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: P1047819

Luminaire Tested: **GALN-SA4C-750-U-T2BC**

Issue Date: 07/10/2025

Report Generated By 670347003

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: | P1047819 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 07/10/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GALN-SA4C-750-U-T2BC |
| Description: | GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 4xLight Square PACKAGE 70CRI 5000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL |
| Light Source: | (56) 5000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 22533 lumens |
| Efficiency: | N/A |
| Efficacy: | 118.3 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 1' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B0 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 190.4 |
| 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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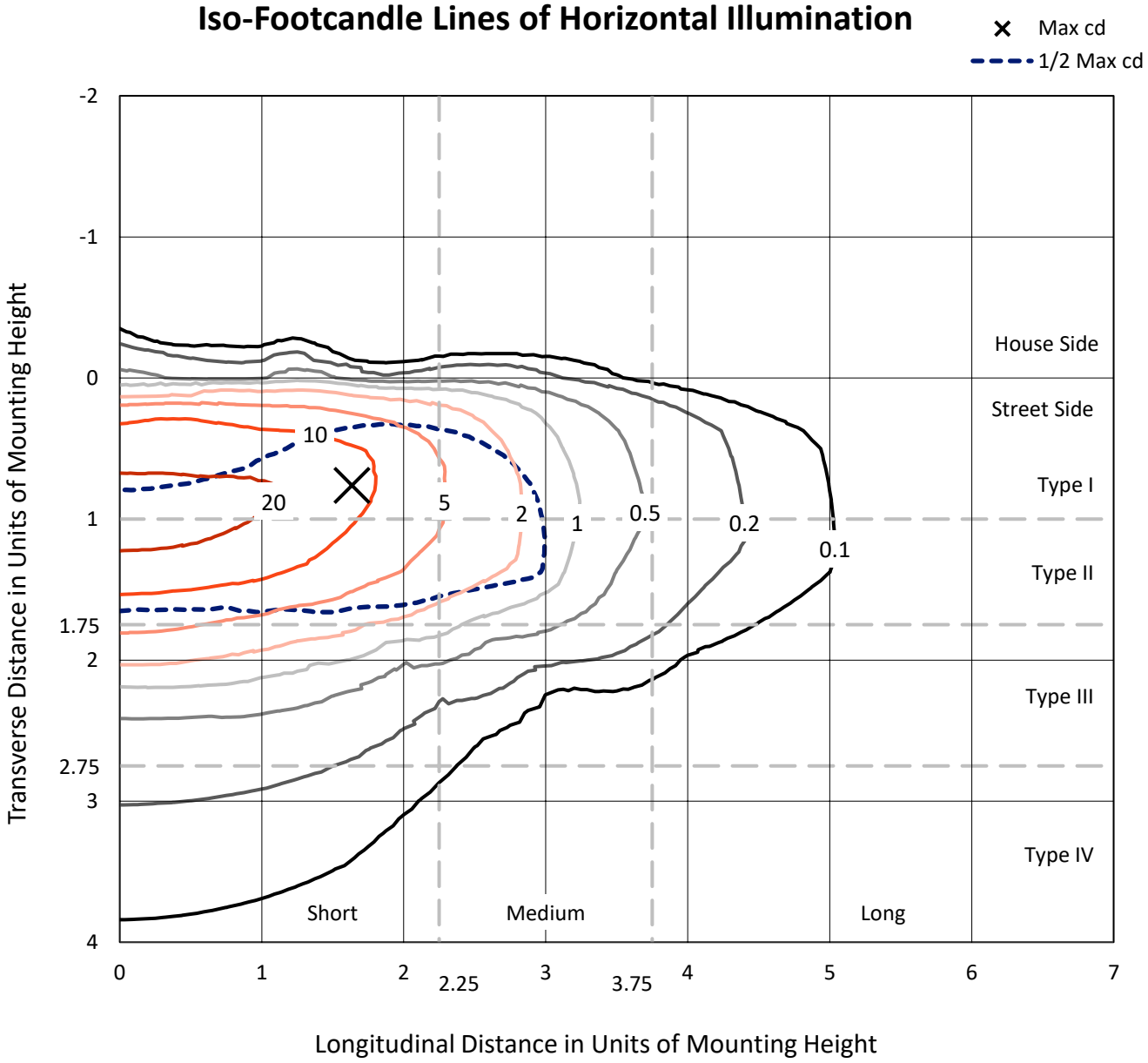
REPORT NUMBER: P1047819
CATALOG NUMBER: GALN-SA4C-750-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 29.8 fc
Type II - Short - N/A

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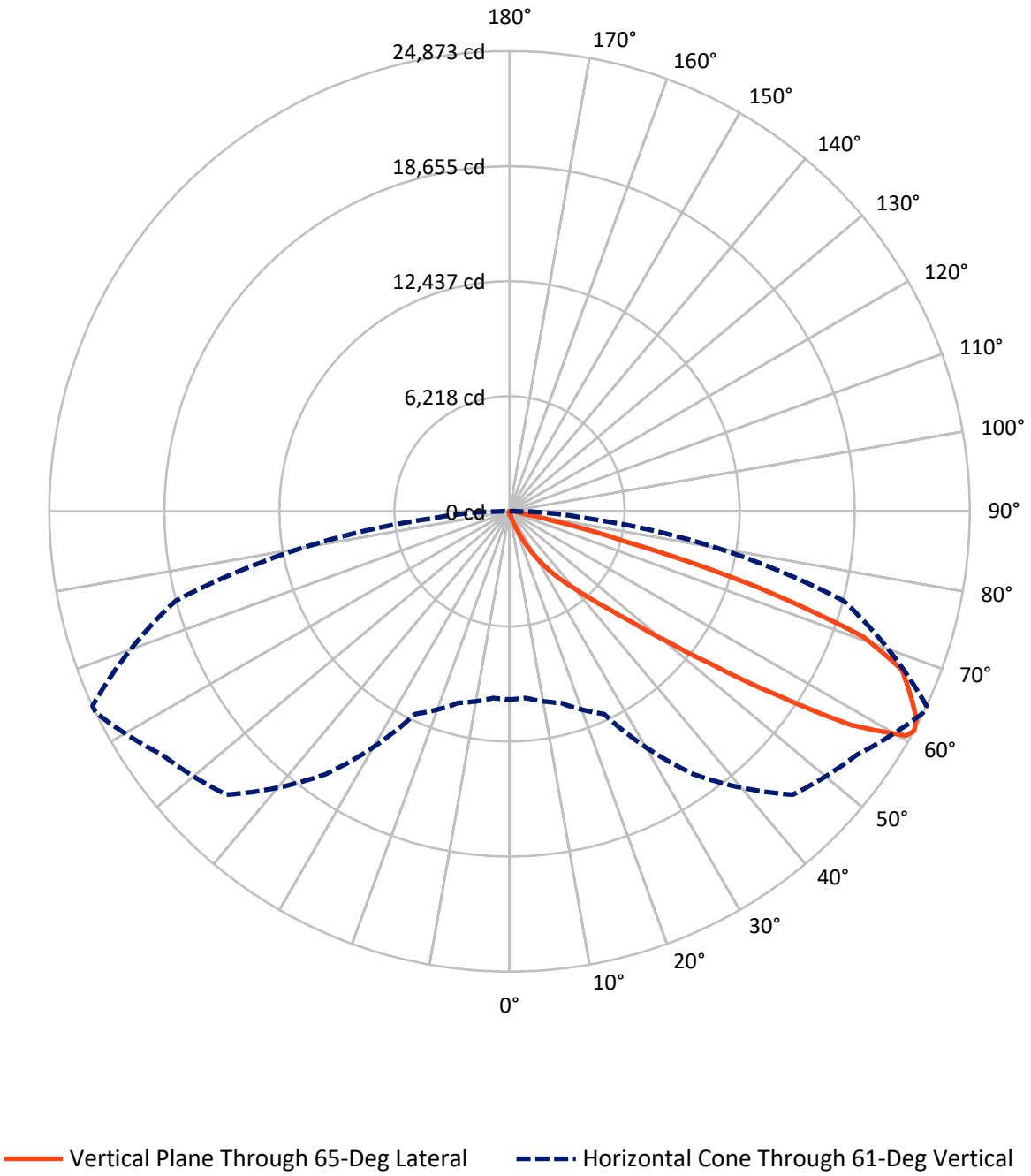
## Luminous Intensity Polar Plot



