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: P1502314

Luminaire Tested: GSS-SB2B-835-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: | P1502314 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB2B-835-U-T3LG-HSS |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 2SQUARE 74W 80CRI 3500K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE W/ HOUSE SIDE SHIELD |
| Light Source: | (52) 3500K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 8136.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 110.0 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G2 |

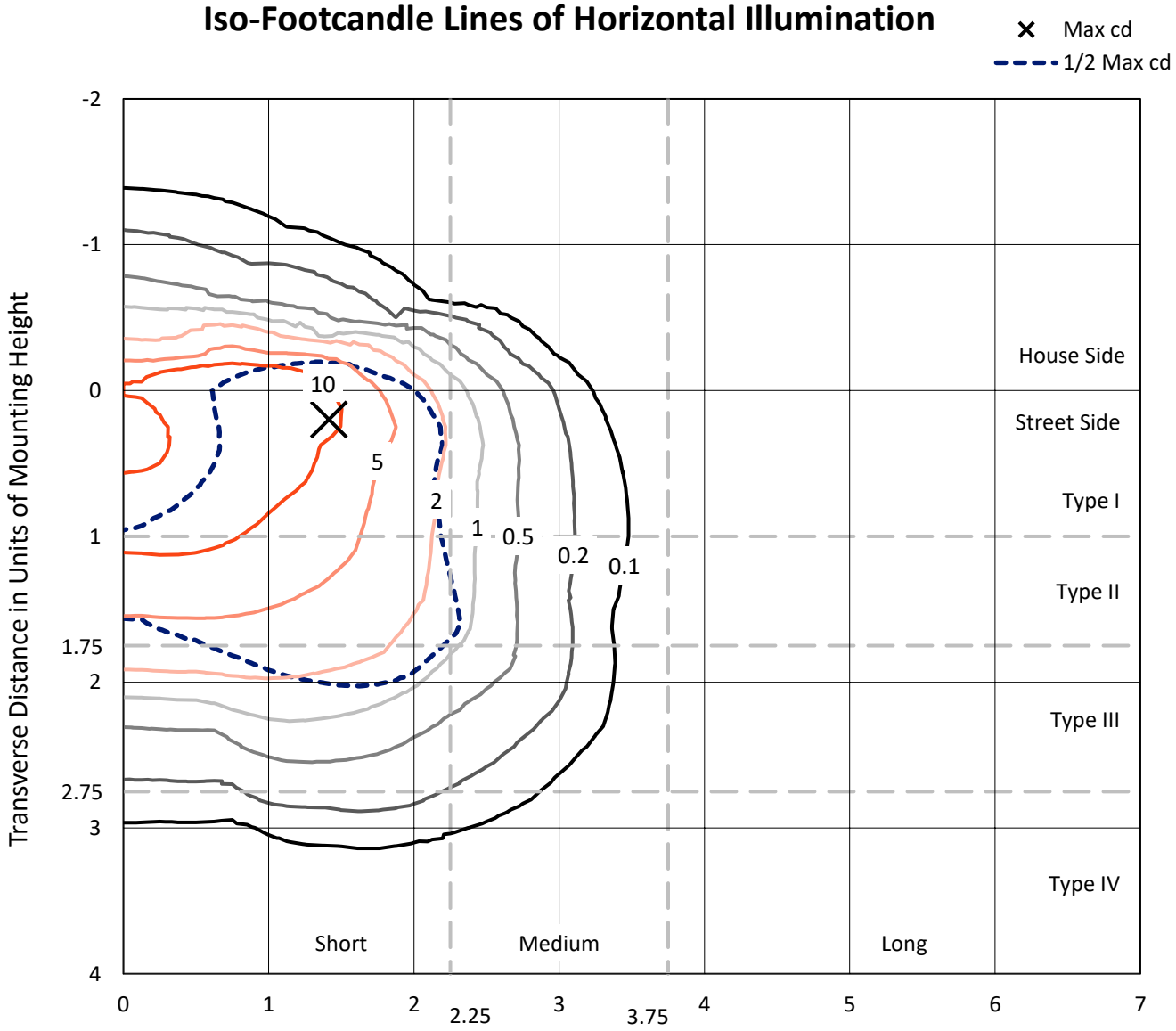
| | |
|---|---|
| Input Watts (W): | 74 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 13.6% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1502314
CATALOG NUMBER: GSS-SB2B-835-U-T3LG-HSS

