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: McGRAW-EDISON

Report Number: P1502126

Luminaire Tested: GSS-SB3B-722-U-T3LG-HSS

Issue Date: 07/20/2026

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: | P1502126 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB3B-722-U-T3LG-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 3SQUARE 109W 70CRI 2200K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE W/ HOUSE SIDE SHIELD |
| Light Source: | (78) 2200K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 10915 lumens |
| Efficiency: | N/A |
| Efficacy: | 100.1 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B2 - U0 - G2 |

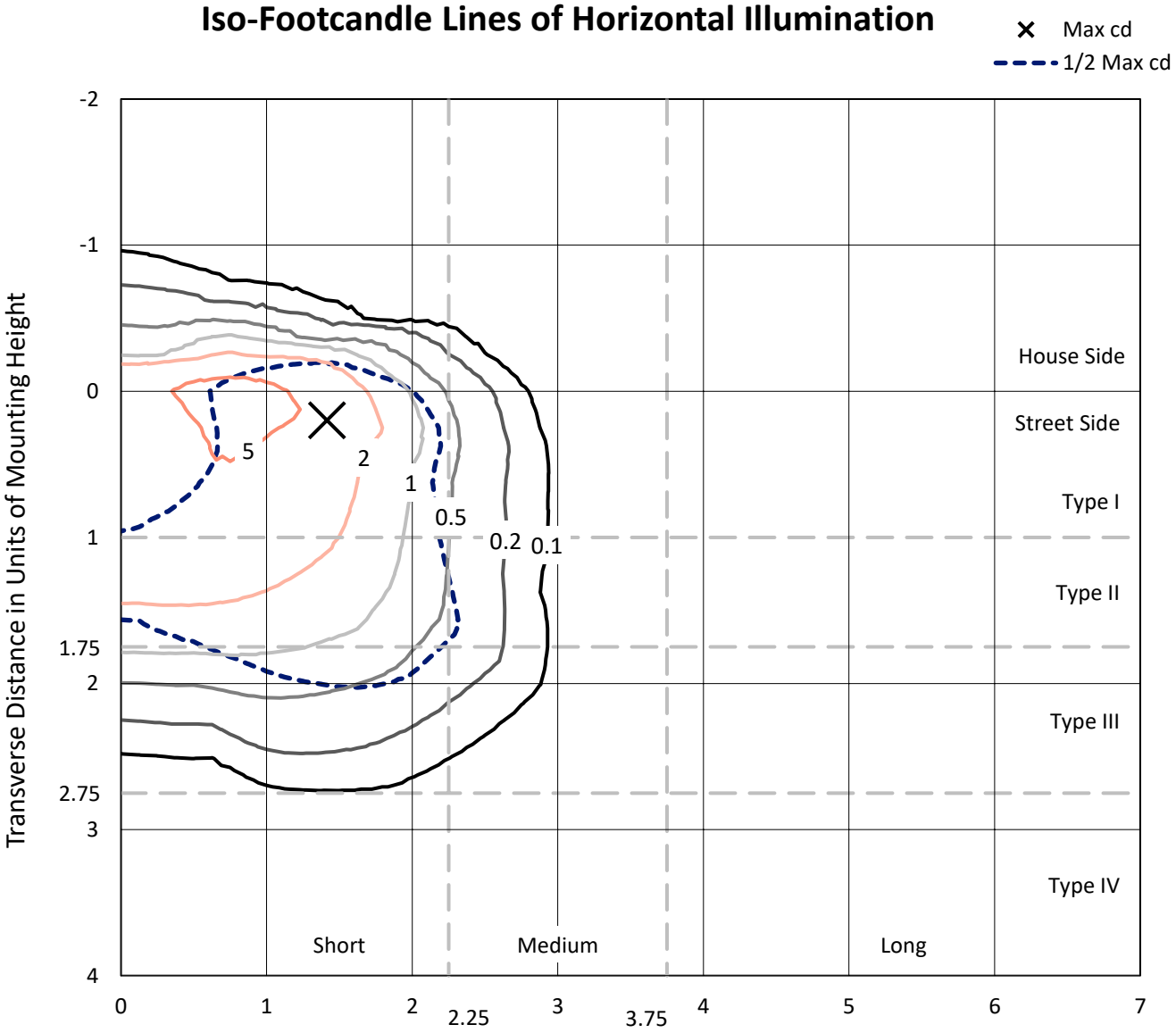
| | |
|---|---|
| Input Watts (W): | 109 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 8.7% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1502126
CATALOG NUMBER: GSS-SB3B-722-U-T3LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination



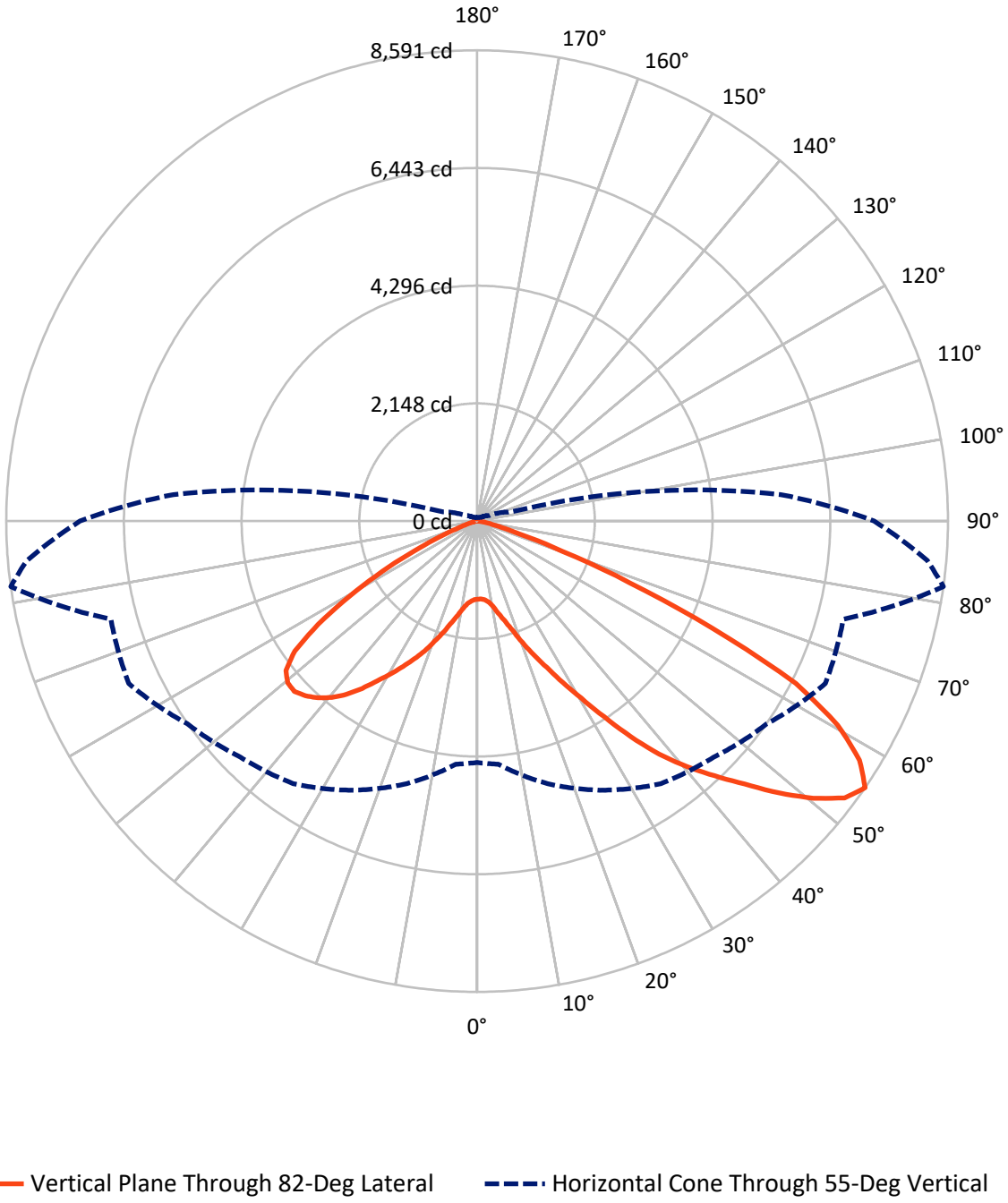

Based on 20 foot mounting height. Maximum calculated value = 6.7 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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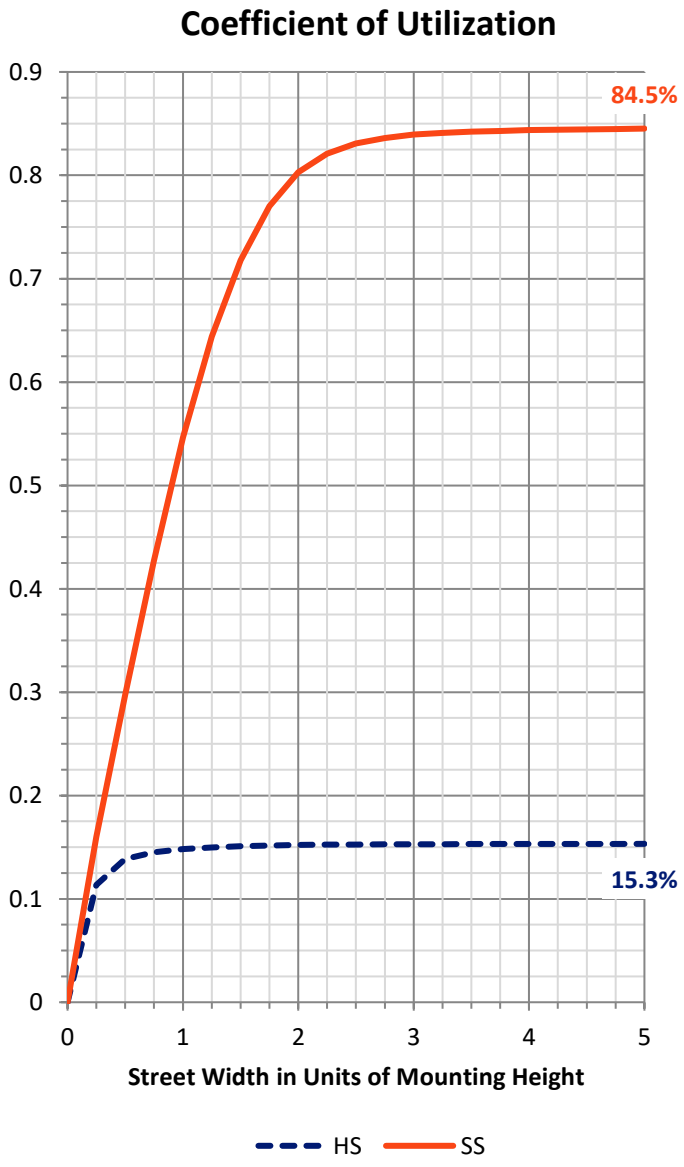
REPORT NUMBER: P1502126
CATALOG NUMBER: GSS-SB3B-722-U-T3LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1687.1 | 0.0 | 1687.1 |
| | % Fixture | 15.5 | 0.0 | 15.5 |
| **Street Side** | Lumens | 9227.9 | 0.0 | 9227.9 |
| | % Fixture | 84.5 | 0.0 | 84.5 |
| **Total** | Lumens | 10915.0 | 0.0 | 10915.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 129.2 | 1.2 |
| 10°-20° | 349.7 | 3.2 |
| 20°-30° | 699.0 | 6.4 |
| 30°-40° | 1447.5 | 13.3 |
| 40°-50° | 2418.1 | 22.2 |
| 50°-60° | 3066.9 | 28.1 |
| 60°-70° | 2292.8 | 21.0 |
| 70°-80° | 485.6 | 4.4 |
| 80°-90° | 26.2 | 0.2 |
| 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° | 10915.0 | 100.0 |
| 0°-180° | 10915.0 | 100.0 |



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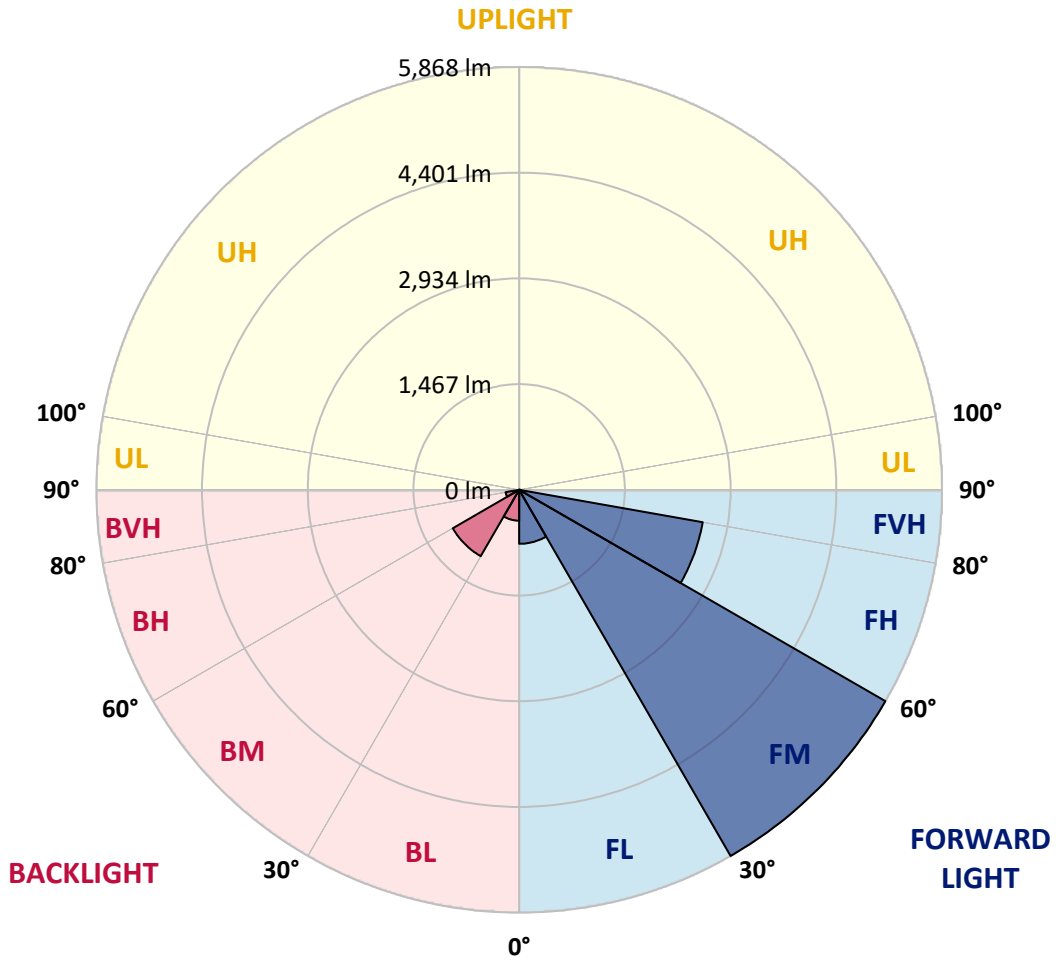
Scaled Data Report