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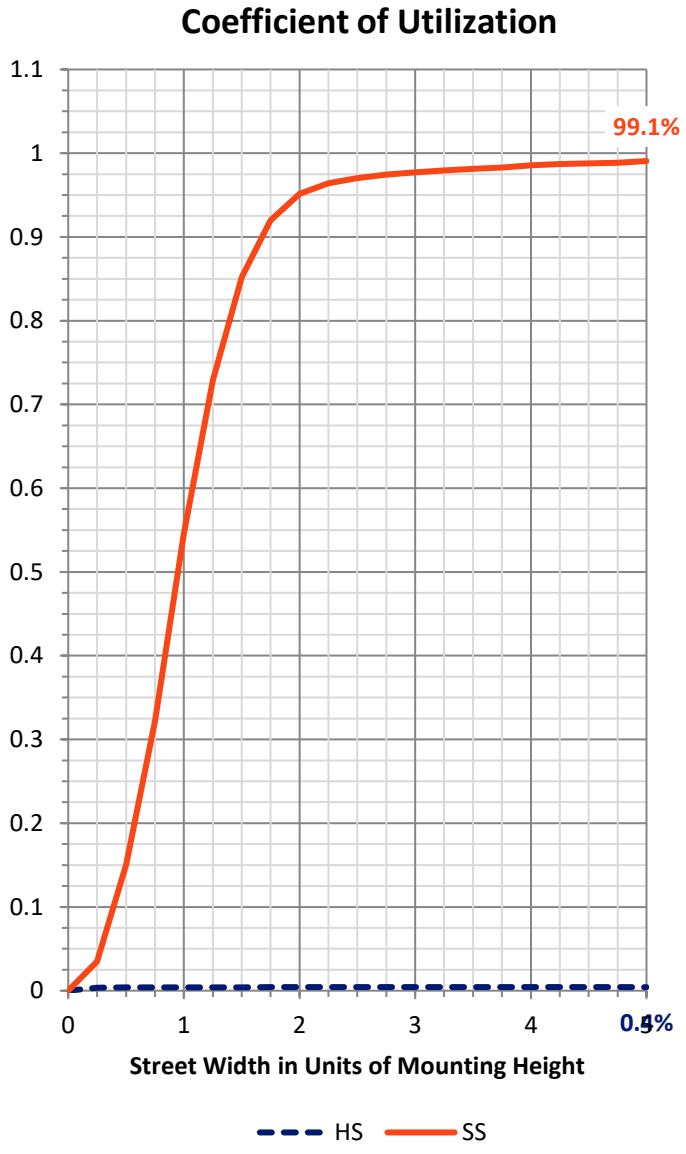
REPORT NUMBER: P1047819
CATALOG NUMBER: GALN-SA4C-750-U-T2BC

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 96.2 | 0.0 | 96.2 |
| | % Fixture | 0.4 | 0.0 | 0.4 |
| **Street Side** | Lumens | 22436.8 | 0.0 | 22436.8 |
| | % Fixture | 99.6 | 0.0 | 99.6 |
| **Total** | Lumens | 22533.0 | 0.0 | 22533.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 17.5 | 0.1 |
| 10°-20° | 185.3 | 0.8 |
| 20°-30° | 665.0 | 3.0 |
| 30°-40° | 1770.4 | 7.9 |
| 40°-50° | 4650.9 | 20.6 |
| 50°-60° | 7205.2 | 32.0 |
| 60°-70° | 6041.4 | 26.8 |
| 70°-80° | 1777.9 | 7.9 |
| 80°-90° | 219.3 | 1.0 |
| 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° | 22533.0 | 100.0 |
| 0°-180° | 22533.0 | 100.0 |



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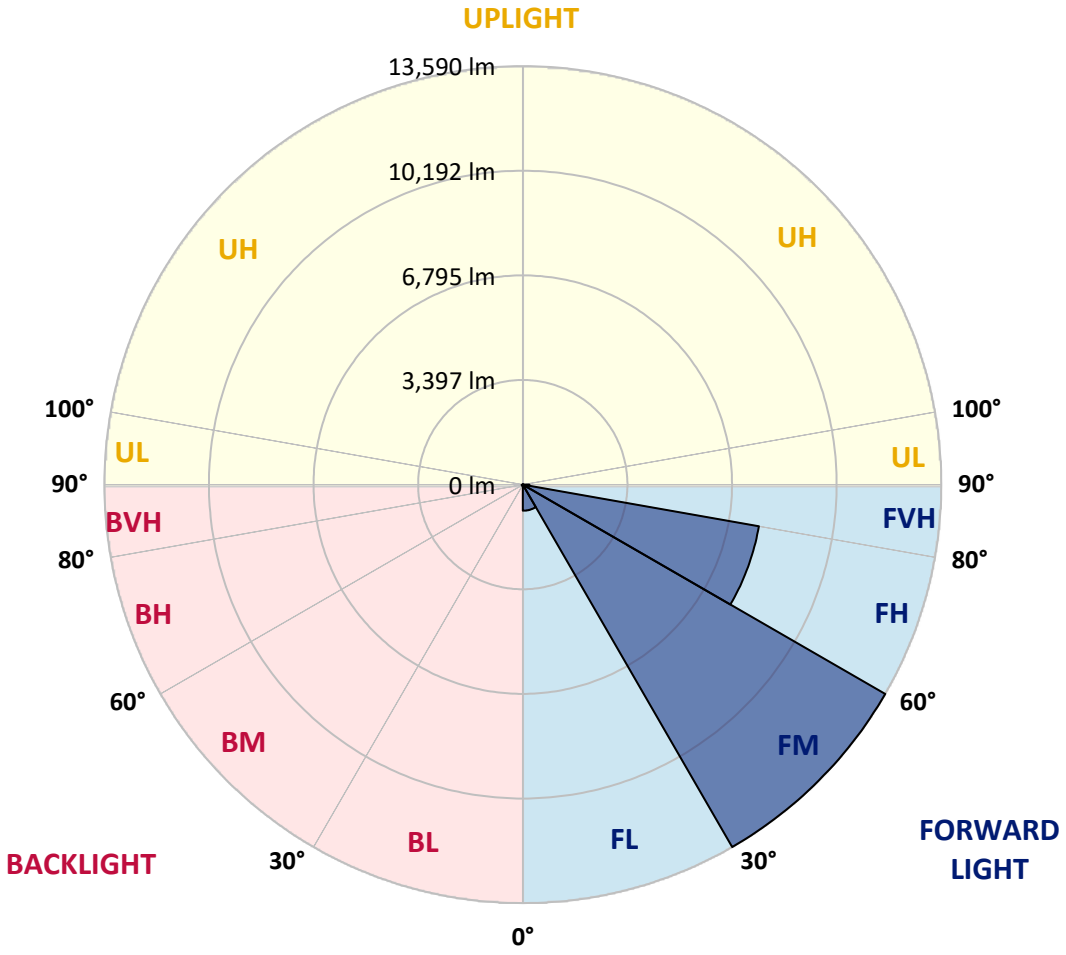
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 846.2 | 3.8 | | | |
| FM | (30°-60°) | 13589.9 | 60.3 | | | |
| FH | (60°-80°) | 7785.4 | 34.6 | | | G4/12000 |
| FVH | (80°-90°) | 215.3 | 1.0 | | | G2/225 |
| BL | (0°-30°) | 21.6 | 0.1 | B0/110 | | |
| BM | (30°-60°) | 36.6 | 0.2 | B0/220 | | |
| BH | (60°-80°) | 33.9 | 0.2 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 4.1 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B0-U0-G4**
Type II Short



