Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1457518

Luminaire Tested: GLAN-SB9D-740-U-T2LG-HSS

Issue Date: 05/20/2026

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1457518 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/21/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB9D-740-U-T2LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 9xLight Square PACKAGE 70CRI 4000K FIXTURE w/ TYPE II LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (234) 4000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 71030.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 107.9 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B4 - U0 - G5 |

| | |
|---|---|
| Input Watts (W): | 658 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.97 |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1457518
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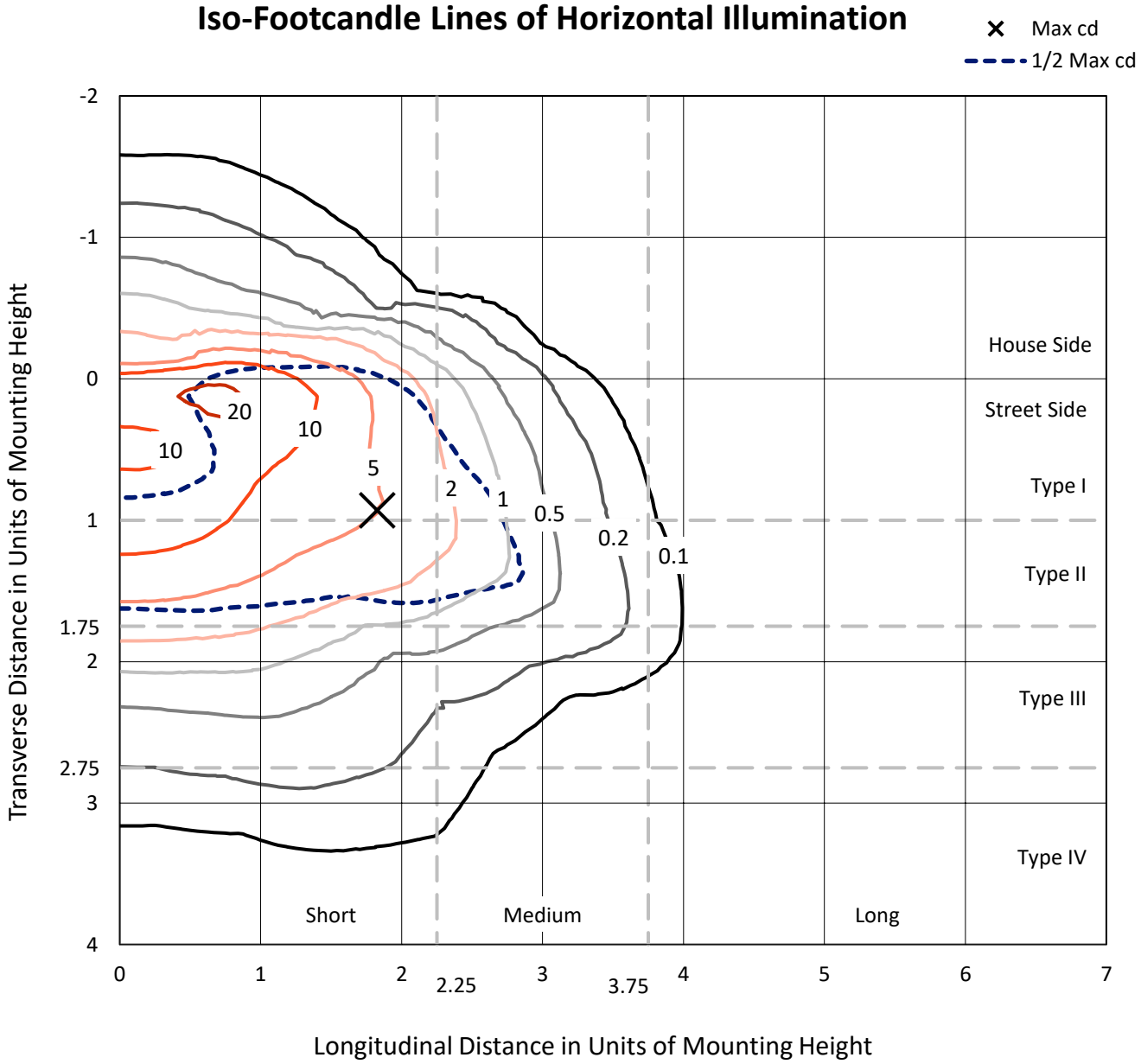
## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 22.6 fc
Type II - Short - N/A

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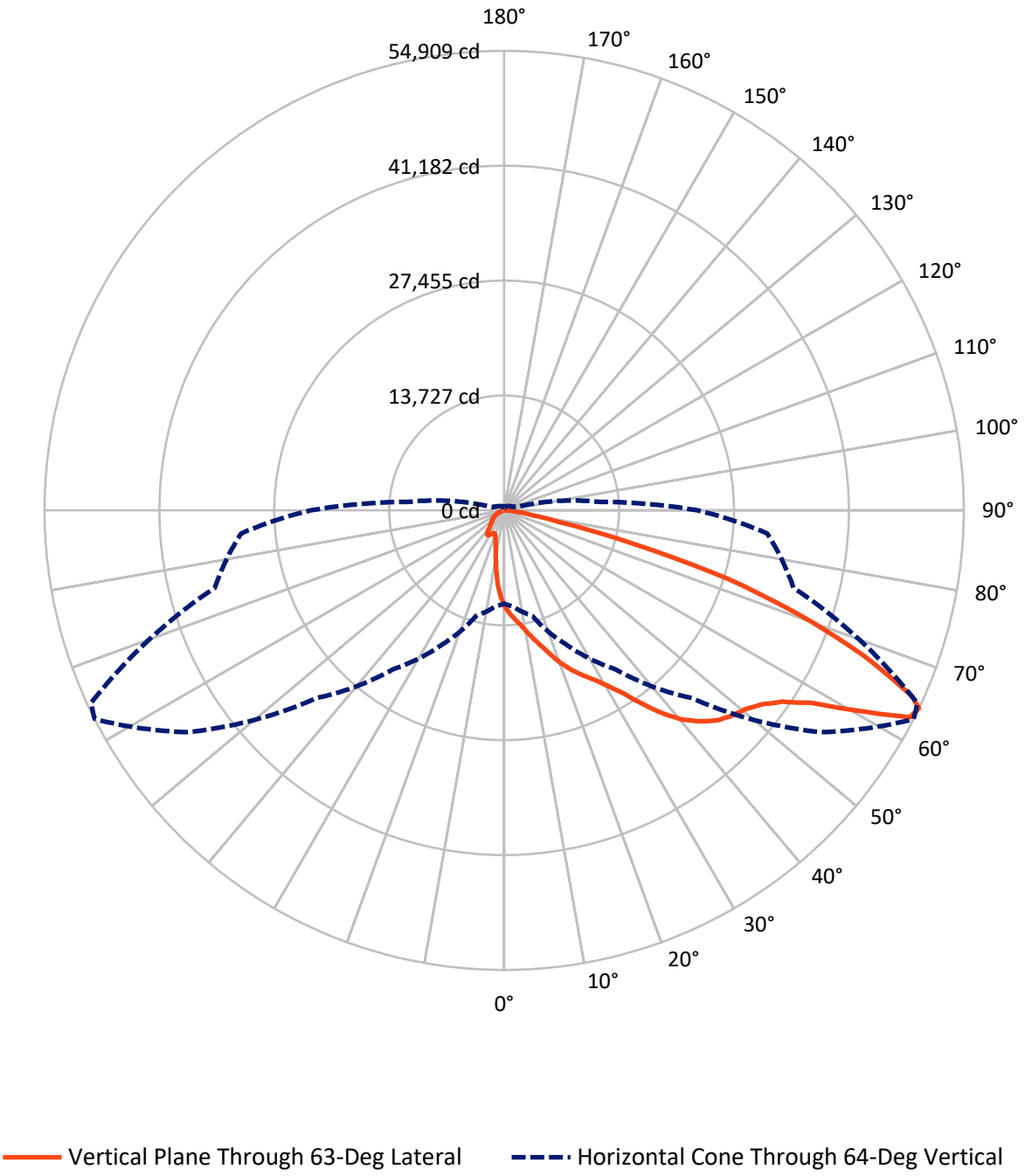
## Luminous Intensity Polar Plot



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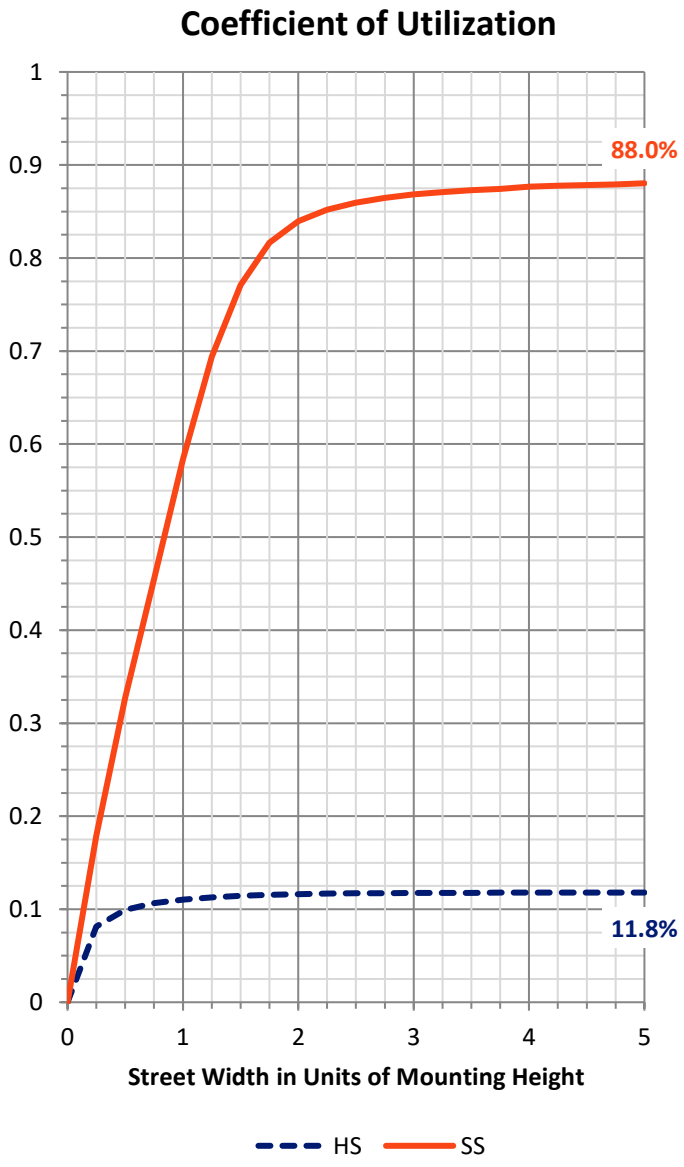
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 8429.0 | 0.0 | 8429.0 |
| | % Fixture | 11.9 | 0.0 | 11.9 |
| **Street Side** | Lumens | 62601.2 | 0.0 | 62601.2 |
| | % Fixture | 88.1 | 0.0 | 88.1 |
| **Total** | Lumens | 71030.2 | 0.0 | 71030.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 967.1 | 1.4 |
| 10°-20° | 2717.7 | 3.8 |
| 20°-30° | 4840.4 | 6.8 |
| 30°-40° | 9245.1 | 13.0 |
| 40°-50° | 15324.4 | 21.6 |
| 50°-60° | 19101.8 | 26.9 |
| 60°-70° | 14243.5 | 20.1 |
| 70°-80° | 4085.0 | 5.8 |
| 80°-90° | 505.1 | 0.7 |
| 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° | 71030.2 | 100.0 |