## Iso-Footcandle Lines of Horizontal Illumination



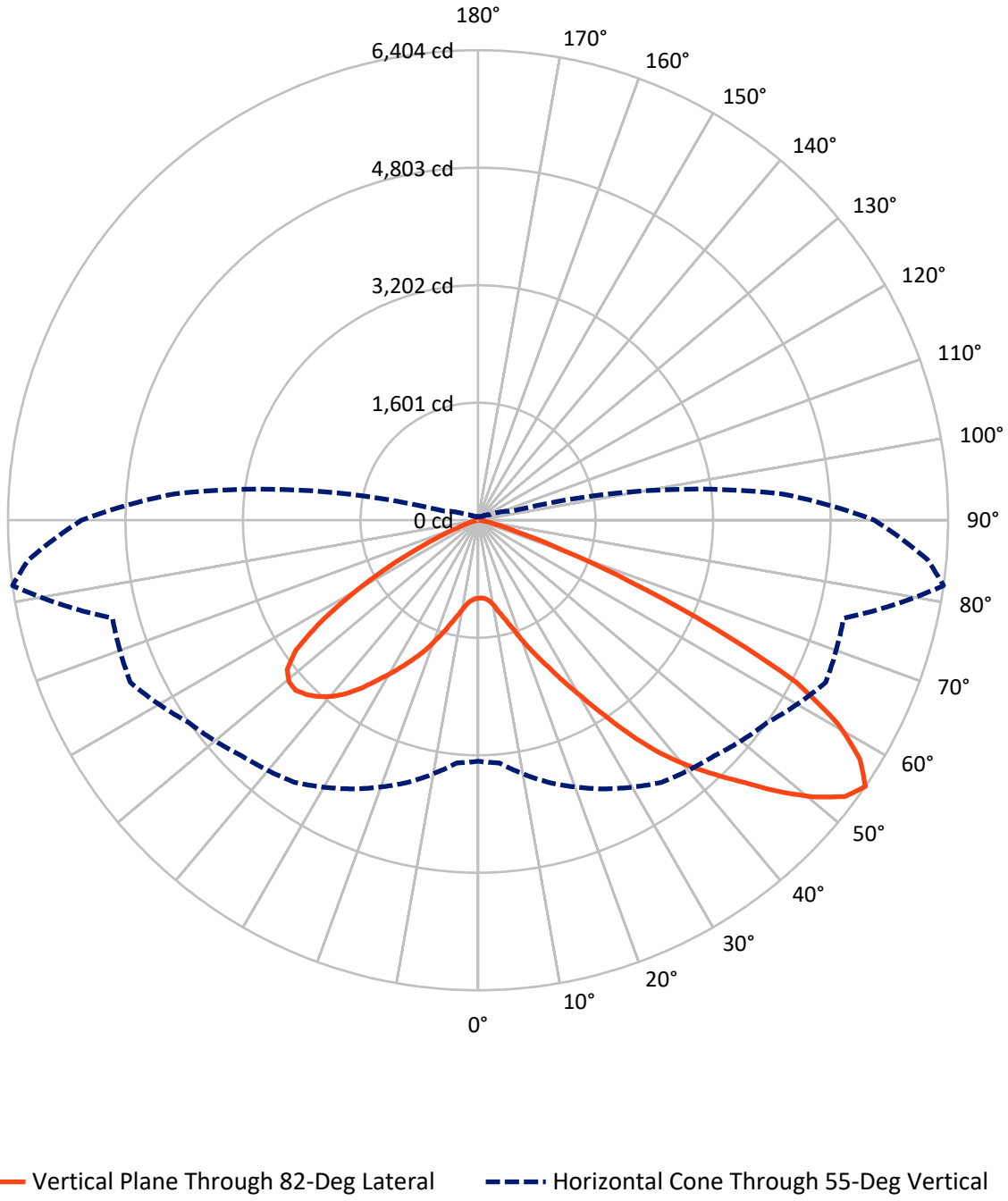

Based on 10 foot mounting height. Maximum calculated value = 19.9 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

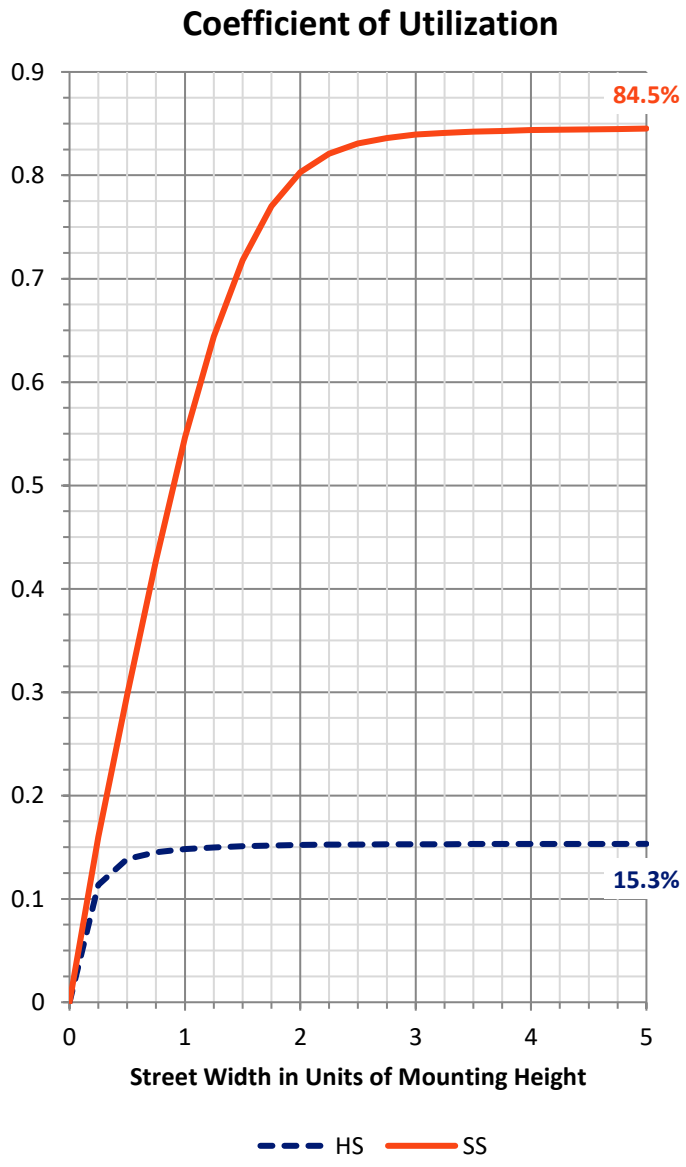
REPORT NUMBER: P1502314
CATALOG NUMBER: GSS-SB2B-835-U-T3LG-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1257.6 | 0.0 | 1257.6 |
| | % Fixture | 15.5 | 0.0 | 15.5 |
| **Street Side** | Lumens | 6878.7 | 0.0 | 6878.7 |
| | % Fixture | 84.5 | 0.0 | 84.5 |
| **Total** | Lumens | 8136.3 | 0.0 | 8136.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 96.3 | 1.2 |
| 10°-20° | 260.7 | 3.2 |
| 20°-30° | 521.1 | 6.4 |
| 30°-40° | 1079.0 | 13.3 |
| 40°-50° | 1802.5 | 22.2 |
| 50°-60° | 2286.2 | 28.1 |
| 60°-70° | 1709.1 | 21.0 |
| 70°-80° | 362.0 | 4.4 |
| 80°-90° | 19.5 | 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° | 8136.3 | 100.0 |
| 0°-180° | 8136.3 | 100.0 |



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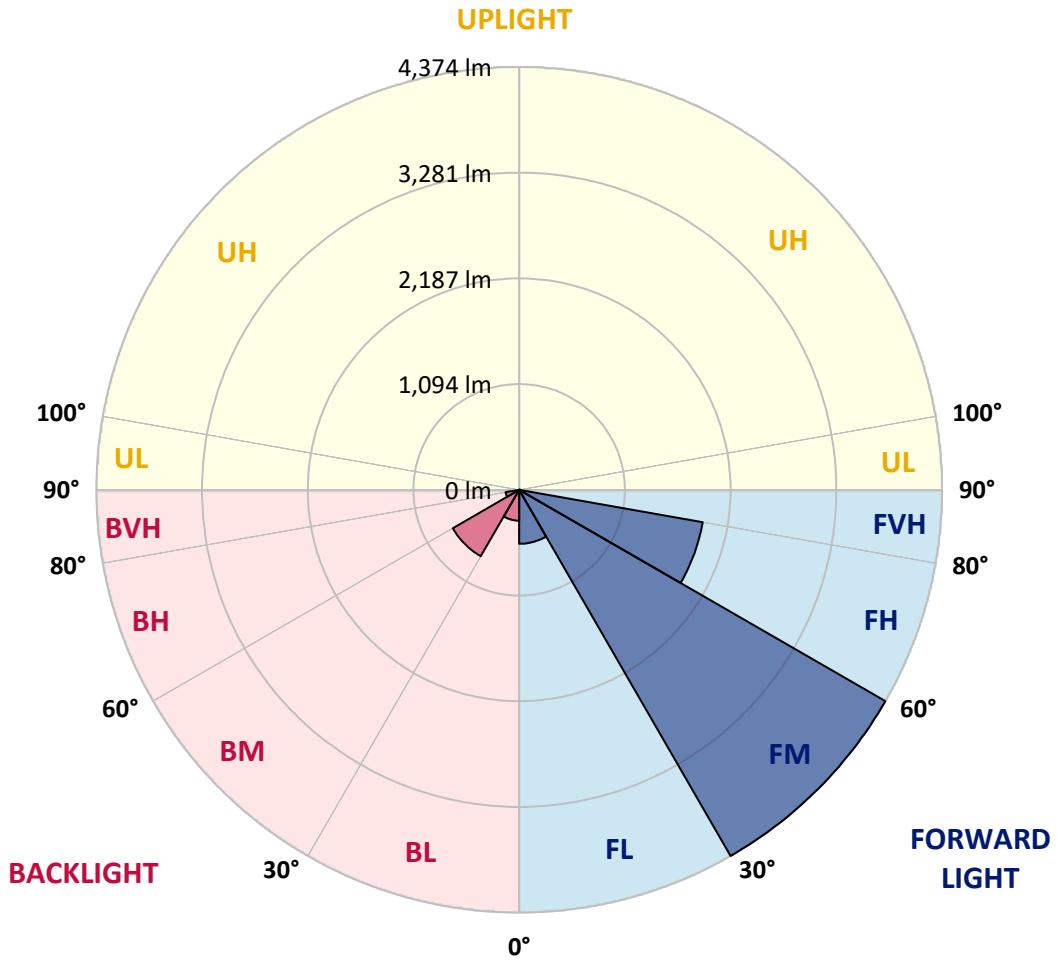
Scaled Data Report

