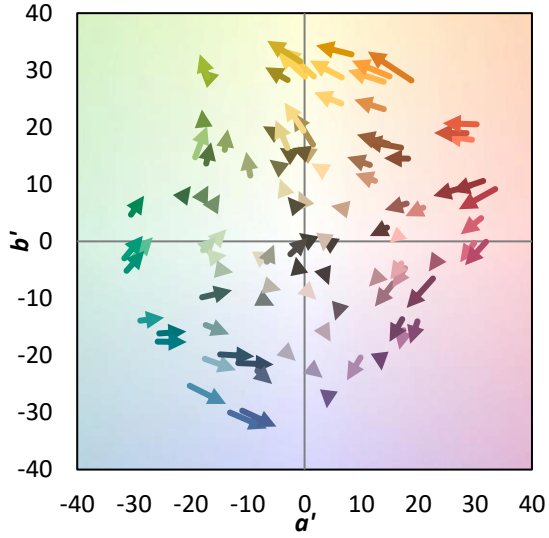



## Color Vector Graphics



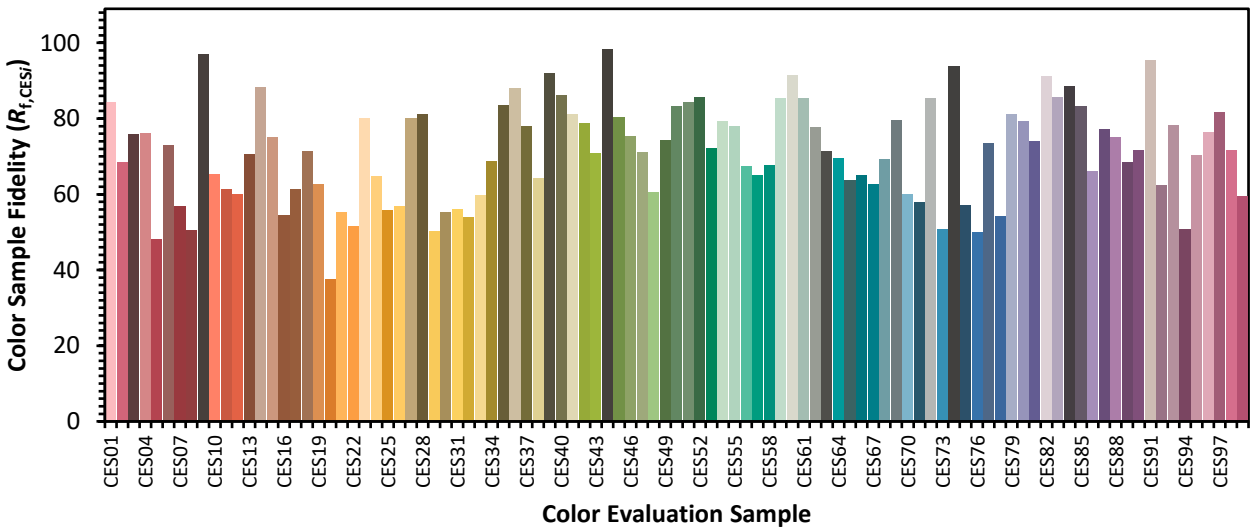



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## Individual Sample Fidelity Index ($R_{f,i}$)