| 0°-180° | 71030.2 | 100.0 |



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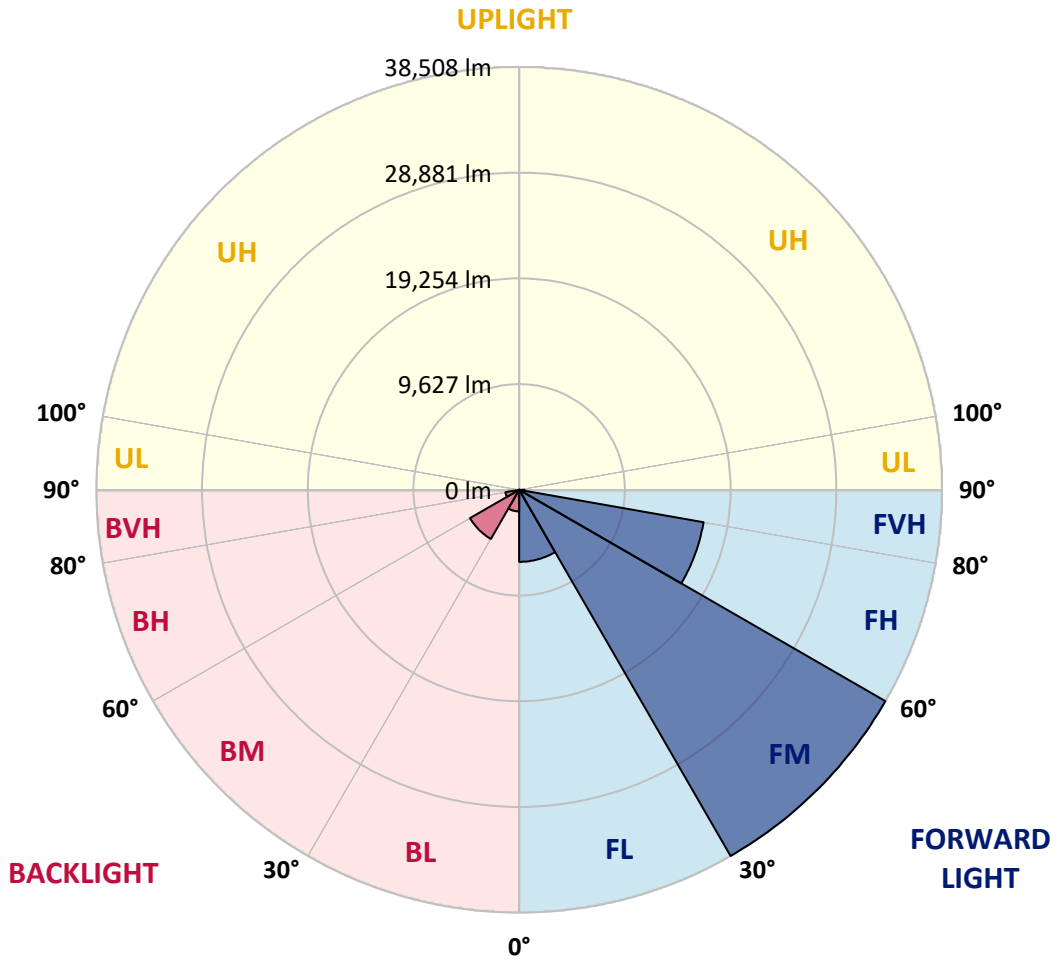
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 6558.8 | 9.2 | | | |
| FM | (30°-60°) | 38508.4 | 54.2 | | | |
| FH | (60°-80°) | 17053.8 | 24.0 | | | G5 |
| FVH | (80°-90°) | 480.3 | 0.7 | | | G3/500 |
| BL | (0°-30°) | 1966.5 | 2.8 | B3/2500 | | |
| BM | (30°-60°) | 5162.8 | 7.3 | B4/8500 | | |
| BH | (60°-80°) | 1274.8 | 1.8 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 24.8 | 0.0 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B4-U0-G5**
Type II Short



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REPORT NUMBER: P1457518
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 63° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | *11484.7* | 11484.7 | 11484.7 | 11484.7 |
| 2.5° | 12869.7 | 12827.1 | 12784.5 | 12720.6 | 12635.3 | 12550.1 | 12443.6 | *12294.4* | 12230.5 | 12017.4 | 11761.7 |