REPORT NUMBER: P1502314
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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°) | 558.8 | 6.9 | | | |
| FM | (30°-60°) | 4374.2 | 53.8 | | | |
| FH | (60°-80°) | 1928.3 | 23.7 | | | G2/5000 |
| FVH | (80°-90°) | 17.4 | 0.2 | | | G1/100 |
| BL | (0°-30°) | 319.2 | 3.9 | B1/500 | | |
| BM | (30°-60°) | 793.5 | 9.8 | B1/1000 | | |
| BH | (60°-80°) | 142.8 | 1.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 2.1 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type III Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 82° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | *1062.2* | 1062.2 |
| 2.5° | 1033.5 | 1035.7 | 1031.3 | 1033.5 | 1037.9 | 1035.7 | 1044.5 | 1051.2 | 1057.8 | *1060.0* | 1062.2 |
| 5° | 942.9 | 945.2 | 947.4 | 965.0 | 976.1 | 1002.6 | 1026.9 | 1042.3 | 1064.4 | *1075.4* | 1077.7 |
| 7.5° | 834.7 | 834.7 | 843.6 | 865.7 | 894.4 | 945.2 | 1000.4 | 1044.5 | 1086.5 | *1108.6* | 1113.0 |
| 10° | 814.9 | 817.1 | 817.1 | 832.5 | 856.8 | 907.6 | 978.3 | 1066.6 | 1141.7 | *1174.8* | 1185.9 |
| 12.5° | 819.3 | 821.5 | 823.7 | 839.2 | 863.4 | 907.6 | 998.2 | 1113.0 | 1230.0 | *1285.2* | 1291.9 |
| 15° | 830.3 | 834.7 | 841.4 | 861.2 | 887.7 | 945.2 | 1040.1 | 1179.2 | 1336.0 | *1406.7* | 1424.4 |
| 17.5° | 863.4 | 865.7 | 876.7 | 898.8 | 940.7 | 998.2 | 1101.9 | 1265.4 | 1484.0 | *1561.3* | 1594.4 |
| 20° | 914.2 | 918.7 | 934.1 | 965.0 | 1013.6 | 1086.5 | 1201.3 | 1378.0 | 1643.0 | *1762.2* | 1788.7 |
| 22.5° | 978.3 | 978.3 | 1000.4 | 1048.9 | 1117.4 | 1199.1 | 1338.2 | 1528.1 | 1837.3 | *1976.4* | 2020.6 |
| 25° | 1084.3 | 1082.1 | 1099.7 | 1154.9 | 1236.7 | 1355.9 | 1497.2 | 1707.0 | 2040.5 | *2206.1* | 2252.5 |
| 27.5° | 1327.2 | 1320.6 | 1313.9 | 1316.2 | 1386.8 | 1539.2 | 1702.6 | 1932.3 | 2292.2 | *2486.6* | 2521.9 |
| 30° | 1609.9 | 1618.7 | 1609.9 | 1587.8 | 1598.8 | 1740.1 | 1943.3 | 2208.3 | 2574.9 | *2793.5* | 2839.9 |
| 32.5° | 1857.2 | 1861.6 | 1899.1 | 1923.4 | 1932.3 | 1998.5 | 2221.6 | 2541.8 | 2934.8 | *3173.3* | 3233.0 |
| 35° | 2126.6 | 2133.2 | 2175.2 | 2226.0 | 2305.5 | 2365.1 | 2570.5 | 2928.2 | 3301.4 | *3601.8* | 3645.9 |
| 37.5° | 2440.2 | 2451.2 | 2506.4 | 2579.3 | 2689.7 | 2826.6 | 2937.0 | 3279.3 | 3674.6 | *4021.3* | 4067.7 |
| 40° | 2716.2 | 2751.6 | 2846.5 | 2939.3 | 3056.3 | 3210.9 | 3283.8 | 3586.3 | 3950.7 | *4392.3* | 4469.6 |
| 42.5° | 2976.8 | 2996.7 | 3149.0 | 3292.6 | 3431.7 | 3557.6 | 3628.2 | 3827.0 | 4195.8 | *4736.8* | 4822.9 |
| 45° | 3193.2 | 3208.7 | 3378.7 | 3568.6 | 3740.9 | 3866.7 | 3877.8 | 4061.1 | 4438.7 | *5101.2* | 5167.4 |
| 47.5° | 3325.7 | 3350.0 | 3568.6 | 3785.0 | 3975.0 | 4092.0 | 4074.3 | 4359.2 | 4703.7 | *5525.2* | 5534.0 |
| 50° | 3405.2 | 3420.7 | 3643.7 | 3924.2 | 4158.2 | 4240.0 | 4277.5 | 4644.1 | 4944.4 | *5927.1* | 5874.1 |
| 52.5° | 3462.6 | 3486.9 | 3705.5 | 4003.7 | 4266.5 | 4376.9 | 4511.6 | 4964.3 | 5134.3 | *6256.1* | 6114.8 |
| 55° | *3283.8* | *3319.1* | *3696.7* | *4039.0* | *4359.2* | *4544.7* | *4809.7* | *5227.1* | *5156.4* | *6404.1* | *6145.7* |
| 57.5° | 3082.8 | 3089.4 | 3462.6 | 4028.0 | 4463.0 | 4721.4 | 5083.5 | 5246.9 | 4951.0 | *6134.7* | 5832.1 |
| 60° | 2786.9 | 2826.6 | 3208.7 | 3884.4 | 4480.7 | 4862.7 | 5269.0 | 5006.2 | 4575.6 | *5635.6* | 5180.7 |
| 62.5° | 1956.6 | 2018.4 | 2517.5 | 3506.8 | 4354.8 | 4940.0 | 5238.1 | 4586.7 | 4105.2 | *4864.9* | 4354.8 |
| 65° | 1095.3 | 1148.3 | 1556.9 | 2828.8 | 4008.1 | 4922.3 | 4920.1 | 4025.7 | 3350.0 | *3515.6* | 3113.7 |
| 67.5° | 600.7 | 642.6 | 808.2 | 2128.8 | 3180.0 | 4544.7 | 4251.0 | 3071.8 | 2245.8 | *2232.6* | 1943.3 |
| 70° | 419.6 | 421.8 | 510.1 | 1437.6 | 2285.6 | 3171.1 | 3323.5 | 2060.4 | 1393.4 | *1232.2* | 1040.1 |
| 72.5° | 205.4 | 207.6 | 254.0 | 678.0 | 1397.9 | 1757.8 | 2279.0 | 1071.0 | 781.7 | *611.7* | 521.2 |
| 75° | 103.8 | 101.6 | 139.1 | 254.0 | 578.6 | 856.8 | 1004.8 | 536.6 | 454.9 | *335.7* | 298.1 |