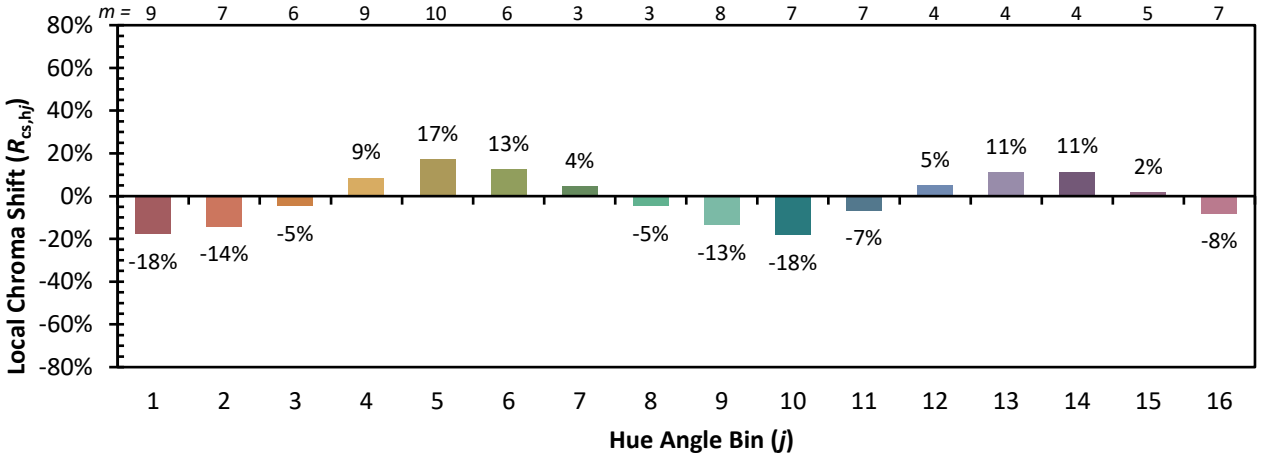
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 57 | CES51 = 84 | CES76 = 50 |
| CES02 = 62 | CES27 = 80 | CES52 = 86 | CES77 = 74 |
| CES03 = 31 | CES28 = 81 | CES53 = 72 | CES78 = 54 |
| CES04 = 70 | CES29 = 50 | CES54 = 79 | CES79 = 81 |
| CES05 = 48 | CES30 = 55 | CES55 = 78 | CES80 = 79 |
| CES06 = 51 | CES31 = 56 | CES56 = 67 | CES81 = 74 |
| CES07 = 40 | CES32 = 54 | CES57 = 65 | CES82 = 91 |
| CES08 = 39 | CES33 = 60 | CES58 = 68 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 85 | CES84 = 89 |
| CES10 = 75 | CES35 = 83 | CES60 = 91 | CES85 = 83 |
| CES11 = 58 | CES36 = 88 | CES61 = 85 | CES86 = 66 |
| CES12 = 64 | CES37 = 78 | CES62 = 78 | CES87 = 77 |
| CES13 = 43 | CES38 = 64 | CES63 = 71 | CES88 = 75 |
| CES14 = 74 | CES39 = 92 | CES64 = 70 | CES89 = 68 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 72 |
| CES16 = 47 | CES41 = 81 | CES66 = 65 | CES91 = 95 |
| CES17 = 50 | CES42 = 79 | CES67 = 63 | CES92 = 62 |
| CES18 = 56 | CES43 = 71 | CES68 = 69 | CES93 = 78 |
| CES19 = 72 | CES44 = 98 | CES69 = 80 | CES94 = 51 |
| CES20 = 65 | CES45 = 80 | CES70 = 60 | CES95 = 70 |
| CES21 = 87 | CES46 = 75 | CES71 = 58 | CES96 = 76 |
| CES22 = 79 | CES47 = 71 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 61 | CES73 = 51 | CES98 = 72 |
| CES24 = 91 | CES49 = 74 | CES74 = 94 | CES99 = 60 |
| CES25 = 72 | CES50 = 83 | CES75 = 57 | |