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REPORT NUMBER: P1047819
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | *138.0* | 138.0 | 138.0 |
| 2.5° | 167.4 | 169.0 | 165.9 | 159.7 | 155.0 | 155.0 | 153.5 | 148.8 | *148.8* | 144.2 | 141.1 |
| 5° | 234.1 | 231.0 | 224.8 | 212.4 | 201.5 | 190.7 | 179.8 | 169.0 | *167.4* | 153.5 | 144.2 |
| 7.5° | 382.9 | 386.0 | 365.8 | 327.1 | 294.5 | 252.7 | 213.9 | 190.7 | *187.6* | 164.3 | 145.7 |
| 10° | 840.1 | 816.9 | 770.4 | 620.0 | 510.0 | 384.4 | 285.2 | 221.7 | *218.6* | 176.7 | 148.8 |
| 12.5° | 1531.4 | 1512.8 | 1427.6 | 1272.6 | 988.9 | 688.2 | 417.0 | 274.4 | *265.1* | 187.6 | 150.4 |
| 15° | 2207.2 | 2177.8 | 2131.3 | 1974.7 | 1643.0 | 1233.8 | 682.0 | 375.1 | *350.3* | 203.1 | 148.8 |
| 17.5° | 2638.1 | 2642.8 | 2600.9 | 2534.3 | 2320.4 | 1825.9 | 1178.0 | 559.6 | *511.5* | 231.0 | 145.7 |
| 20° | 3014.8 | 3003.9 | 3027.2 | 2991.5 | 2841.2 | 2481.6 | 1714.3 | 886.6 | *804.5* | 275.9 | 147.3 |
| 22.5° | 3448.8 | 3475.2 | 3492.2 | 3484.5 | 3318.6 | 3011.7 | 2323.5 | 1326.8 | *1223.0* | 358.1 | 151.9 |
| 25° | 4030.1 | 4027.0 | 4028.5 | 4008.4 | 3847.2 | 3506.2 | 2934.2 | 1874.0 | *1768.6* | 491.4 | 162.8 |
| 27.5° | 4639.2 | 4657.8 | 4665.6 | 4592.7 | 4381.9 | 4047.1 | 3500.0 | 2472.3 | *2348.3* | 705.3 | 176.7 |
| 30° | 5471.6 | 5456.1 | 5420.4 | 5271.6 | 5015.9 | 4600.5 | 4058.0 | 3100.1 | *2969.8* | 1004.4 | 198.4 |
| 32.5° | 6593.8 | 6576.8 | 6397.0 | 6068.3 | 5685.5 | 5177.1 | 4619.1 | 3729.4 | *3571.3* | 1378.0 | 227.9 |
| 35° | 8443.0 | 8469.3 | 8027.6 | 7176.6 | 6490.0 | 5869.9 | 5240.6 | 4355.6 | *4216.1* | 1838.3 | 268.2 |
| 37.5° | 11274.9 | 11130.7 | 10530.9 | 9027.3 | 7548.6 | 6734.9 | 5834.3 | 4988.0 | *4867.1* | 2405.6 | 320.9 |
| 40° | 14026.2 | 13883.6 | 13710.0 | 12285.5 | 9388.5 | 7688.1 | 6665.1 | 5730.4 | *5573.9* | 3045.8 | 398.4 |
| 42.5° | 16918.5 | 16839.5 | 16831.7 | 15757.6 | 12745.9 | 9187.0 | 7664.9 | 6600.0 | *6466.7* | 3748.0 | 525.5 |
| 45° | 18967.7 | 18888.6 | 19054.5 | 19242.0 | 17318.4 | 12398.7 | 9405.6 | 7730.0 | *7536.2* | 4600.5 | 728.5 |
| 47.5° | 19243.6 | 19246.7 | 19690.0 | 20277.4 | 20716.1 | 17366.5 | 11724.4 | 9227.3 | *8991.7* | 5820.3 | 1069.5 |
| 50° | 18325.9 | 18361.6 | 19066.9 | 20117.8 | 21298.9 | 21534.5 | 15813.4 | 11400.4 | *11051.7* | 7266.5 | 1553.1 |
| 52.5° | 16579.1 | 16619.4 | 17602.1 | 19330.4 | 20762.6 | 22535.8 | 20627.7 | 14243.2 | *13841.7* | 9070.7 | 2235.1 |
| 55° | 15005.8 | 15030.6 | 16157.5 | 18341.4 | 20116.2 | 21991.8 | 23486.0 | 18039.2 | *17512.2* | 11290.4 | 2907.8 |
| 57.5° | 13448.0 | 13390.7 | 14123.8 | 16624.0 | 20006.2 | 21323.7 | 23907.6 | 22365.3 | *21784.1* | 13716.2 | 3431.8 |
| 60° | 11364.8 | 11268.7 | 11857.7 | 13448.0 | 18558.5 | 21762.4 | 23118.6 | 24758.6 | *24626.8* | 17093.7 | 3836.3 |
| 61° | *10166.6* | *10126.3* | *10718.4* | *12082.4* | *17340.1* | *21650.8* | *22929.5* | *24859.3* | *24873.3* | *18691.8* | *4017.7* |
| 62.5° | 7260.3 | 7375.0 | 8280.2 | 10053.5 | 14523.7 | 20926.9 | 22954.3 | 24547.7 | *24685.7* | 20815.3 | 4487.3 |
| 65° | 3227.2 | 3411.6 | 4115.3 | 5558.4 | 8446.1 | 17408.3 | 22734.2 | 23864.2 | *23796.0* | 21398.1 | 6105.5 |
| 67.5° | 1914.3 | 1942.2 | 2292.5 | 3149.7 | 4473.4 | 9363.7 | 20062.0 | 22960.5 | *22869.1* | 18628.2 | 7596.7 |
| 70° | 1508.2 | 1522.1 | 1633.7 | 1976.3 | 2596.3 | 3586.8 | 11450.0 | 19865.1 | *20263.5* | 15105.0 | 7437.0 |
| 72.5° | 1430.7 | 1427.6 | 1443.1 | 1503.5 | 1635.3 | 1779.4 | 4433.1 | 13204.7 | *14015.3* | 10878.1 | 6235.8 |
| 75° | 1412.1 | 1405.9 | 1390.4 | 1367.1 | 1184.2 | 1047.8 | 1373.3 | 5840.5 | *6310.2* | 7432.4 | 4695.0 |
| 77.5° | 1370.2 | 1371.8 | 1374.9 | 1311.3 | 1015.3 | 740.9 | 665.0 | 1874.0 | *2304.9* | 4716.7 | 3337.2 |
| 80° | 926.9 | 940.9 | 964.1 | 939.3 | 913.0 | 536.3 | 469.7 | 666.5 | *675.8* | 2647.4 | 2204.1 |
| 82.5° | 469.7 | 469.7 | 458.8 | 409.2 | 353.4 | 348.8 | 373.6 | 483.6 | *489.8* | 1339.2 | 1037.0 |
| 85° | 283.7 | 299.2 | 305.4 | 277.5 | 254.2 | 234.1 | 285.2 | 384.4 | *398.4* | 519.3 | 241.8 |
| 87.5° | 63.6 | 65.1 | 71.3 | 94.6 | 138.0 | 187.6 | 265.1 | 351.9 | *358.1* | 333.3 | 29.5 |
| 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: P1047819
CATALOG NUMBER: GALN-SA4C-750-U-T2BC