| 77.5° | 66.2 | 68.5 | 81.7 | 139.1 | 260.6 | 333.5 | 309.2 | 291.5 | 267.2 | *196.5* | 170.0 |
| 80° | 44.2 | 44.2 | 55.2 | 88.3 | 128.1 | 159.0 | 95.0 | 134.7 | 156.8 | *114.8* | 99.4 |
| 82.5° | 13.2 | 13.2 | 33.1 | 48.6 | 61.8 | 64.0 | 42.0 | 61.8 | 88.3 | *64.0* | 48.6 |
| 85° | 8.8 | 8.8 | 17.7 | 24.3 | 26.5 | 22.1 | 13.2 | 26.5 | 42.0 | *28.7* | 24.3 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | *2.2* | 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: P1502314
CATALOG NUMBER: GSS-SB2B-835-U-T3LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 | 1062.2 |
| 2.5° | 1064.4 | 1066.6 | 1073.2 | 1075.4 | 1079.9 | 1082.1 | 1082.1 | 1082.1 | 1079.9 | 1082.1 | 1086.5 |
| 5° | 1082.1 | 1093.1 | 1101.9 | 1099.7 | 1099.7 | 1088.7 | 1079.9 | 1062.2 | 1053.4 | 1051.2 | 1053.4 |
| 7.5° | 1126.2 | 1135.1 | 1143.9 | 1130.7 | 1097.5 | 1046.7 | 991.5 | 947.4 | 909.8 | 892.2 | 898.8 |
| 10° | 1205.7 | 1216.8 | 1216.8 | 1154.9 | 1062.2 | 942.9 | 843.6 | 761.9 | 700.0 | 666.9 | 682.4 |
| 12.5° | 1320.6 | 1329.4 | 1307.3 | 1177.0 | 1000.4 | 803.8 | 638.2 | 501.3 | 421.8 | 382.0 | 373.2 |
| 15° | 1453.1 | 1466.3 | 1391.2 | 1172.6 | 903.2 | 600.7 | 397.5 | 298.1 | 269.4 | 260.6 | 262.8 |
| 17.5° | 1623.1 | 1629.7 | 1484.0 | 1137.3 | 735.4 | 393.1 | 282.7 | 254.0 | 247.3 | 242.9 | 242.9 |
| 20° | 1832.9 | 1813.0 | 1559.1 | 1077.7 | 536.6 | 309.2 | 260.6 | 238.5 | 231.9 | 229.7 | 231.9 |
| 22.5° | 2058.1 | 2027.2 | 1620.9 | 965.0 | 406.3 | 291.5 | 249.5 | 225.2 | 216.4 | 214.2 | 214.2 |
| 25° | 2294.4 | 2223.8 | 1669.5 | 799.4 | 379.8 | 287.1 | 236.3 | 205.4 | 196.5 | 192.1 | 192.1 |
| 27.5° | 2563.8 | 2442.4 | 1696.0 | 669.1 | 386.5 | 280.5 | 220.8 | 187.7 | 174.5 | 170.0 | 170.0 |
| 30° | 2862.0 | 2685.3 | 1698.2 | 642.6 | 399.7 | 271.6 | 205.4 | 167.8 | 154.6 | 148.0 | 150.2 |
| 32.5° | 3224.1 | 2932.6 | 1691.6 | 684.6 | 408.5 | 265.0 | 187.7 | 148.0 | 136.9 | 130.3 | 130.3 |
| 35° | 3599.5 | 3233.0 | 1665.1 | 764.1 | 413.0 | 245.1 | 165.6 | 130.3 | 117.0 | 114.8 | 117.0 |
| 37.5° | 3972.7 | 3517.8 | 1627.5 | 808.2 | 390.9 | 201.0 | 134.7 | 112.6 | 103.8 | 103.8 | 103.8 |
| 40° | 4312.8 | 3765.2 | 1576.7 | 770.7 | 311.4 | 145.7 | 110.4 | 97.2 | 92.7 | 90.5 | 92.7 |
| 42.5° | 4566.8 | 3986.0 | 1484.0 | 649.2 | 220.8 | 117.0 | 97.2 | 86.1 | 81.7 | 81.7 | 83.9 |
| 45° | 4845.0 | 4198.0 | 1305.1 | 477.0 | 167.8 | 101.6 | 83.9 | 75.1 | 72.9 | 72.9 | 75.1 |
| 47.5° | 5125.5 | 4368.0 | 1132.9 | 318.0 | 145.7 | 90.5 | 75.1 | 68.5 | 66.2 | 64.0 | 66.2 |
| 50° | 5339.7 | 4449.7 | 907.6 | 231.9 | 132.5 | 81.7 | 68.5 | 64.0 | 59.6 | 57.4 | 57.4 |
| 52.5° | 5492.1 | 4427.7 | 664.7 | 198.7 | 121.5 | 75.1 | 64.0 | 59.6 | 53.0 | 53.0 | 53.0 |
| 55° | *5399.3* | *4145.0* | *479.2* | *178.9* | *112.6* | *70.7* | *61.8* | *55.2* | *50.8* | *48.6* | *48.6* |
| 57.5° | 4948.8 | 3533.3 | 346.7 | 161.2 | 99.4 | 66.2 | 59.6 | 53.0 | 46.4 | 44.2 | 44.2 |
| 60° | 4301.8 | 2751.6 | 258.4 | 141.3 | 86.1 | 64.0 | 53.0 | 50.8 | 44.2 | 39.7 | 39.7 |
| 62.5° | 3515.6 | 2002.9 | 201.0 | 121.5 | 77.3 | 55.2 | 50.8 | 46.4 | 39.7 | 35.3 | 33.1 |
| 65° | 2440.2 | 1278.6 | 154.6 | 99.4 | 72.9 | 48.6 | 46.4 | 39.7 | 33.1 | 26.5 | 26.5 |
| 67.5° | 1506.1 | 759.7 | 119.2 | 77.3 | 57.4 | 42.0 | 39.7 | 35.3 | 28.7 | 22.1 | 22.1 |
| 70° | 832.5 | 401.9 | 81.7 | 57.4 | 44.2 | 33.1 | 30.9 | 30.9 | 24.3 | 19.9 | 17.7 |
| 72.5° | 399.7 | 218.6 | 55.2 | 48.6 | 33.1 | 22.1 | 24.3 | 24.3 | 19.9 | 15.5 | 15.5 |
| 75° | 240.7 | 130.3 | 37.5 | 37.5 | 22.1 | 17.7 | 17.7 | 19.9 | 15.5 | 11.0 | 11.0 |
| 77.5° | 136.9 | 77.3 | 22.1 | 28.7 | 15.5 | 11.0 | 13.2 | 11.0 | 8.8 | 6.6 | 6.6 |
| 80° | 77.3 | 44.2 | 13.2 | 19.9 | 8.8 | 6.6 | 6.6 | 4.4 | 4.4 | 2.2 | 2.2 |
| 82.5° | 37.5 | 24.3 | 6.6 | 6.6 | 4.4 | 2.2 | 2.2 | 2.2 | 2.2 | 0.0 | 0.0 |
| 85° | 17.7 | 4.4 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 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: SP1-2407-184-10