REPORT NUMBER: P1502126
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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°) | 749.6 | 6.9 | | | |
| FM | (30°-60°) | 5868.1 | 53.8 | | | |
| FH | (60°-80°) | 2586.8 | 23.7 | | | G2/5000 |
| FVH | (80°-90°) | 23.4 | 0.2 | | | G1/100 |
| BL | (0°-30°) | 428.3 | 3.9 | B1/500 | | |
| BM | (30°-60°) | 1064.5 | 9.8 | B2/2500 | | |
| BH | (60°-80°) | 191.6 | 1.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 2.8 | 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-G2**
Type III Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 82° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | *1425.0* | 1425.0 |
| 2.5° | 1386.4 | 1389.4 | 1383.5 | 1386.4 | 1392.4 | 1389.4 | 1401.3 | 1410.1 | 1419.0 | *1422.0* | 1425.0 |
| 5° | 1265.0 | 1267.9 | 1270.9 | 1294.6 | 1309.4 | 1345.0 | 1377.6 | 1398.3 | 1427.9 | *1442.7* | 1445.7 |
| 7.5° | 1119.8 | 1119.8 | 1131.7 | 1161.3 | 1199.8 | 1267.9 | 1342.0 | 1401.3 | 1457.5 | *1487.2* | 1493.1 |
| 10° | 1093.2 | 1096.1 | 1096.1 | 1116.9 | 1149.4 | 1217.6 | 1312.4 | 1430.9 | 1531.6 | *1576.0* | 1590.9 |
| 12.5° | 1099.1 | 1102.0 | 1105.0 | 1125.7 | 1158.3 | 1217.6 | 1339.0 | 1493.1 | 1650.1 | *1724.2* | 1733.1 |
| 15° | 1113.9 | 1119.8 | 1128.7 | 1155.4 | 1190.9 | 1267.9 | 1395.3 | 1582.0 | 1792.3 | *1887.1* | 1910.8 |
| 17.5° | 1158.3 | 1161.3 | 1176.1 | 1205.7 | 1262.0 | 1339.0 | 1478.3 | 1697.5 | 1990.8 | *2094.5* | 2138.9 |
| 20° | 1226.5 | 1232.4 | 1253.1 | 1294.6 | 1359.8 | 1457.5 | 1611.6 | 1848.6 | 2204.1 | *2364.1* | 2399.6 |
| 22.5° | 1312.4 | 1312.4 | 1342.0 | 1407.2 | 1499.0 | 1608.6 | 1795.3 | 2050.0 | 2464.8 | *2651.4* | 2710.7 |
| 25° | 1454.6 | 1451.6 | 1475.3 | 1549.4 | 1659.0 | 1819.0 | 2008.6 | 2290.0 | 2737.3 | *2959.5* | 3021.7 |
| 27.5° | 1780.5 | 1771.6 | 1762.7 | 1765.6 | 1860.4 | 2064.8 | 2284.1 | 2592.2 | 3075.1 | *3335.8* | 3383.2 |
| 30° | 2159.6 | 2171.5 | 2159.6 | 2130.0 | 2144.8 | 2334.4 | 2607.0 | 2962.5 | 3454.3 | *3747.5* | 3809.7 |
| 32.5° | 2491.4 | 2497.4 | 2547.7 | 2580.3 | 2592.2 | 2681.0 | 2980.3 | 3409.8 | 3937.1 | *4257.1* | 4337.1 |
| 35° | 2852.9 | 2861.8 | 2918.0 | 2986.2 | 3092.8 | 3172.8 | 3448.3 | 3928.2 | 4428.9 | *4831.8* | 4891.1 |
| 37.5° | 3273.5 | 3288.4 | 3362.4 | 3460.2 | 3608.3 | 3792.0 | 3940.1 | 4399.3 | 4929.6 | *5394.7* | 5456.9 |
| 40° | 3643.9 | 3691.3 | 3818.6 | 3943.1 | 4100.1 | 4307.4 | 4405.2 | 4811.1 | 5299.9 | *5892.4* | 5996.1 |
| 42.5° | 3993.4 | 4020.1 | 4224.5 | 4417.1 | 4603.7 | 4772.6 | 4867.4 | 5134.0 | 5628.7 | *6354.5* | 6470.1 |
| 45° | 4283.7 | 4304.5 | 4532.6 | 4787.4 | 5018.4 | 5187.3 | 5202.1 | 5448.0 | 5954.6 | *6843.3* | 6932.2 |
| 47.5° | 4461.5 | 4494.1 | 4787.4 | 5077.7 | 5332.5 | 5489.5 | 5465.8 | 5847.9 | 6310.1 | *7412.1* | 7424.0 |
| 50° | 4568.1 | 4588.9 | 4888.1 | 5264.3 | 5578.4 | 5688.0 | 5738.3 | 6230.1 | 6633.0 | *7951.3* | 7880.2 |
| 52.5° | 4645.2 | 4677.8 | 4971.0 | 5371.0 | 5723.5 | 5871.6 | 6052.3 | 6659.7 | 6887.8 | *8392.7* | 8203.1 |
| 55° | *4405.2* | *4452.6* | *4959.2* | *5418.4* | *5847.9* | *6096.8* | *6452.3* | *7012.2* | *6917.4* | *8591.2* | *8244.6* |
| 57.5° | 4135.6 | 4144.5 | 4645.2 | 5403.6 | 5987.2 | 6333.8 | 6819.6 | 7038.9 | 6641.9 | *8229.8* | 7823.9 |
| 60° | 3738.7 | 3792.0 | 4304.5 | 5211.0 | 6010.9 | 6523.4 | 7068.5 | 6715.9 | 6138.3 | *7560.3* | 6950.0 |
| 62.5° | 2624.8 | 2707.7 | 3377.2 | 4704.4 | 5842.0 | 6627.1 | 7027.0 | 6153.1 | 5507.3 | *6526.3* | 5842.0 |
| 65° | 1469.4 | 1540.5 | 2088.5 | 3794.9 | 5376.9 | 6603.4 | 6600.4 | 5400.6 | 4494.1 | *4716.3* | 4177.1 |
| 67.5° | 805.8 | 862.1 | 1084.3 | 2855.8 | 4266.0 | 6096.8 | 5702.8 | 4120.8 | 3012.8 | *2995.1* | 2607.0 |
| 70° | 562.9 | 565.8 | 684.3 | 1928.6 | 3066.2 | 4254.1 | 4458.5 | 2764.0 | 1869.3 | *1653.1* | 1395.3 |
| 72.5° | 275.5 | 278.5 | 340.7 | 909.5 | 1875.3 | 2358.1 | 3057.3 | 1436.8 | 1048.7 | *820.6* | 699.1 |
| 75° | 139.2 | 136.3 | 186.6 | 340.7 | 776.2 | 1149.4 | 1347.9 | 719.9 | 610.3 | *450.3* | 399.9 |
| 77.5° | 88.9 | 91.8 | 109.6 | 186.6 | 349.6 | 447.3 | 414.7 | 391.0 | 358.5 | *263.7* | 228.1 |
| 80° | 59.2 | 59.2 | 74.1 | 118.5 | 171.8 | 213.3 | 127.4 | 180.7 | 210.3 | *154.0* | 133.3 |
| 82.5° | 17.8 | 17.8 | 44.4 | 65.2 | 82.9 | 85.9 | 56.3 | 82.9 | 118.5 | *85.9* | 65.2 |
| 85° | 11.8 | 11.8 | 23.7 | 32.6 | 35.5 | 29.6 | 17.8 | 35.5 | 56.3 | *38.5* | 32.6 |
| 87.5° | 0.0 | 0.0 | 0.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | *3.0* | 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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Scaled Data Report