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 | 138.0 |
| 2.5° | 139.5 | 136.4 | 134.9 | 130.2 | 125.6 | 120.9 | 117.8 | 116.3 | 117.8 | 119.4 | 119.4 |
| 5° | 138.0 | 133.3 | 125.6 | 117.8 | 111.6 | 105.4 | 99.2 | 97.7 | 97.7 | 99.2 | 99.2 |
| 7.5° | 138.0 | 130.2 | 119.4 | 110.1 | 100.8 | 91.5 | 86.8 | 83.7 | 85.3 | 85.3 | 85.3 |
| 10° | 138.0 | 128.7 | 114.7 | 100.8 | 89.9 | 79.1 | 71.3 | 68.2 | 68.2 | 68.2 | 68.2 |
| 12.5° | 136.4 | 127.1 | 110.1 | 93.0 | 77.5 | 65.1 | 55.8 | 51.2 | 52.7 | 52.7 | 52.7 |
| 15° | 133.3 | 122.5 | 103.9 | 79.1 | 62.0 | 49.6 | 40.3 | 35.7 | 37.2 | 40.3 | 41.9 |
| 17.5° | 128.7 | 117.8 | 93.0 | 66.7 | 49.6 | 37.2 | 27.9 | 24.8 | 26.4 | 31.0 | 31.0 |
| 20° | 127.1 | 113.2 | 82.2 | 54.3 | 37.2 | 26.4 | 18.6 | 15.5 | 17.1 | 23.3 | 24.8 |
| 22.5° | 127.1 | 110.1 | 74.4 | 45.0 | 27.9 | 17.1 | 10.9 | 6.2 | 6.2 | 10.9 | 10.9 |
| 25° | 128.7 | 108.5 | 68.2 | 37.2 | 20.2 | 12.4 | 6.2 | 3.1 | 6.2 | 17.1 | 20.2 |
| 27.5° | 131.8 | 107.0 | 65.1 | 31.0 | 15.5 | 10.9 | 4.7 | 10.9 | 18.6 | 18.6 | 18.6 |
| 30° | 134.9 | 103.9 | 60.5 | 26.4 | 14.0 | 7.8 | 7.8 | 15.5 | 15.5 | 18.6 | 20.2 |
| 32.5° | 139.5 | 102.3 | 57.4 | 23.3 | 10.9 | 6.2 | 10.9 | 9.3 | 9.3 | 10.9 | 12.4 |
| 35° | 148.8 | 103.9 | 54.3 | 23.3 | 10.9 | 7.8 | 9.3 | 4.7 | 3.1 | 3.1 | 3.1 |
| 37.5° | 161.2 | 105.4 | 49.6 | 20.2 | 9.3 | 9.3 | 4.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40° | 181.4 | 110.1 | 46.5 | 18.6 | 7.8 | 7.8 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 42.5° | 215.5 | 119.4 | 45.0 | 17.1 | 7.8 | 6.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45° | 283.7 | 141.1 | 41.9 | 15.5 | 7.8 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47.5° | 407.7 | 192.2 | 40.3 | 12.4 | 4.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50° | 595.2 | 260.4 | 38.8 | 10.9 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52.5° | 759.5 | 274.4 | 26.4 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55° | 778.1 | 189.1 | 20.2 | 6.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57.5° | 620.0 | 122.5 | 17.1 | 4.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60° | 469.7 | 93.0 | 15.5 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61° | *451.1* | *83.7* | *15.5* | *1.6* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* |
| 62.5° | 497.6 | 72.9 | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65° | 809.1 | 60.5 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.5° | 1405.9 | 52.7 | 10.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 1776.3 | 49.6 | 9.3 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1548.5 | 45.0 | 9.3 | 3.1 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 931.6 | 38.8 | 9.3 | 6.2 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 488.3 | 29.5 | 9.3 | 7.8 | 4.7 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 237.2 | 26.4 | 10.9 | 7.8 | 6.2 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 93.0 | 21.7 | 12.4 | 10.9 | 7.8 | 4.7 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 41.9 | 18.6 | 14.0 | 12.4 | 10.9 | 6.2 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 21.7 | 17.1 | 15.5 | 14.0 | 10.9 | 7.8 | 3.1 | 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: SP1-2407-184-6

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-750-U-5WQ

Data in this report applies to families of products including GSS-SB1A-750-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

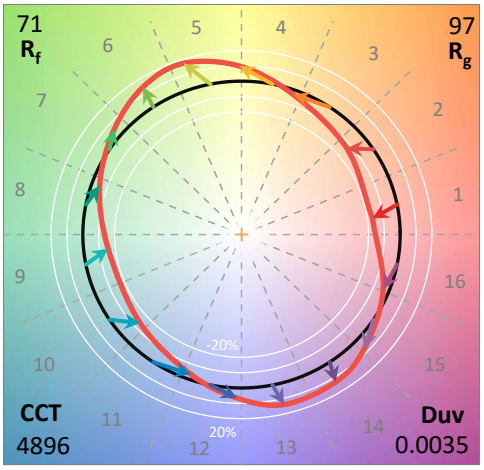
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-6 |
| 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-750-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 5000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 4896 |
| CIE u': | 0.2101 |
| CIE v': | 0.4901 |
| Duv: | 0.0035 |
| CIE x: | 0.3489 |
| CIE y: | 0.3618 |
| CIE z: | 0.2893 |
| Peak Wavelength (nm): | 443 |
| Dominant Wavelength (nm): | 570 |
| Purity: | 13.25435 |
| Rf: | 70.7 |
| Rg: | 96.8 |

| | |
|---|---|
| CRI (Ra): | 70.2 |
| R1: | 68.1 |
| R2: | 73.9 |
| R3: | 79.4 |
| R4: | 72.1 |
| R5: | 69.2 |
| R6: | 65.7 |
| R7: | 78.1 |
| R8: | 55.3 |
| R9: | -35.1 |
| R10: | 39.3 |
| R11: | 71.1 |
| R12: | 43.8 |
| R13: | 68.1 |
| R14: | 88.4 |
| R15: | 59.7 |




## Test Conditions

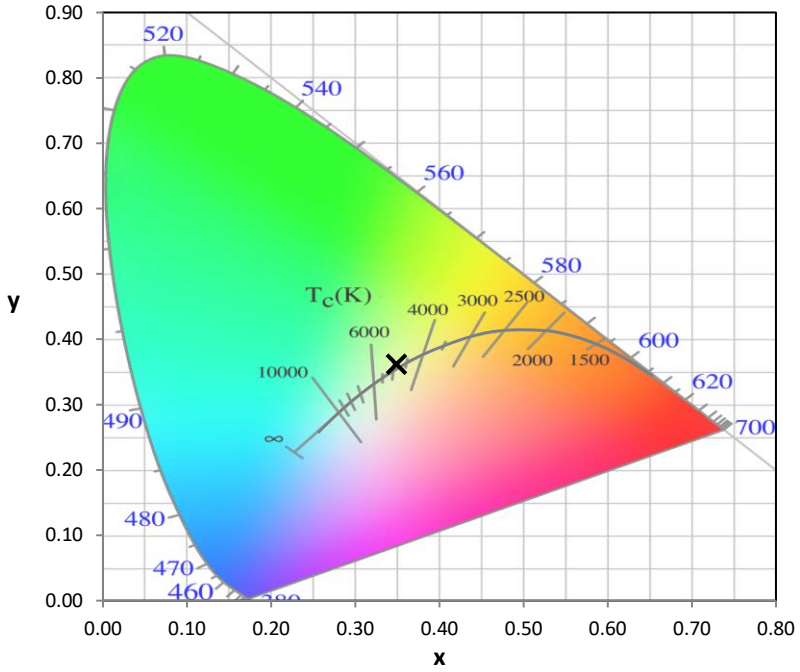
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-6