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

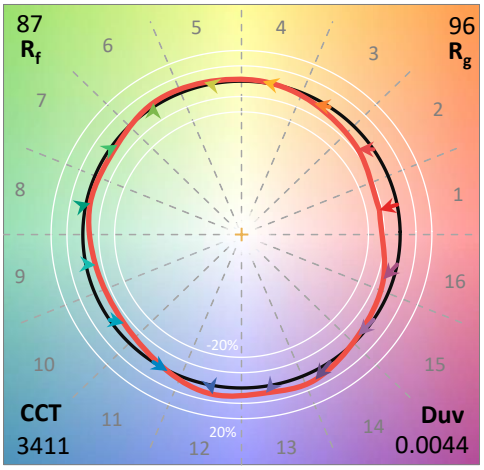
## Test Information

| | |
|---|---|
| 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

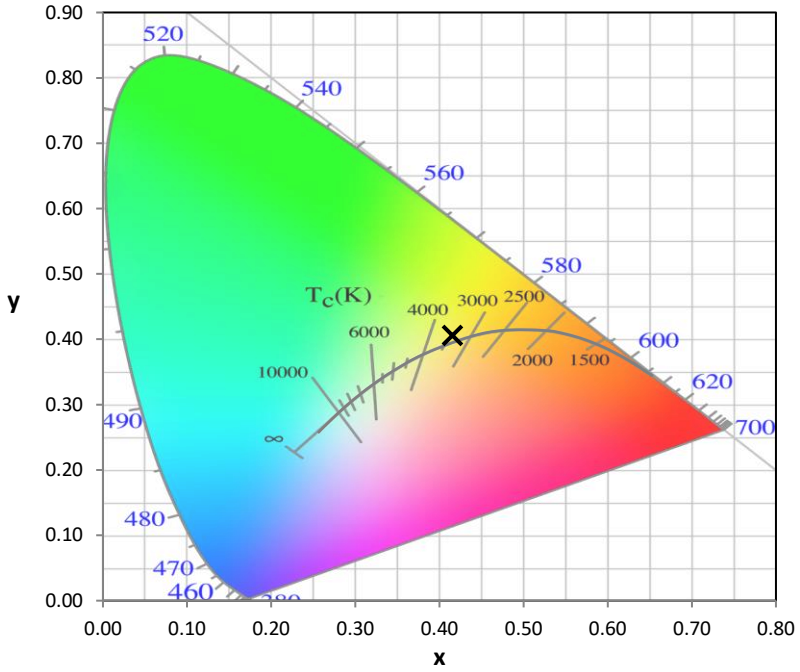
| | |
|---|---|
| Stabilization Time: | 35M |
| Operation Time: | 1H 35M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-10

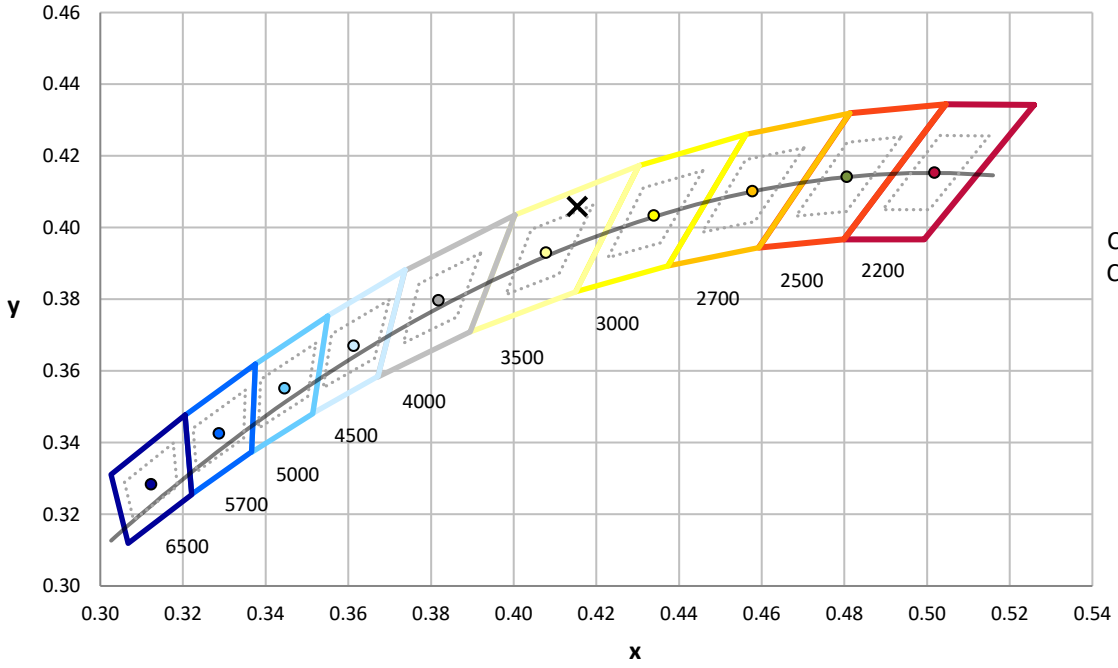
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

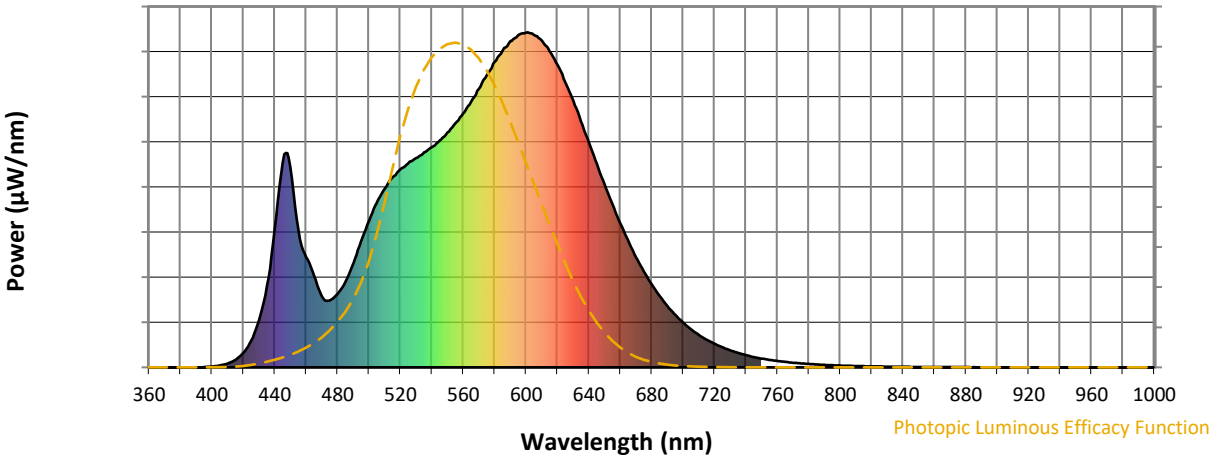



CCT = 3411K
CIE x = 0.4154
CIE y = 0.4059
Duv = 0.0044

Point lies inside the ANSI 3500K 7-step quadrangle

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## Photopic Flux vs. Wavelength