REPORT NUMBER: P1502126
CATALOG NUMBER: GSS-SB3B-722-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 | 1425.0 |
| 2.5° | 1427.9 | 1430.9 | 1439.8 | 1442.7 | 1448.7 | 1451.6 | 1451.6 | 1451.6 | 1448.7 | 1451.6 | 1457.5 |
| 5° | 1451.6 | 1466.4 | 1478.3 | 1475.3 | 1475.3 | 1460.5 | 1448.7 | 1425.0 | 1413.1 | 1410.1 | 1413.1 |
| 7.5° | 1510.9 | 1522.7 | 1534.6 | 1516.8 | 1472.4 | 1404.2 | 1330.2 | 1270.9 | 1220.5 | 1196.8 | 1205.7 |
| 10° | 1617.5 | 1632.3 | 1632.3 | 1549.4 | 1425.0 | 1265.0 | 1131.7 | 1022.1 | 939.1 | 894.7 | 915.4 |
| 12.5° | 1771.6 | 1783.4 | 1753.8 | 1579.0 | 1342.0 | 1078.3 | 856.2 | 672.5 | 565.8 | 512.5 | 500.7 |
| 15° | 1949.3 | 1967.1 | 1866.4 | 1573.1 | 1211.7 | 805.8 | 533.2 | 399.9 | 361.4 | 349.6 | 352.5 |
| 17.5° | 2177.4 | 2186.3 | 1990.8 | 1525.7 | 986.5 | 527.3 | 379.2 | 340.7 | 331.8 | 325.9 | 325.9 |
| 20° | 2458.9 | 2432.2 | 2091.5 | 1445.7 | 719.9 | 414.7 | 349.6 | 319.9 | 311.1 | 308.1 | 311.1 |
| 22.5° | 2761.0 | 2719.6 | 2174.5 | 1294.6 | 545.1 | 391.0 | 334.8 | 302.2 | 290.3 | 287.4 | 287.4 |
| 25° | 3078.0 | 2983.2 | 2239.6 | 1072.4 | 509.5 | 385.1 | 317.0 | 275.5 | 263.7 | 257.7 | 257.7 |
| 27.5° | 3439.4 | 3276.5 | 2275.2 | 897.6 | 518.4 | 376.2 | 296.2 | 251.8 | 234.0 | 228.1 | 228.1 |
| 30° | 3839.4 | 3602.4 | 2278.1 | 862.1 | 536.2 | 364.4 | 275.5 | 225.1 | 207.4 | 198.5 | 201.4 |
| 32.5° | 4325.2 | 3934.2 | 2269.3 | 918.4 | 548.1 | 355.5 | 251.8 | 198.5 | 183.7 | 174.8 | 174.8 |
| 35° | 4828.8 | 4337.1 | 2233.7 | 1025.0 | 554.0 | 328.8 | 222.2 | 174.8 | 157.0 | 154.0 | 157.0 |
| 37.5° | 5329.5 | 4719.2 | 2183.3 | 1084.3 | 524.4 | 269.6 | 180.7 | 151.1 | 139.2 | 139.2 | 139.2 |
| 40° | 5785.7 | 5051.0 | 2115.2 | 1033.9 | 417.7 | 195.5 | 148.1 | 130.3 | 124.4 | 121.5 | 124.4 |
| 42.5° | 6126.4 | 5347.3 | 1990.8 | 871.0 | 296.2 | 157.0 | 130.3 | 115.5 | 109.6 | 109.6 | 112.6 |
| 45° | 6499.7 | 5631.7 | 1750.8 | 639.9 | 225.1 | 136.3 | 112.6 | 100.7 | 97.8 | 97.8 | 100.7 |
| 47.5° | 6875.9 | 5859.8 | 1519.8 | 426.6 | 195.5 | 121.5 | 100.7 | 91.8 | 88.9 | 85.9 | 88.9 |
| 50° | 7163.3 | 5969.4 | 1217.6 | 311.1 | 177.7 | 109.6 | 91.8 | 85.9 | 80.0 | 77.0 | 77.0 |
| 52.5° | 7367.7 | 5939.8 | 891.7 | 266.6 | 162.9 | 100.7 | 85.9 | 80.0 | 71.1 | 71.1 | 71.1 |
| 55° | *7243.3* | *5560.6* | *642.9* | *240.0* | *151.1* | *94.8* | *82.9* | *74.1* | *68.1* | *65.2* | *65.2* |
| 57.5° | 6638.9 | 4740.0 | 465.1 | 216.3 | 133.3 | 88.9 | 80.0 | 71.1 | 62.2 | 59.2 | 59.2 |
| 60° | 5770.9 | 3691.3 | 346.6 | 189.6 | 115.5 | 85.9 | 71.1 | 68.1 | 59.2 | 53.3 | 53.3 |
| 62.5° | 4716.3 | 2687.0 | 269.6 | 162.9 | 103.7 | 74.1 | 68.1 | 62.2 | 53.3 | 47.4 | 44.4 |
| 65° | 3273.5 | 1715.3 | 207.4 | 133.3 | 97.8 | 65.2 | 62.2 | 53.3 | 44.4 | 35.5 | 35.5 |
| 67.5° | 2020.4 | 1019.1 | 160.0 | 103.7 | 77.0 | 56.3 | 53.3 | 47.4 | 38.5 | 29.6 | 29.6 |
| 70° | 1116.9 | 539.2 | 109.6 | 77.0 | 59.2 | 44.4 | 41.5 | 41.5 | 32.6 | 26.7 | 23.7 |
| 72.5° | 536.2 | 293.3 | 74.1 | 65.2 | 44.4 | 29.6 | 32.6 | 32.6 | 26.7 | 20.7 | 20.7 |
| 75° | 322.9 | 174.8 | 50.4 | 50.4 | 29.6 | 23.7 | 23.7 | 26.7 | 20.7 | 14.8 | 14.8 |
| 77.5° | 183.7 | 103.7 | 29.6 | 38.5 | 20.7 | 14.8 | 17.8 | 14.8 | 11.8 | 8.9 | 8.9 |
| 80° | 103.7 | 59.2 | 17.8 | 26.7 | 11.8 | 8.9 | 8.9 | 5.9 | 5.9 | 3.0 | 3.0 |
| 82.5° | 50.4 | 32.6 | 8.9 | 8.9 | 5.9 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 0.0 |
| 85° | 23.7 | 5.9 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 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: SP1-2407-184-2

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-722-U-5WQ

Data in this report applies to families of products including GSS-SB1A-722-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

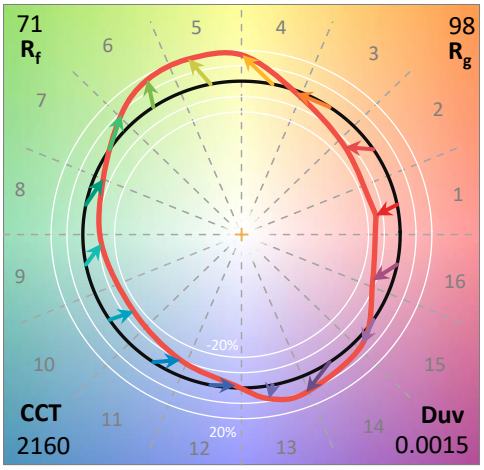
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-2 |
| 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-722-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 2200K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2160 |
| CIE u': | 0.2927 |
| CIE v': | 0.5388 |
| Duv: | 0.0015 |
| CIE x: | 0.5130 |
| CIE y: | 0.4197 |
| CIE z: | 0.0674 |
| Peak Wavelength (nm): | 609 |
| Dominant Wavelength (nm): | 587 |
| Purity: | 79.96089 |
| Rf: | 70.6 |
| Rg: | 97.6 |

| | |
|---|---|
| CRI (Ra): | 71.9 |
| R1: | 68.7 |
| R2: | 82.6 |
| R3: | 95.5 |
| R4: | 66.4 |
| R5: | 65.4 |
| R6: | 75.9 |
| R7: | 77.2 |
| R8: | 43.5 |
| R9: | -17.8 |
| R10: | 60.5 |
| R11: | 60.2 |
| R12: | 48.2 |
| R13: | 70.7 |
| R14: | 96.8 |
| R15: | 61.8 |