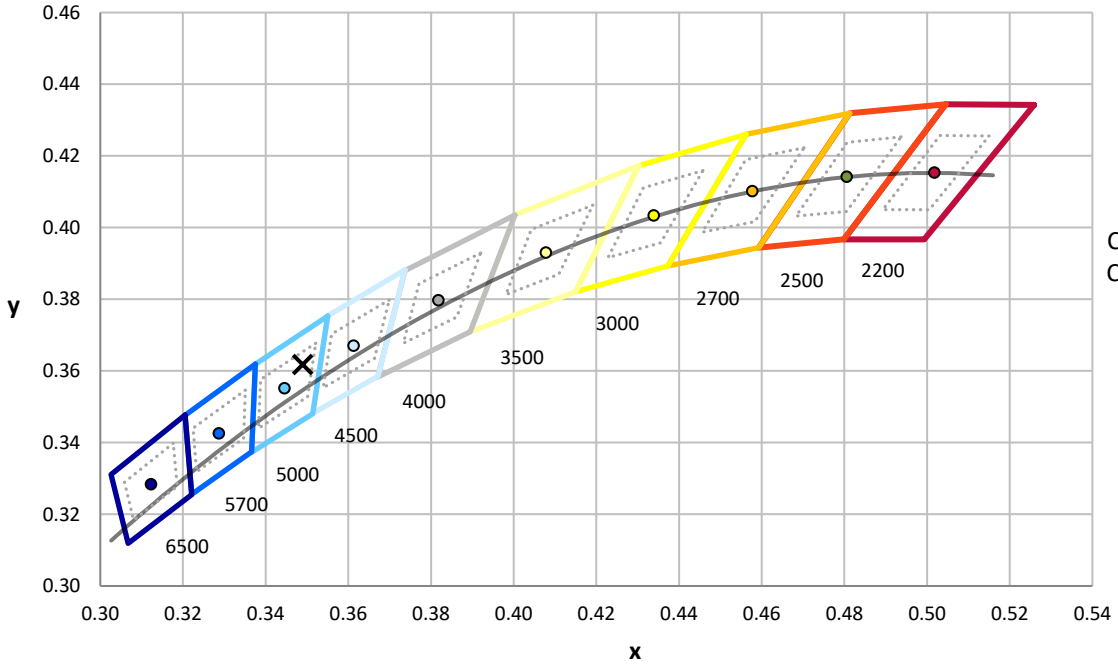
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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

REPORT NUMBER: SP1-2407-184-6

## CIE 1931 Chromaticity Diagram




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




CCT = 4896K
CIE x = 0.3489
CIE y = 0.3618
Duv = 0.0035

Point lies inside the ANSI 5000K 4-step quadrangle

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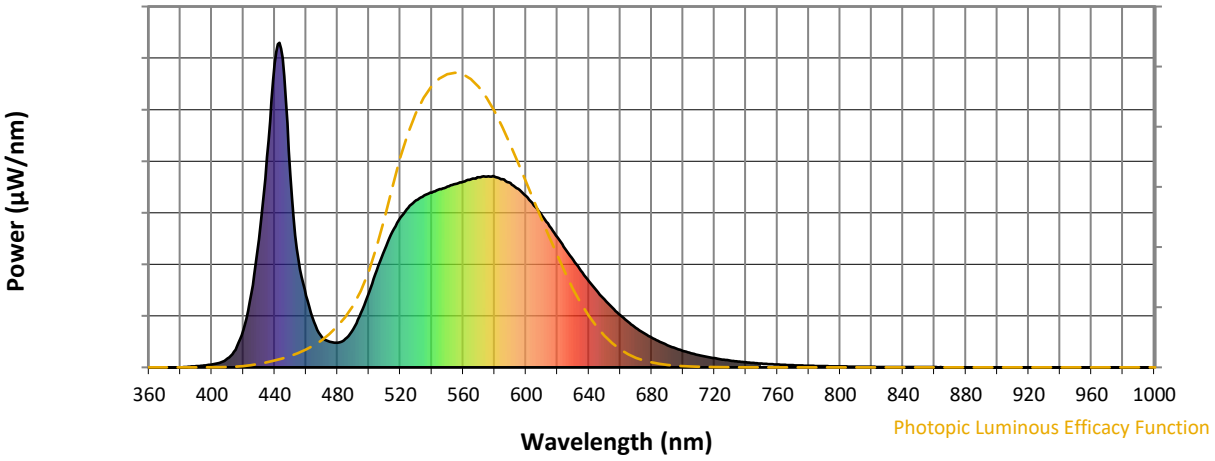
## Photopic Flux vs. Wavelength




## 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 | 118 | NR | 620 | 401 | NR | 750 | 12 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 168 | NR | 625 | 365 | NR | 755 | 10 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 230 | NR | 630 | 331 | NR | 760 | 9 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 299 | NR | 635 | 298 | NR | 765 | 8 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 362 | NR | 640 | 266 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 418 | NR | 645 | 236 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 461 | NR | 650 | 209 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 491 | NR | 655 | 184 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 514 | NR | 660 | 160 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 14 | NR | 535 | 530 | NR | 665 | 140 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 27 | NR | 540 | 539 | NR | 670 | 122 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 55 | NR | 545 | 549 | NR | 675 | 106 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 115 | NR | 550 | 557 | NR | 680 | 92 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 226 | NR | 555 | 565 | NR | 685 | 79 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 395 | NR | 560 | 572 | NR | 690 | 68 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 648 | NR | 565 | 580 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 937 | NR | 570 | 586 | NR | 700 | 51 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 953 | NR | 575 | 588 | NR | 705 | 44 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 591 | NR | 580 | 588 | NR | 710 | 38 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 334 | NR | 585 | 580 | NR | 715 | 32 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 221 | NR | 590 | 568 | NR | 720 | 28 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 140 | NR | 595 | 550 | NR | 725 | 24 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 93 | NR | 600 | 527 | NR | 730 | 21 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 79 | NR | 605 | 499 | NR | 735 | 18 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 469 | NR | 740 | 15 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 87 | NR | 615 | 435 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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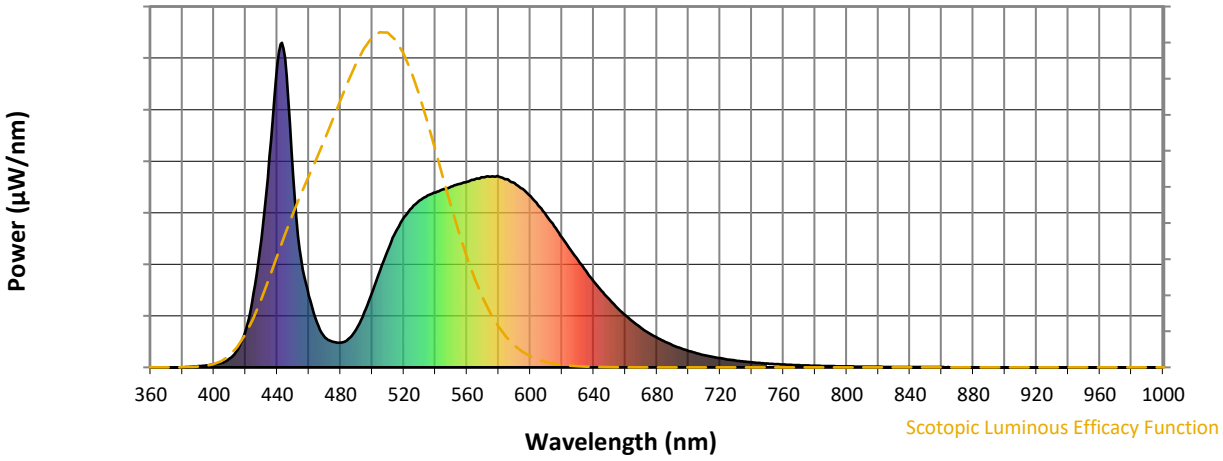
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.7**