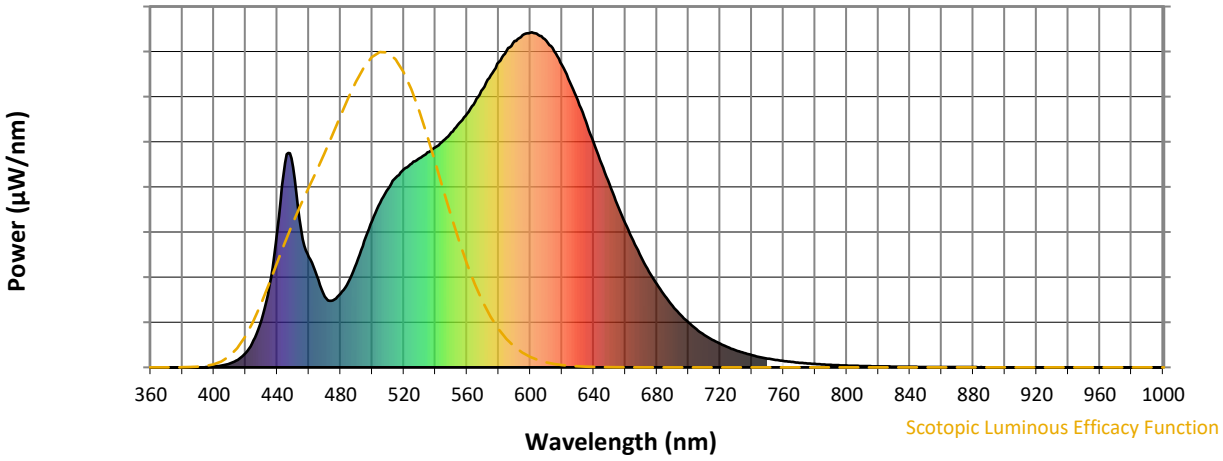



## Photopic Lumens: NR

| 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

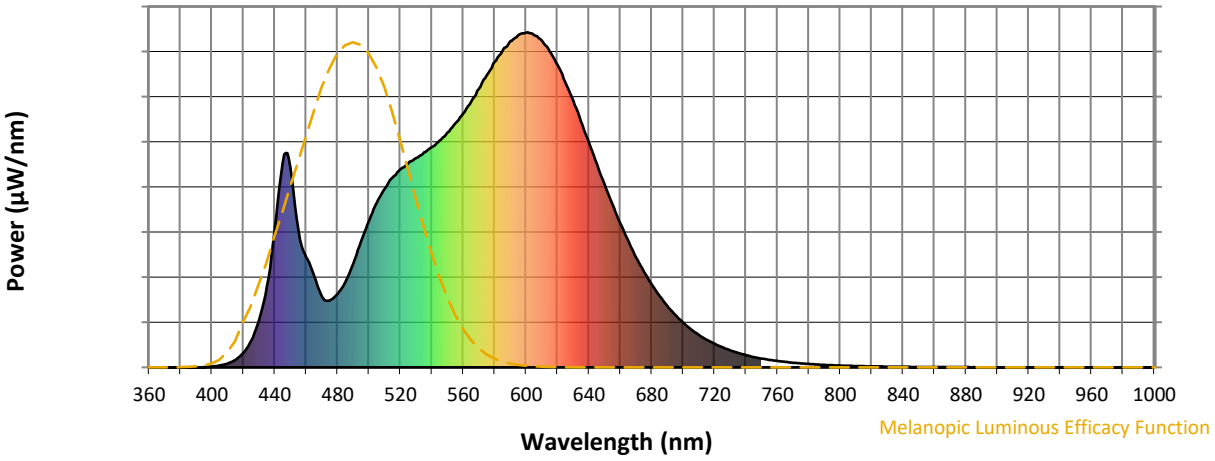



**Scotopic Lumens: NR** **S/P: 1.48**

| 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 | | | |

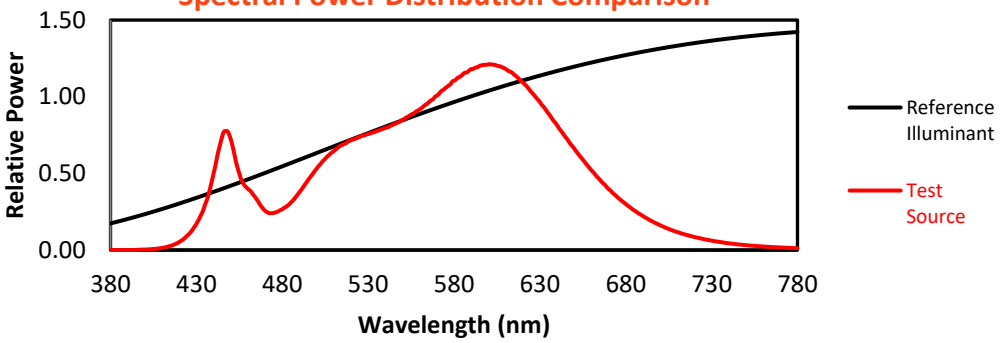
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# TM-30-18

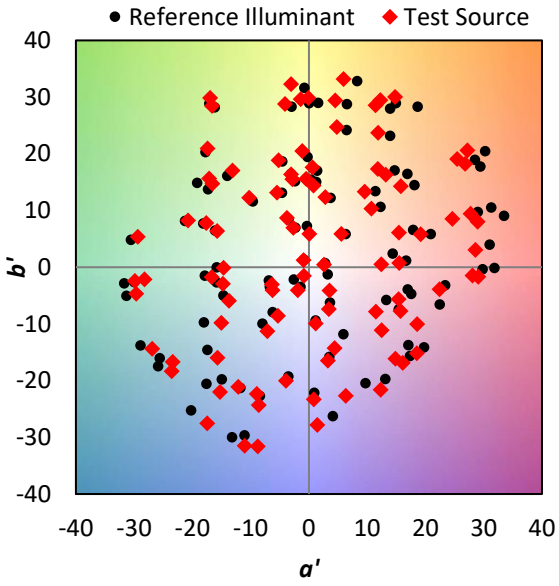
## Summary

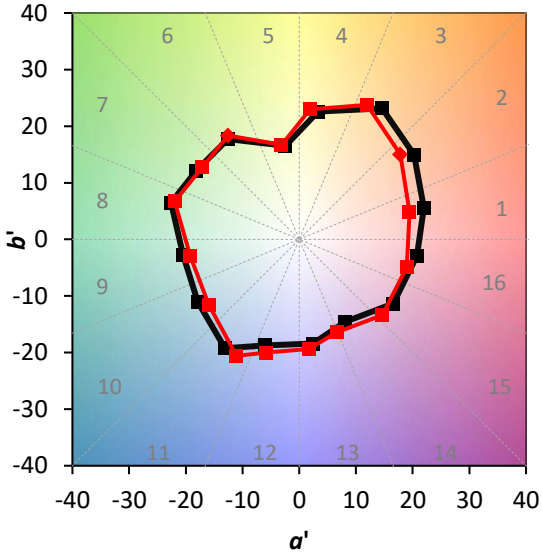
$R_f$ = 86.6
$R_g$ = 95.9
CIE $R_a$ = 83.5
$R_9$ = 6.3