## Test Conditions

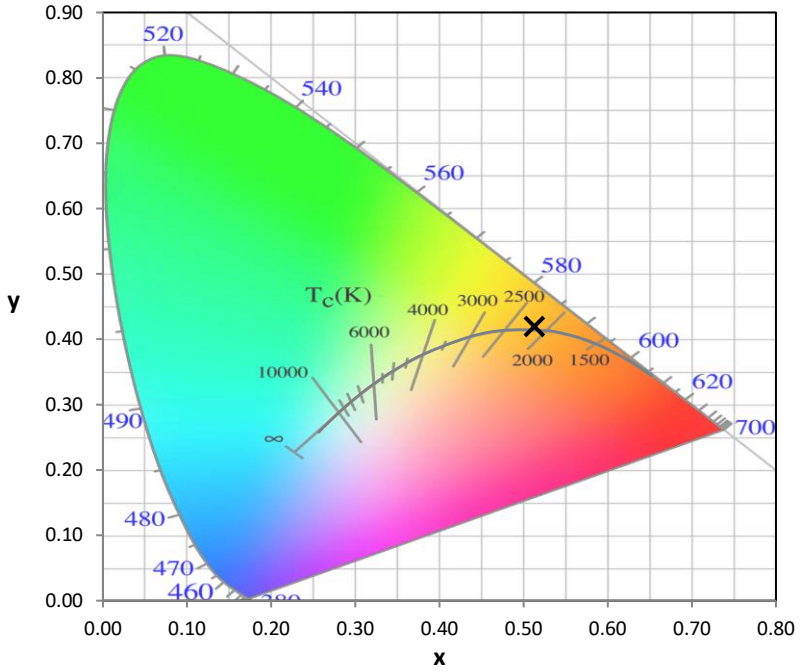
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-2

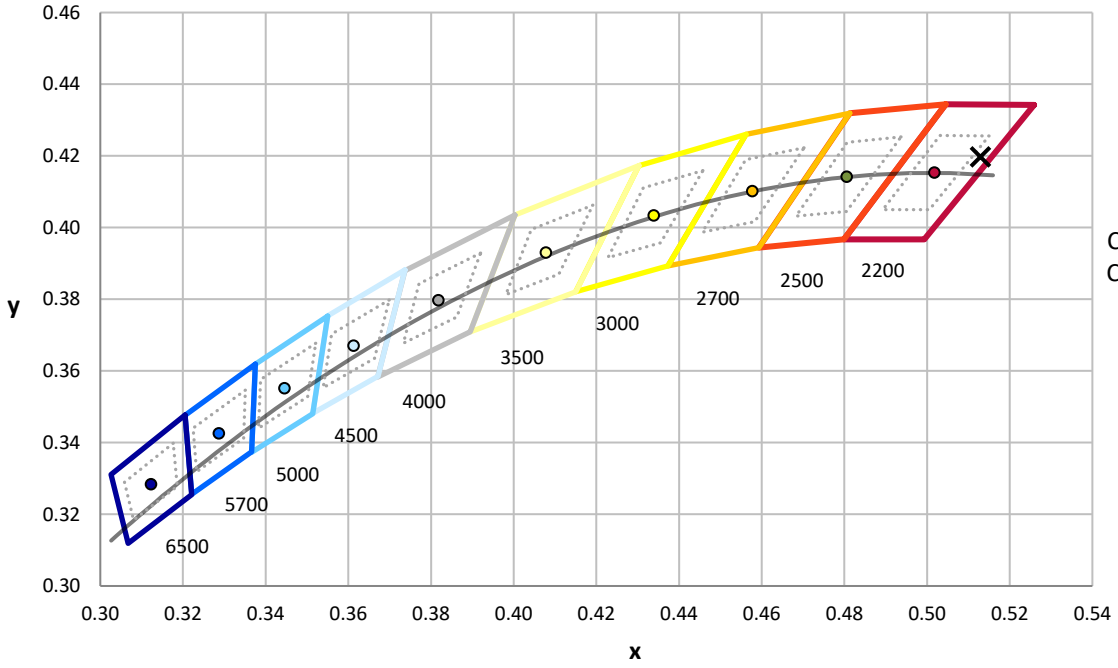
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

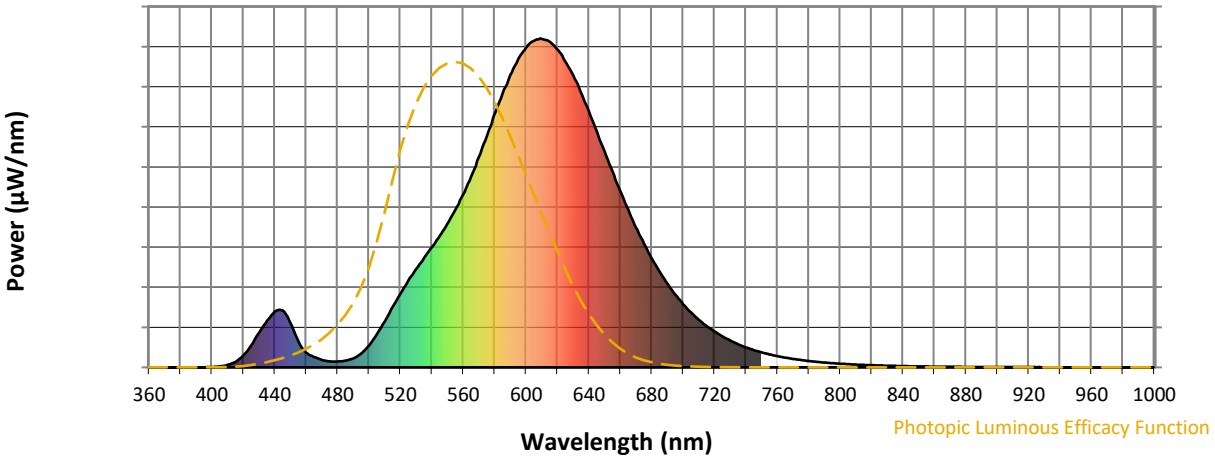



CCT = 2160K
CIE x = 0.5130
CIE y = 0.4197
Duv = 0.0015

Point lies inside the ANSI 2200K 7-step quadrangle

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## Photopic Flux vs. Wavelength

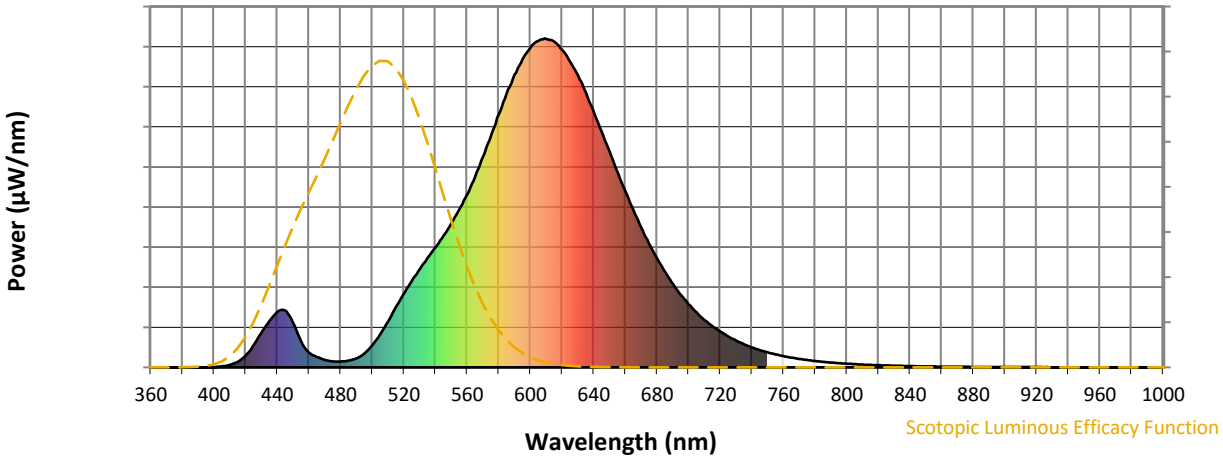



## Photopic Lumens: NR

| 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 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