| 5° | 13530.3 | 13530.3 | 13508.9 | 13466.3 | 13423.7 | 13338.5 | 13210.6 | *13018.9* | 12933.6 | 12635.3 | 12187.9 |
| 7.5° | 13700.7 | 13722.0 | 13785.9 | 13871.2 | 13999.0 | 13977.7 | 13977.7 | *13764.6* | 13722.0 | 13402.4 | 12805.8 |
| 10° | 13402.4 | 13423.7 | 13594.2 | 13828.6 | 14212.1 | 14574.3 | 14830.0 | *14702.2* | 14638.2 | 14318.6 | 13572.9 |
| 12.5° | 12976.3 | 12976.3 | 13253.3 | 13615.5 | 14212.1 | 14893.9 | 15639.7 | *15767.5* | 15788.8 | 15426.6 | 14531.7 |
| 15° | 11868.3 | 11910.9 | 12358.3 | 13082.8 | 14062.9 | 15128.3 | 16385.5 | *16875.5* | 17003.4 | 16769.0 | 15703.6 |
| 17.5° | 10398.1 | 10440.7 | 10888.1 | 11868.3 | 13338.5 | 15128.3 | 17024.7 | *18154.0* | 18324.4 | 18367.1 | 17195.1 |
| 20° | 9780.1 | 9780.1 | 10035.8 | 10781.6 | 12315.7 | 14723.5 | 17408.2 | *19517.7* | 19901.2 | 20370.0 | 18835.8 |
| 22.5° | 9865.4 | 9865.4 | 10014.5 | 10440.7 | 11676.5 | 14169.5 | 17642.6 | *20732.2* | 21520.6 | 22713.8 | 20945.3 |