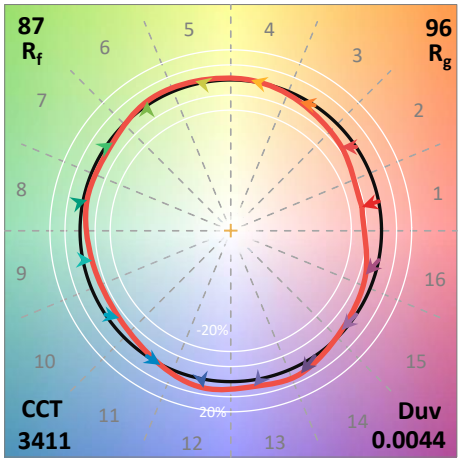
## Spectral Power Distribution Comparison

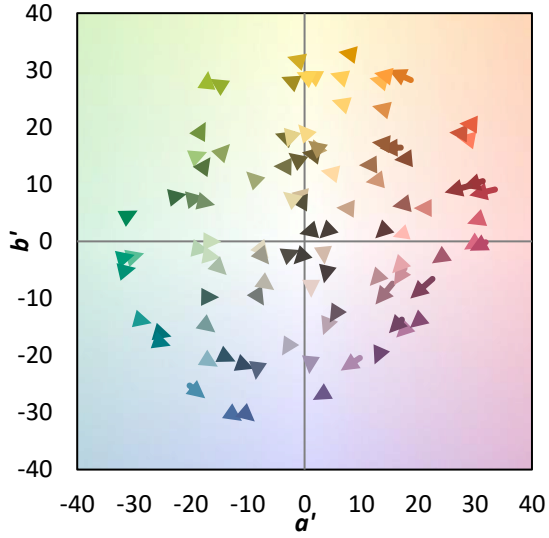



## Color Vector Graphics



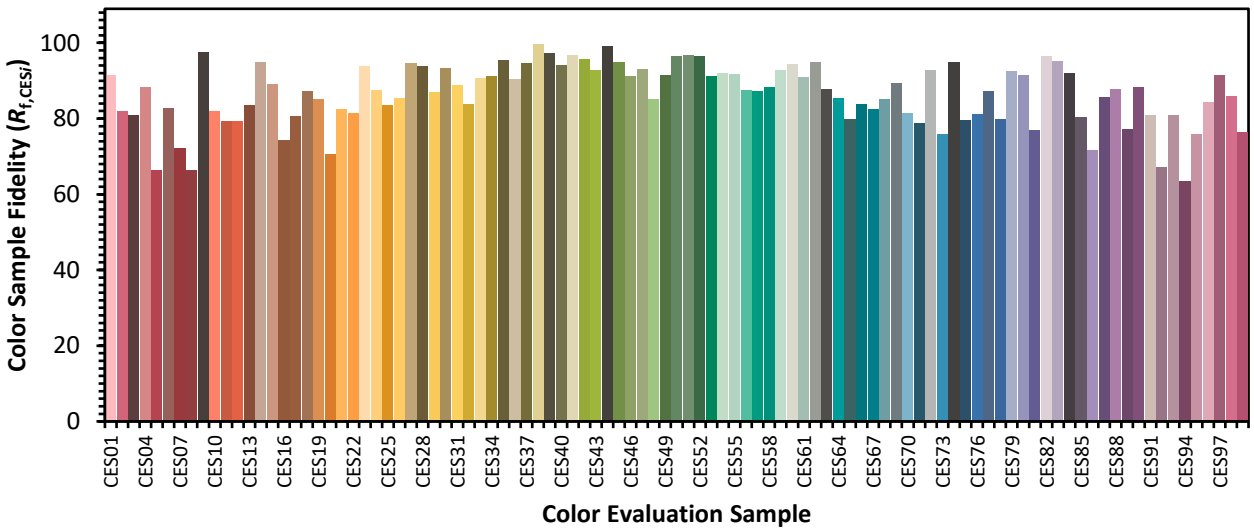



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# TM-30-18

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

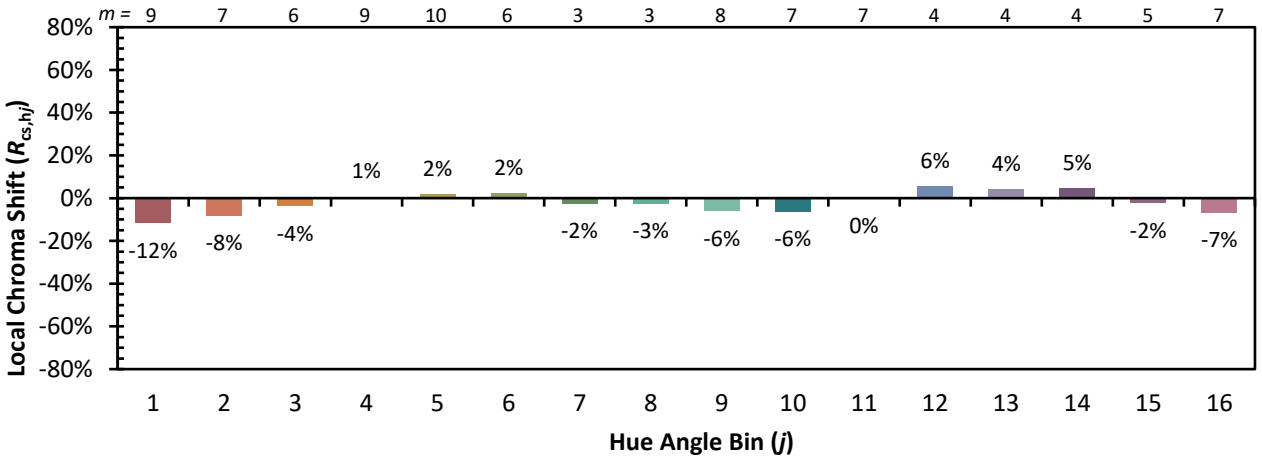
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 85 | CES51 = 97 | CES76 = 81 |
| CES02 = 62 | CES27 = 95 | CES52 = 96 | CES77 = 87 |
| CES03 = 31 | CES28 = 94 | CES53 = 91 | CES78 = 80 |
| CES04 = 70 | CES29 = 87 | CES54 = 92 | CES79 = 93 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 91 |
| CES06 = 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 | |