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## Scotopic Flux vs. Wavelength

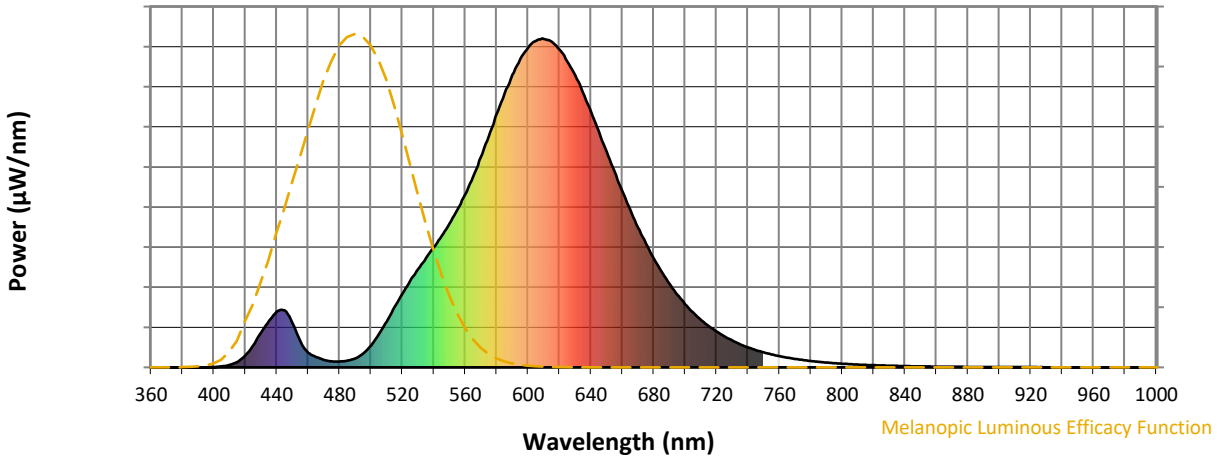



**Scotopic Lumens: NR** **S/P: 0.8**

| 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 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 1.21**

| 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 | 27 | NR | 620 | 966 | NR | 750 | 46 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 42 | NR | 625 | 930 | NR | 755 | 39 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 67 | NR | 630 | 888 | NR | 760 | 34 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 101 | NR | 635 | 835 | NR | 765 | 30 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 139 | NR | 640 | 778 | NR | 770 | 26 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 183 | NR | 645 | 717 | NR | 775 | 22 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 224 | NR | 650 | 656 | NR | 780 | 19 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 595 | NR | 785 | 17 | NR | 915 | 1 | NR |
| 400 | 1 | NR | 530 | 299 | NR | 660 | 536 | NR | 790 | 15 | NR | 920 | 1 | NR |
| 405 | 3 | NR | 535 | 332 | NR | 665 | 480 | NR | 795 | 13 | NR | 925 | 1 | NR |
| 410 | 7 | NR | 540 | 365 | NR | 670 | 425 | NR | 800 | 11 | NR | 930 | 1 | NR |
| 415 | 17 | NR | 545 | 400 | NR | 675 | 376 | NR | 805 | 10 | NR | 935 | 0 | NR |
| 420 | 36 | NR | 550 | 437 | NR | 680 | 332 | NR | 810 | 8 | NR | 940 | 0 | NR |
| 425 | 67 | NR | 555 | 479 | NR | 685 | 291 | NR | 815 | 8 | NR | 945 | 0 | NR |
| 430 | 105 | NR | 560 | 525 | NR | 690 | 255 | NR | 820 | 7 | NR | 950 | 0 | NR |
| 435 | 141 | NR | 565 | 579 | NR | 695 | 221 | NR | 825 | 6 | NR | 955 | 0 | NR |
| 440 | 169 | NR | 570 | 639 | NR | 700 | 192 | NR | 830 | 5 | NR | 960 | 0 | NR |
| 445 | 173 | NR | 575 | 703 | NR | 705 | 167 | NR | 835 | 4 | NR | 965 | 0 | NR |
| 450 | 136 | NR | 580 | 769 | NR | 710 | 144 | NR | 840 | 4 | NR | 970 | 0 | NR |
| 455 | 80 | NR | 585 | 832 | NR | 715 | 125 | NR | 845 | 3 | NR | 975 | 0 | NR |
| 460 | 45 | NR | 590 | 890 | NR | 720 | 109 | NR | 850 | 3 | NR | 980 | 0 | NR |
| 465 | 32 | NR | 595 | 937 | NR | 725 | 94 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 23 | NR | 600 | 972 | NR | 730 | 81 | NR | 860 | 2 | NR | 990 | 0 | NR |
| 475 | 18 | NR | 605 | 992 | NR | 735 | 70 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 18 | NR | 610 | 998 | NR | 740 | 61 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 20 | NR | 615 | 990 | NR | 745 | 53 | NR | 875 | 2 | NR | | | |

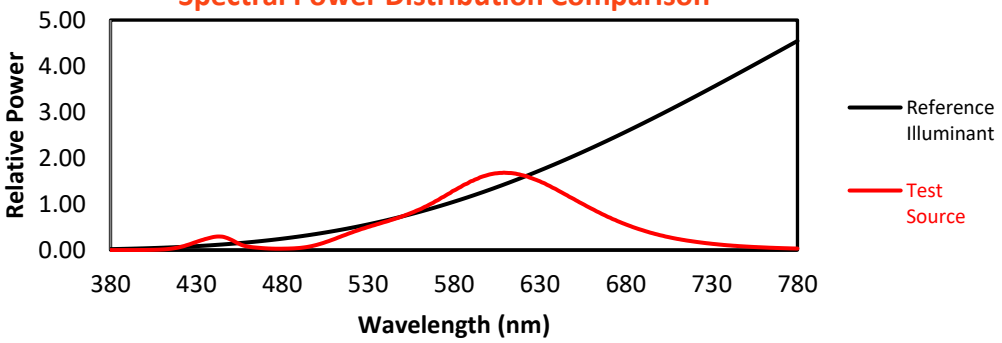
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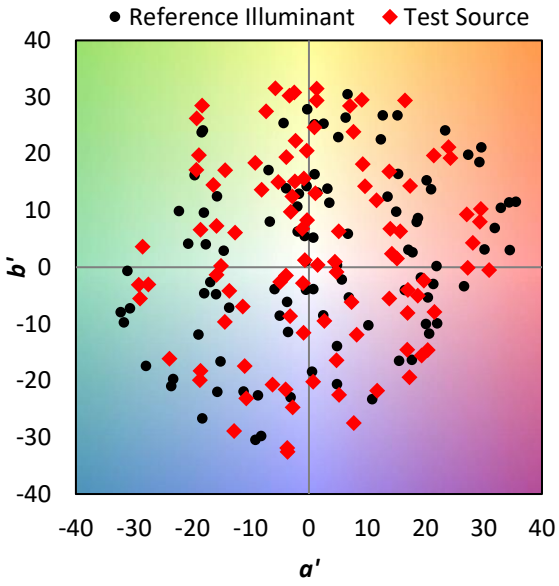
## Summary