| 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 | 118 | NR | 620 | 401 | NR | 750 | 12 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 168 | NR | 625 | 365 | NR | 755 | 10 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 230 | NR | 630 | 331 | NR | 760 | 9 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 299 | NR | 635 | 298 | NR | 765 | 8 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 362 | NR | 640 | 266 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 418 | NR | 645 | 236 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 461 | NR | 650 | 209 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 491 | NR | 655 | 184 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 514 | NR | 660 | 160 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 14 | NR | 535 | 530 | NR | 665 | 140 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 27 | NR | 540 | 539 | NR | 670 | 122 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 55 | NR | 545 | 549 | NR | 675 | 106 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 115 | NR | 550 | 557 | NR | 680 | 92 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 226 | NR | 555 | 565 | NR | 685 | 79 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 395 | NR | 560 | 572 | NR | 690 | 68 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 648 | NR | 565 | 580 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 937 | NR | 570 | 586 | NR | 700 | 51 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 953 | NR | 575 | 588 | NR | 705 | 44 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 591 | NR | 580 | 588 | NR | 710 | 38 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 334 | NR | 585 | 580 | NR | 715 | 32 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 221 | NR | 590 | 568 | NR | 720 | 28 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 140 | NR | 595 | 550 | NR | 725 | 24 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 93 | NR | 600 | 527 | NR | 730 | 21 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 79 | NR | 605 | 499 | NR | 735 | 18 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 469 | NR | 740 | 15 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 87 | NR | 615 | 435 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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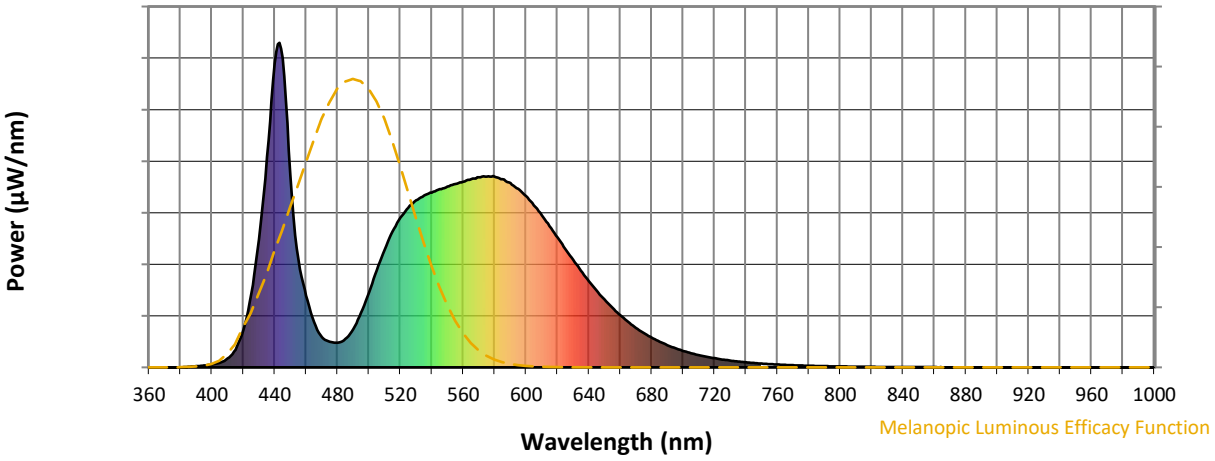
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.37**

| 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 | 118 | NR | 620 | 401 | NR | 750 | 12 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 168 | NR | 625 | 365 | NR | 755 | 10 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 230 | NR | 630 | 331 | NR | 760 | 9 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 299 | NR | 635 | 298 | NR | 765 | 8 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 362 | NR | 640 | 266 | NR | 770 | 6 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 418 | NR | 645 | 236 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 461 | NR | 650 | 209 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 491 | NR | 655 | 184 | NR | 785 | 4 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 514 | NR | 660 | 160 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 14 | NR | 535 | 530 | NR | 665 | 140 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 27 | NR | 540 | 539 | NR | 670 | 122 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 55 | NR | 545 | 549 | NR | 675 | 106 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 115 | NR | 550 | 557 | NR | 680 | 92 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 226 | NR | 555 | 565 | NR | 685 | 79 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 395 | NR | 560 | 572 | NR | 690 | 68 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 648 | NR | 565 | 580 | NR | 695 | 59 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 937 | NR | 570 | 586 | NR | 700 | 51 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 953 | NR | 575 | 588 | NR | 705 | 44 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 591 | NR | 580 | 588 | NR | 710 | 38 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 334 | NR | 585 | 580 | NR | 715 | 32 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 221 | NR | 590 | 568 | NR | 720 | 28 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 140 | NR | 595 | 550 | NR | 725 | 24 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 93 | NR | 600 | 527 | NR | 730 | 21 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 79 | NR | 605 | 499 | NR | 735 | 18 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 469 | NR | 740 | 15 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 87 | NR | 615 | 435 | NR | 745 | 13 | NR | 875 | 0 | NR | | | |

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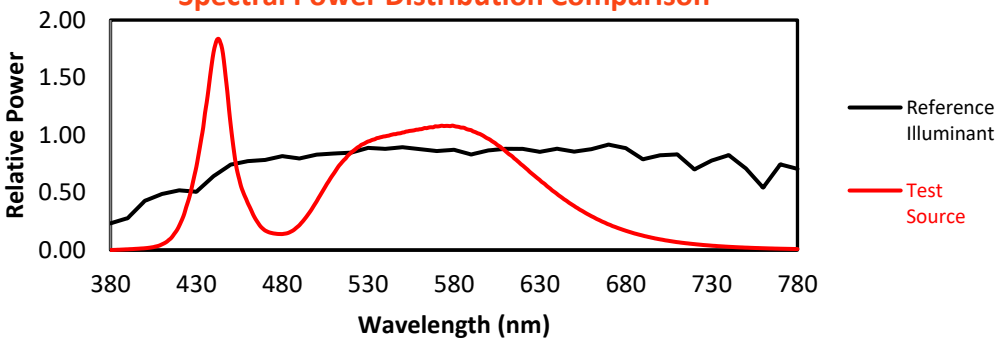
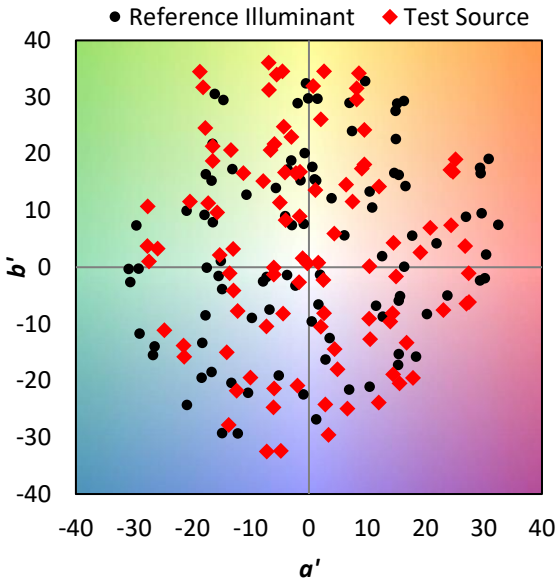
## Summary