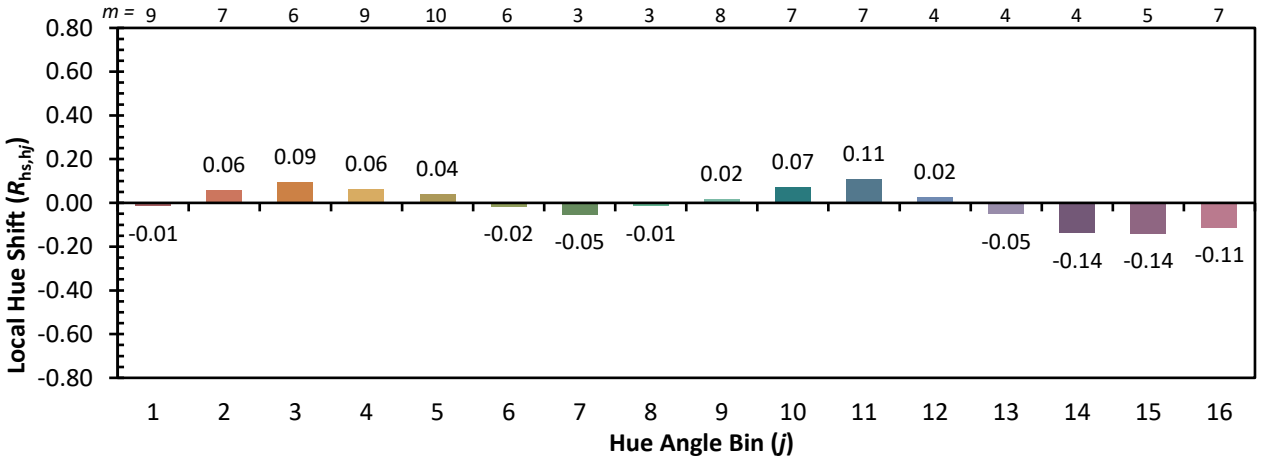


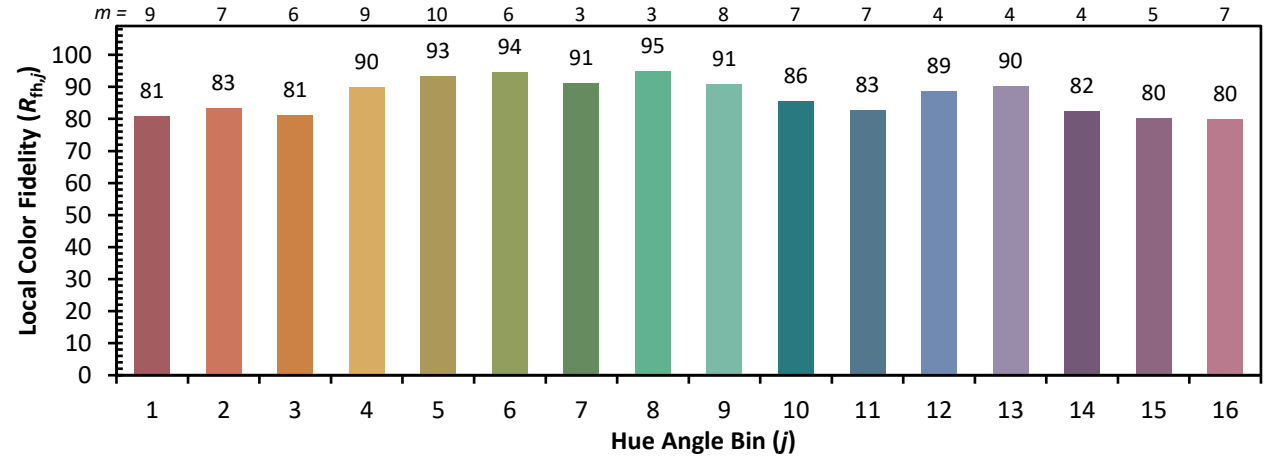
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## Color Rendition by Hue-Angle Bin



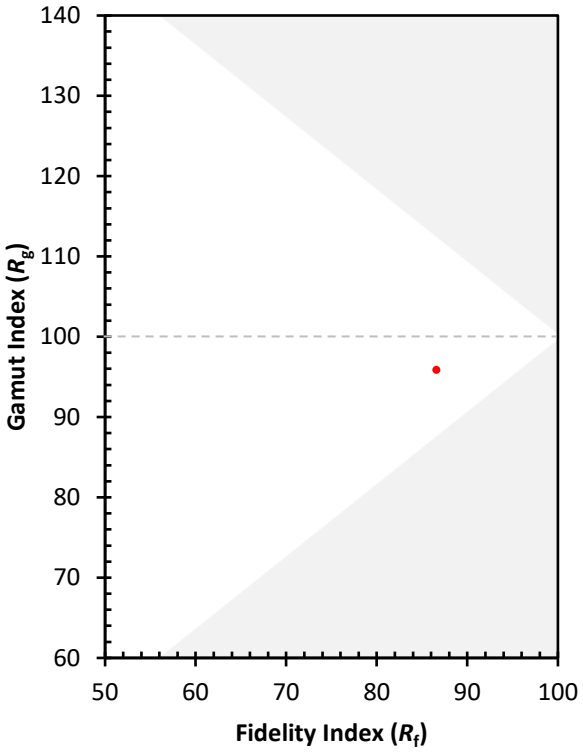



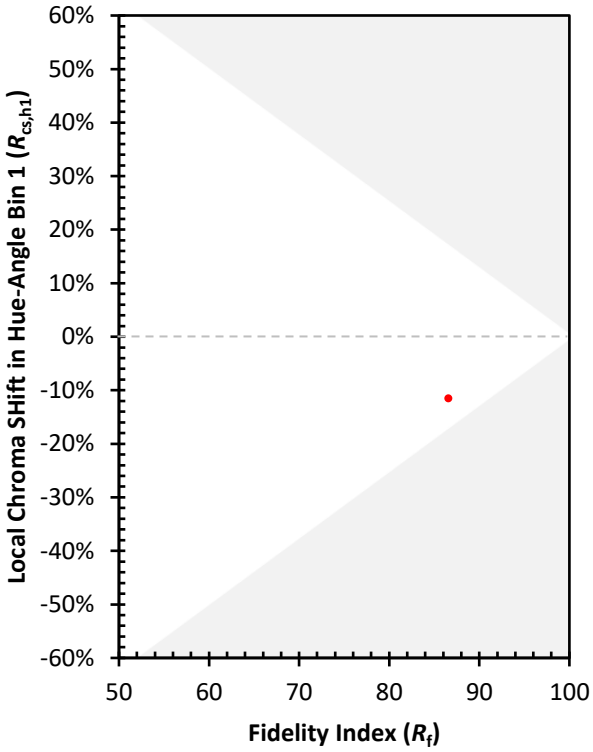



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## Measure Comparisons




(END OF REPORT)