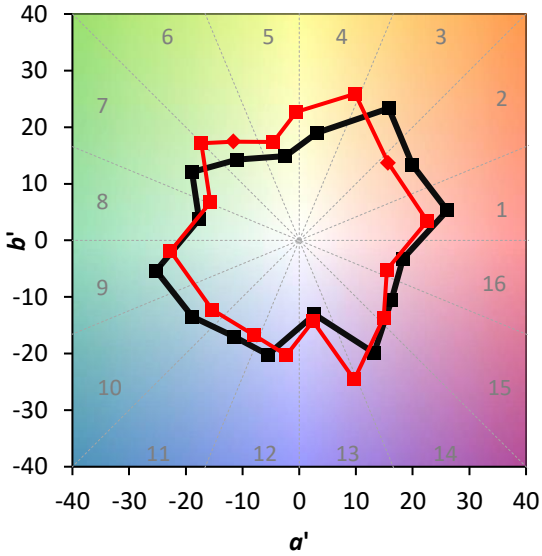
$R_f$ = 70.6
$R_g$ = 97.6
CIE $R_a$ = 71.9
$R_9$ = -17.8

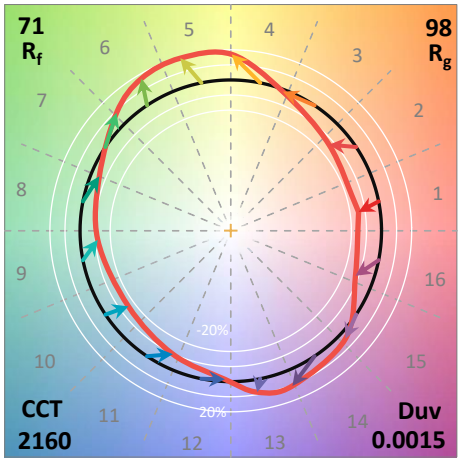
## Spectral Power Distribution Comparison

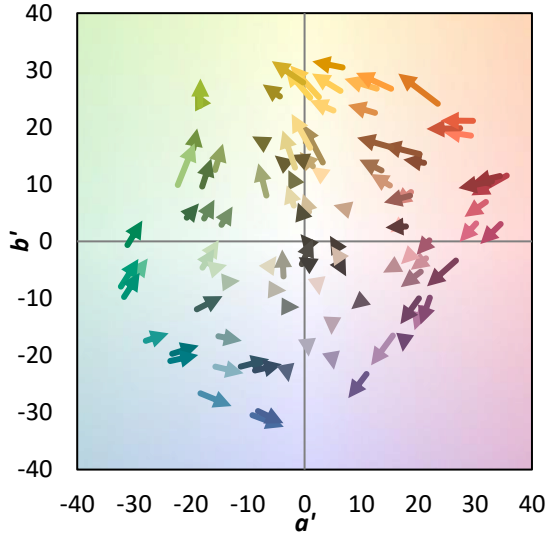



## Color Vector Graphics



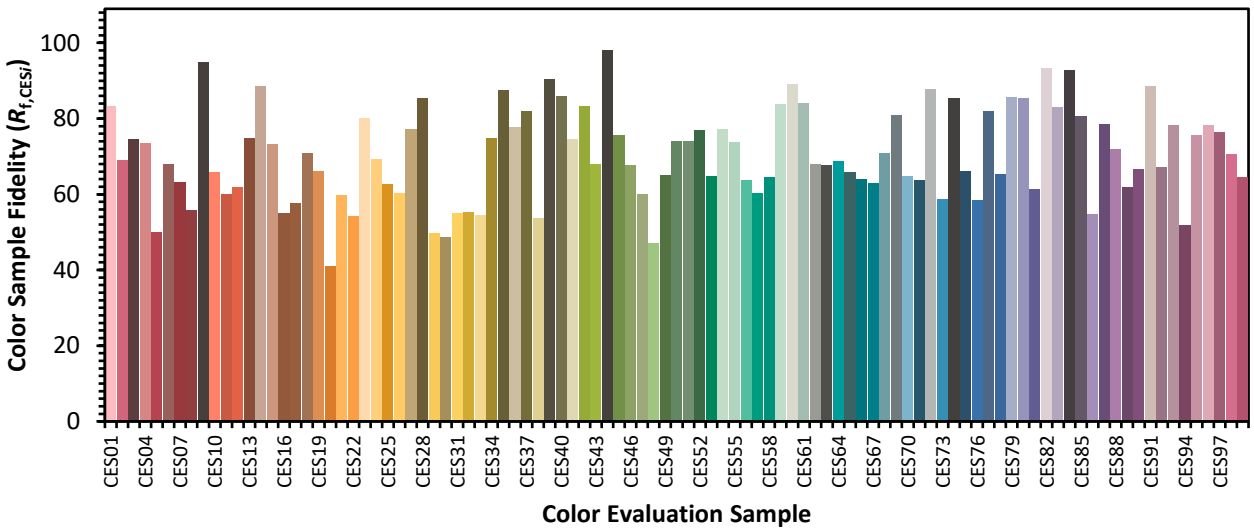



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**Individual Sample Fidelity Index ($R_{f,i}$)**

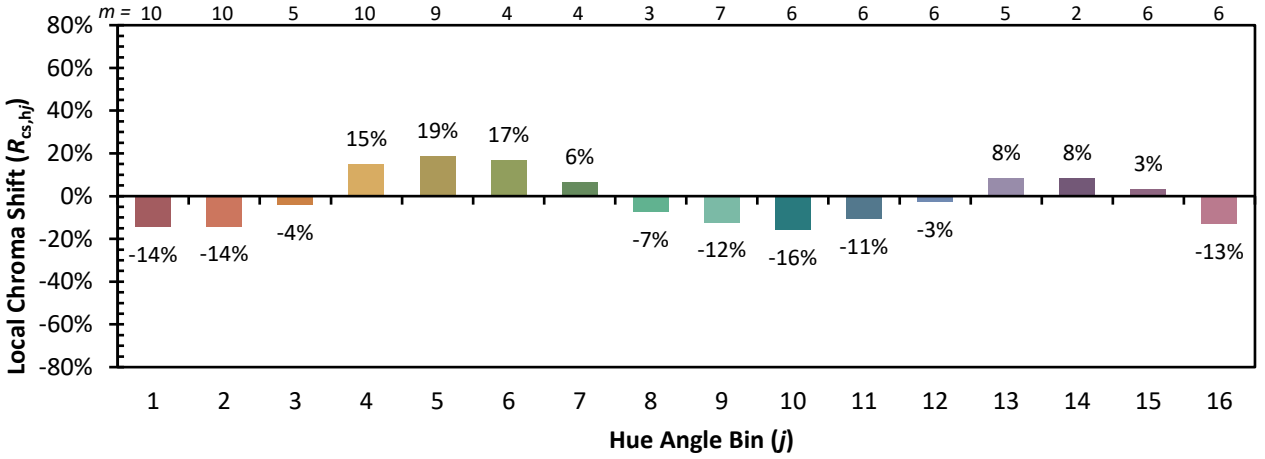
| | | | |
|---|---|---|---|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06 = 53 | CES31 = 55 | CES56 = 64 | CES81 = 61 |
| CES07 = 44 | CES32 = 55 | CES57 = 60 | CES82 = 93 |
| CES08 = 43 | CES33 = 55 | CES58 = 64 | CES83 = 83 |
| CES09 = 29 | CES34 = 75 | CES59 = 84 | CES84 = 93 |
| CES10 = 79 | CES35 = 88 | CES60 = 89 | CES85 = 81 |
| CES11 = 62 | CES36 = 78 | CES61 = 84 | CES86 = 55 |
| CES12 = 68 | CES37 = 82 | CES62 = 68 | CES87 = 79 |
| CES13 = 45 | CES38 = 54 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 86 | CES65 = 66 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 89 |
| CES17 = 51 | CES42 = 83 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 68 | CES68 = 71 | CES93 = 78 |
| CES19 = 74 | CES44 = 98 | CES69 = 81 | CES94 = 52 |
| CES20 = 68 | CES45 = 76 | CES70 = 65 | CES95 = 76 |
| CES21 = 89 | CES46 = 68 | CES71 = 64 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 88 | CES97 = 76 |
| CES23 = 92 | CES48 = 47 | CES73 = 59 | CES98 = 71 |
| CES24 = 92 | CES49 = 65 | CES74 = 85 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |