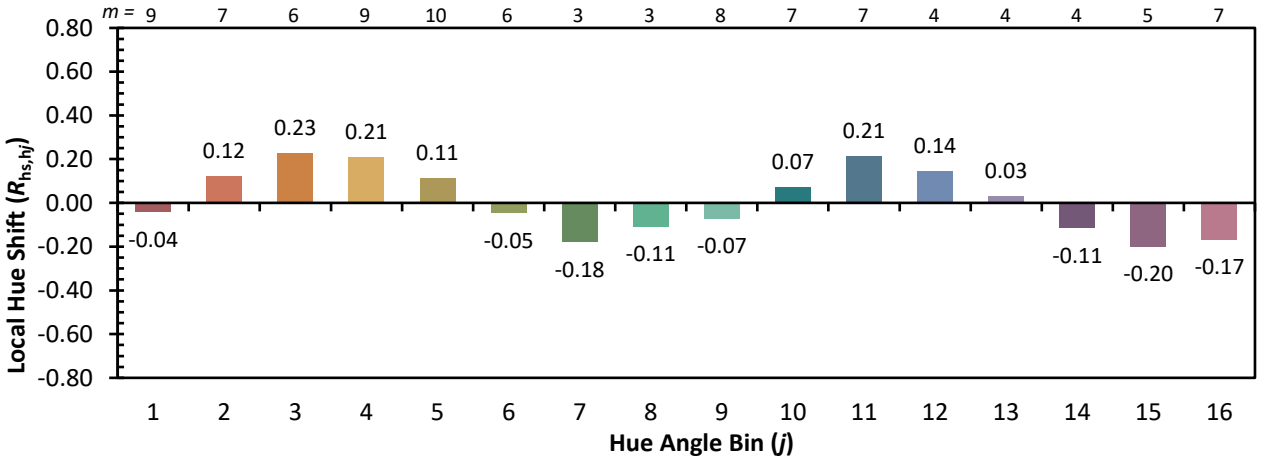


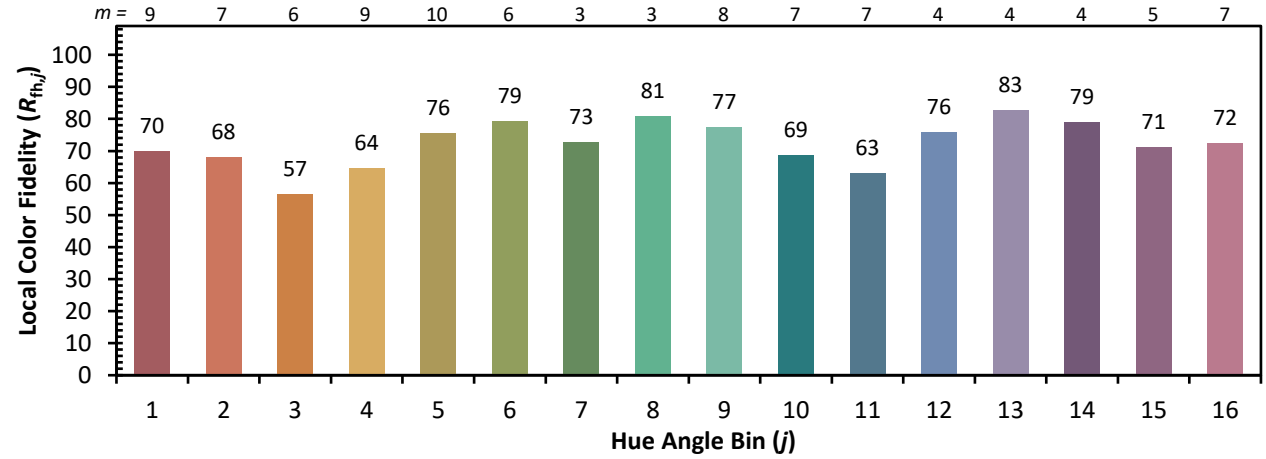
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## Color Rendition by Hue-Angle Bin



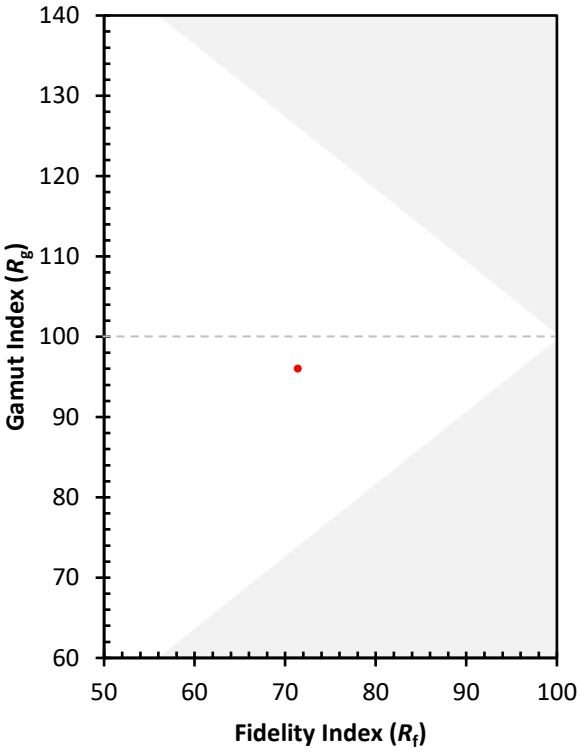



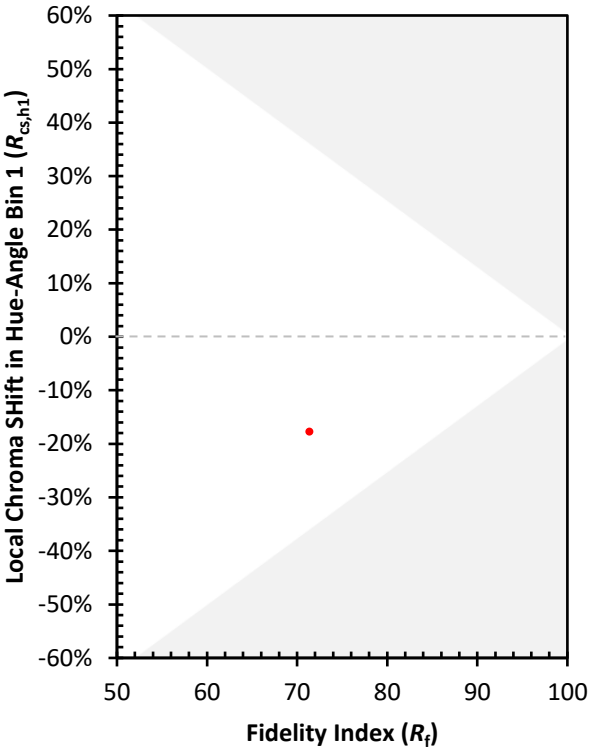



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## Measure Comparisons




(END OF REPORT)