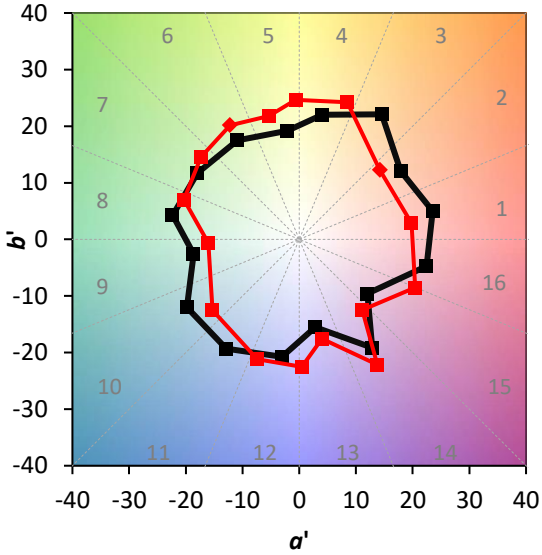
$R_f$ = 70.7
$R_g$ = 96.8
CIE $R_a$ = 70.2
$R_9$ = -35.1

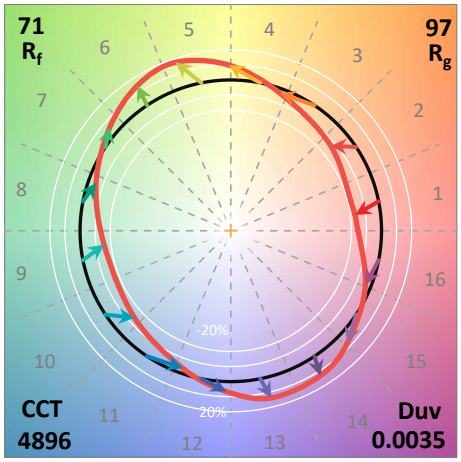
## Spectral Power Distribution Comparison

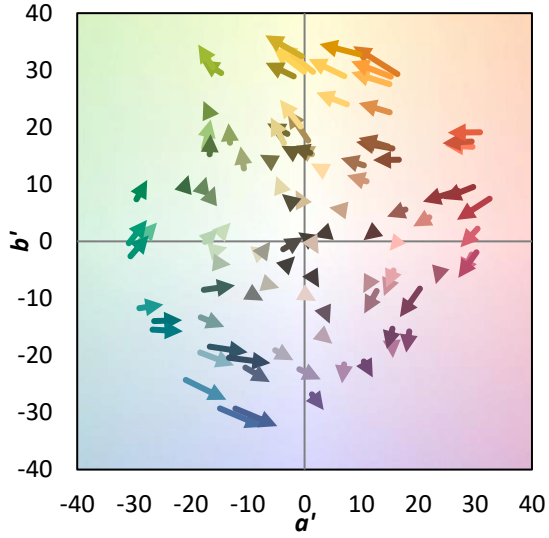



## Color Vector Graphics



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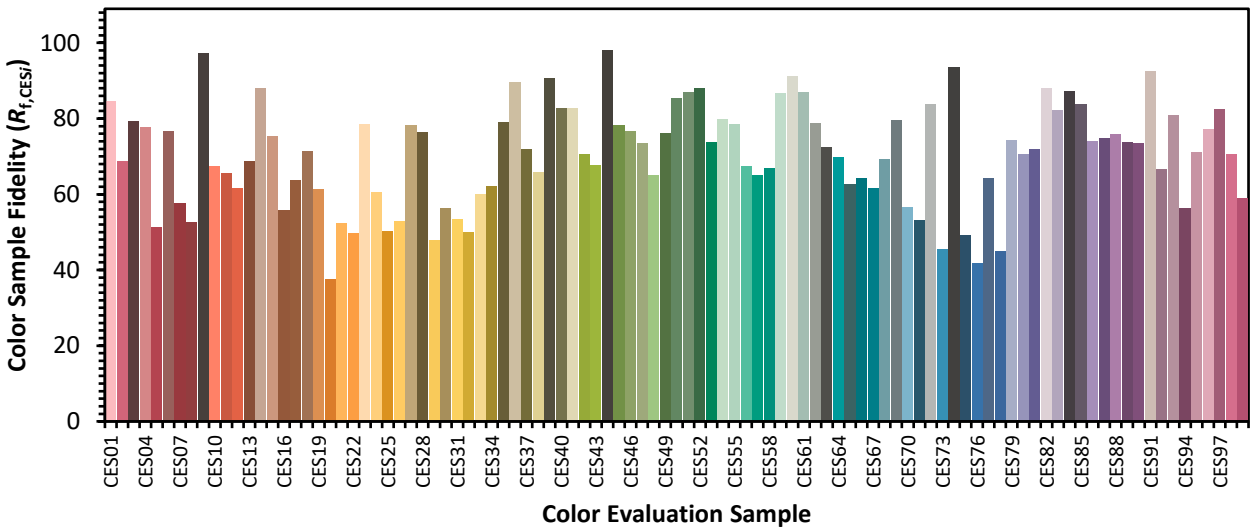
## Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 53 | CES51 = 87 | CES76 = 42 |
| CES02 = 59 | CES27 = 78 | CES52 = 88 | CES77 = 64 |
| CES03 = 30 | CES28 = 76 | CES53 = 74 | CES78 = 45 |
| CES04 = 69 | CES29 = 48 | CES54 = 80 | CES79 = 74 |
| CES05 = 46 | CES30 = 56 | CES55 = 79 | CES80 = 71 |
| CES06 = 50 | CES31 = 54 | CES56 = 68 | CES81 = 72 |
| CES07 = 39 | CES32 = 50 | CES57 = 65 | CES82 = 88 |
| CES08 = 38 | CES33 = 60 | CES58 = 67 | CES83 = 82 |
| CES09 = 29 | CES34 = 62 | CES59 = 87 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 91 | CES85 = 84 |
| CES11 = 56 | CES36 = 90 | CES61 = 87 | CES86 = 74 |
| CES12 = 61 | CES37 = 72 | CES62 = 79 | CES87 = 75 |
| CES13 = 41 | CES38 = 66 | CES63 = 72 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 70 | CES89 = 74 |
| CES15 = 70 | CES40 = 83 | CES65 = 63 | CES90 = 73 |
| CES16 = 46 | CES41 = 83 | CES66 = 64 | CES91 = 92 |
| CES17 = 49 | CES42 = 70 | CES67 = 62 | CES92 = 67 |
| CES18 = 55 | CES43 = 68 | CES68 = 69 | CES93 = 81 |
| CES19 = 71 | CES44 = 98 | CES69 = 80 | CES94 = 56 |
| CES20 = 64 | CES45 = 78 | CES70 = 56 | CES95 = 71 |
| CES21 = 85 | CES46 = 77 | CES71 = 53 | CES96 = 77 |
| CES22 = 77 | CES47 = 73 | CES72 = 84 | CES97 = 82 |
| CES23 = 91 | CES48 = 65 | CES73 = 46 | CES98 = 71 |
| CES24 = 90 | CES49 = 76 | CES74 = 94 | CES99 = 59 |
| CES25 = 71 | CES50 = 85 | CES75 = 49 | |