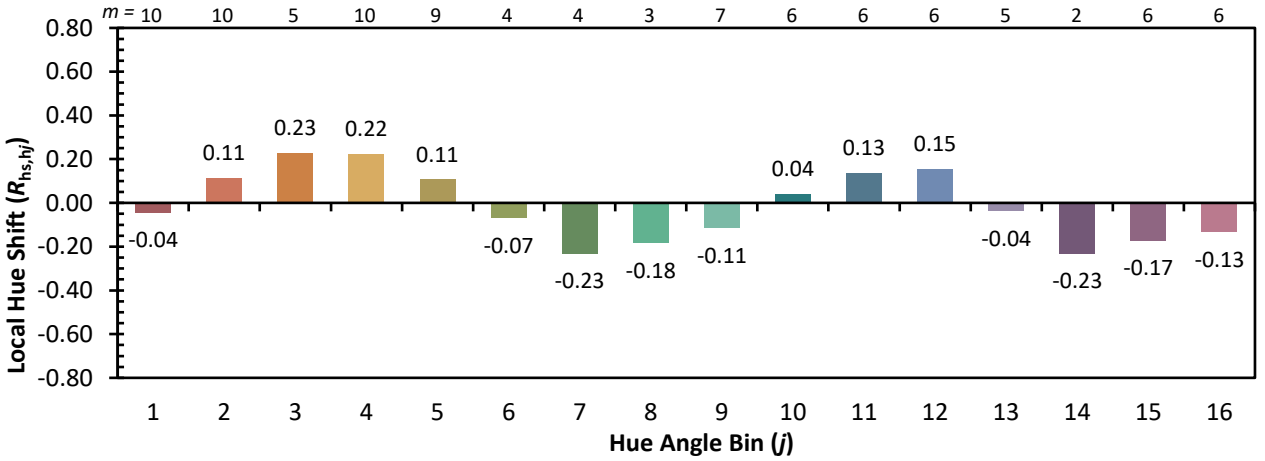


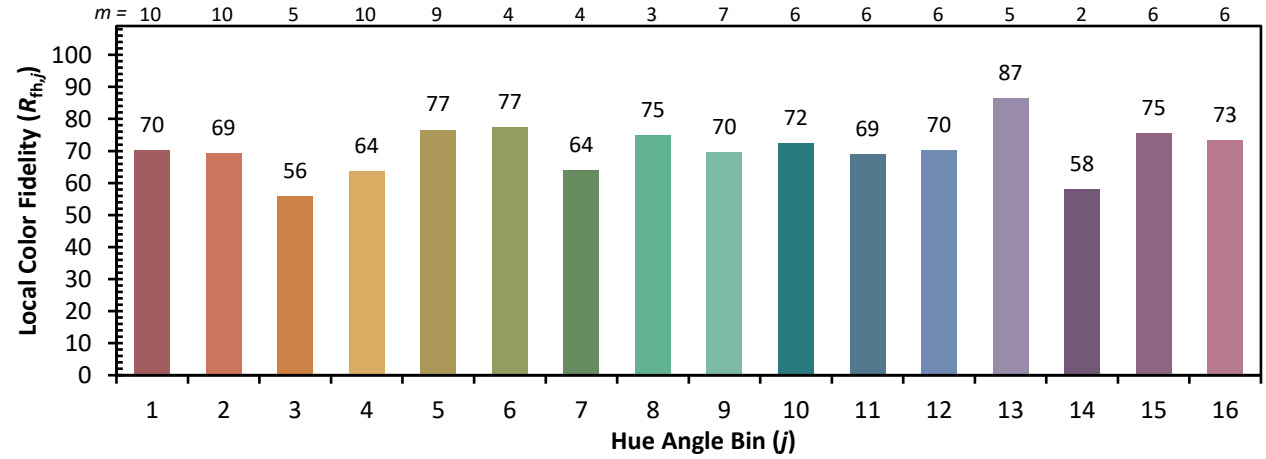
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## Color Rendition by Hue-Angle Bin



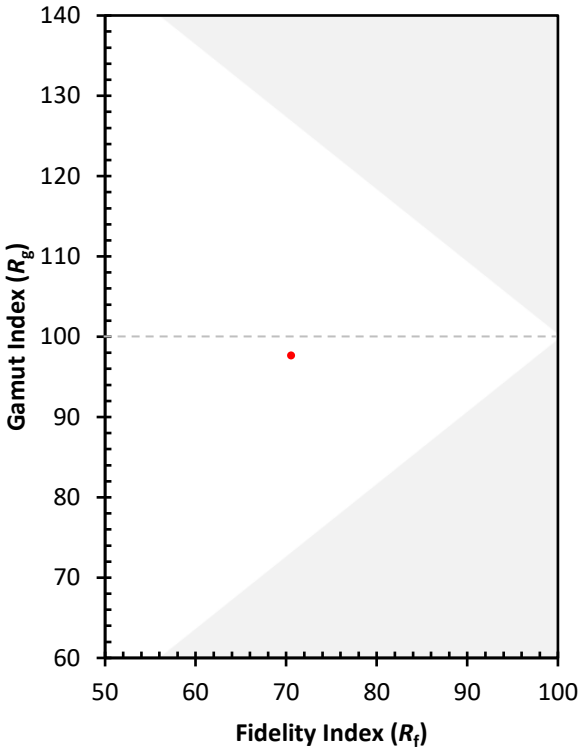



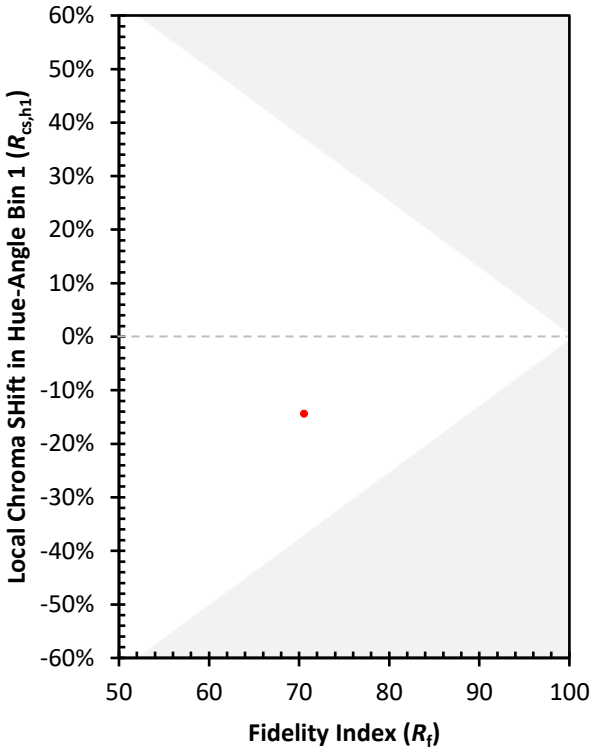



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## Measure Comparisons




(END OF REPORT)