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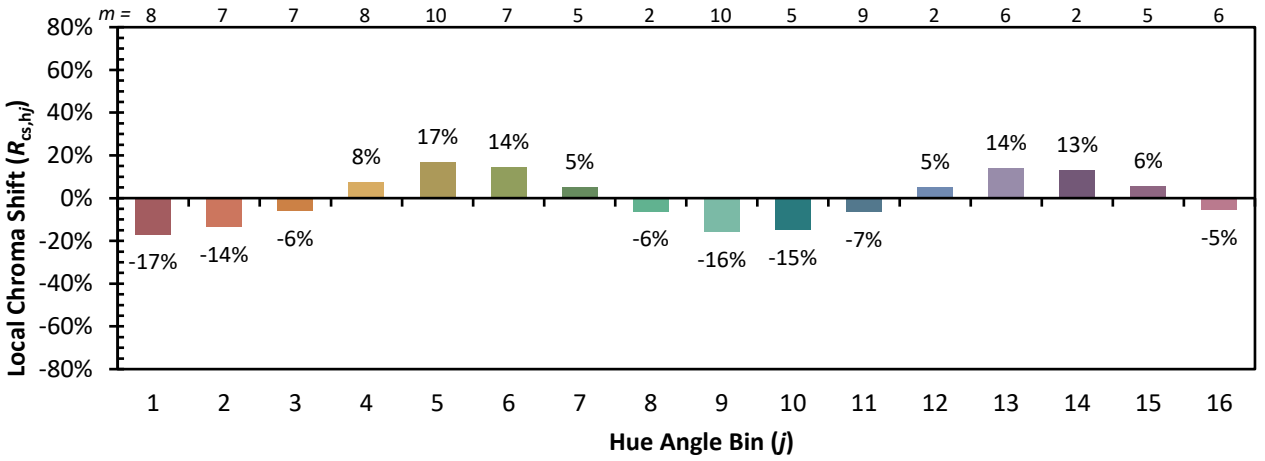
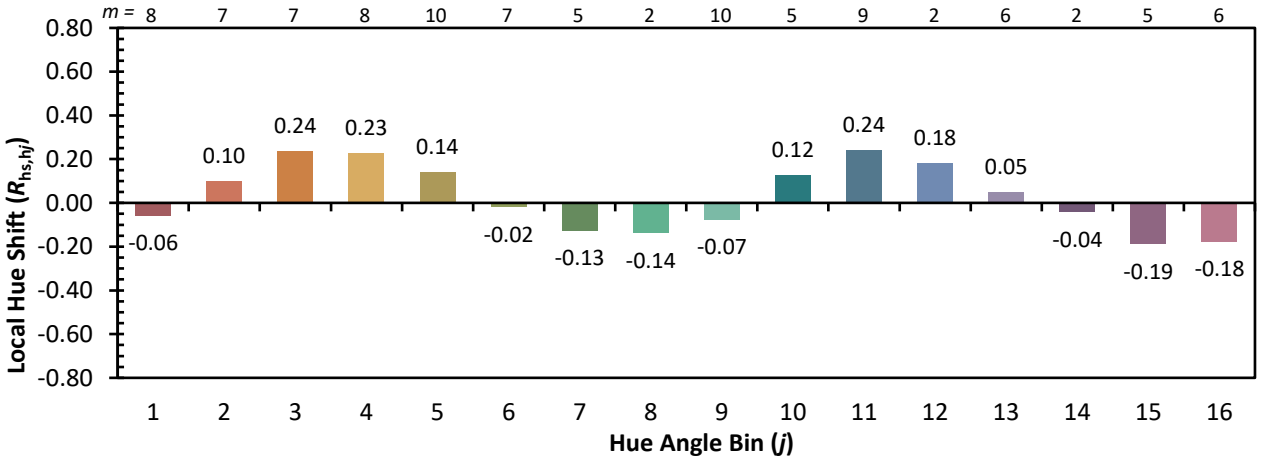
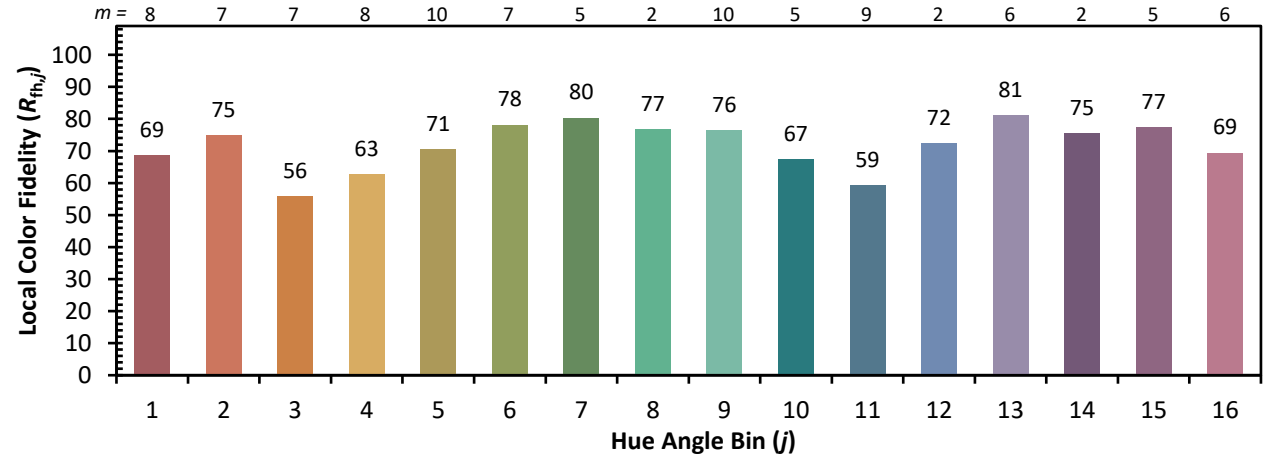
## Color Rendition by Hue-Angle Bin



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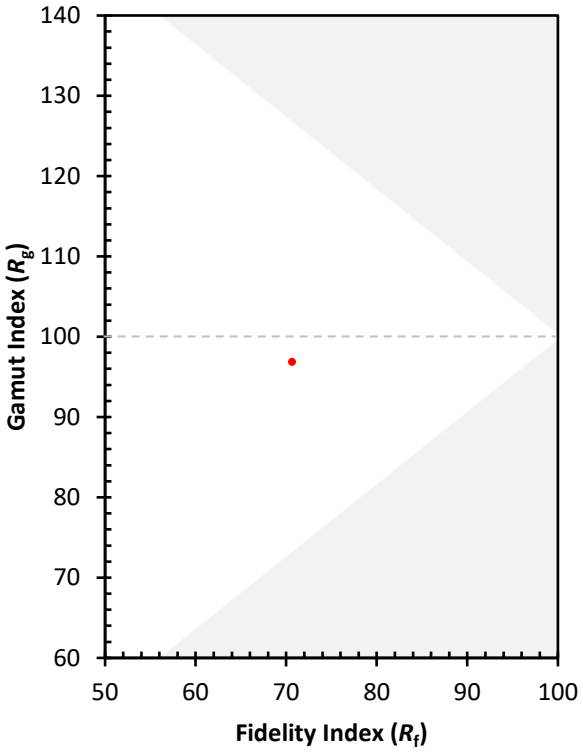
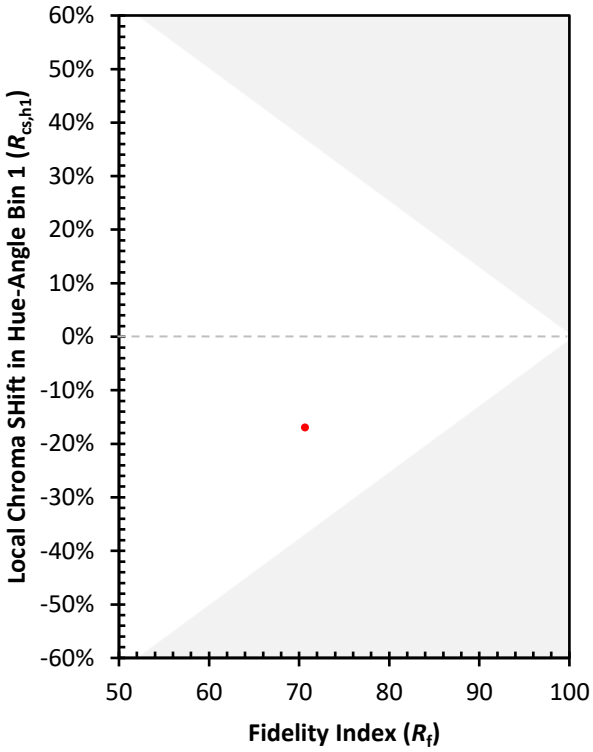
## Measure Comparisons

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