| 25° | 10334.1 | 10334.1 | 10462.0 | 10739.0 | 11740.4 | 14084.2 | 18090.1 | *21818.9* | 23076.0 | 25334.6 | 23353.0 |
| 27.5° | 11079.9 | 11058.6 | 11165.1 | 11442.1 | 12358.3 | 14489.1 | 18835.8 | *22905.5* | 24311.8 | 28275.0 | 26123.0 |
| 30° | 12166.6 | 12102.7 | 12145.3 | 12464.9 | 13359.8 | 15426.6 | 19922.5 | *24290.5* | 25718.1 | 31492.5 | 29191.3 |
| 32.5° | 14680.9 | 14659.6 | 14041.6 | 13871.2 | 14830.0 | 16939.5 | 21414.0 | *26016.4* | 27614.5 | 34901.7 | 32344.8 |
| 35° | 19219.4 | 19517.7 | 18644.1 | 16406.8 | 16598.5 | 18963.7 | 23544.8 | *28360.3* | 29830.5 | 38523.9 | 35775.3 |
| 37.5° | 23821.8 | 23821.8 | 23459.5 | 20817.4 | 19475.0 | 21200.9 | 25846.0 | *30768.0* | 32302.2 | 41443.1 | 39077.9 |
| 40° | 27465.4 | 27657.1 | 27231.0 | 25249.4 | 23502.2 | 23757.8 | 28147.2 | *32877.5* | 34283.7 | 43232.9 | 41421.8 |
| 42.5° | 30171.4 | 30128.8 | 29958.3 | 28658.6 | 27678.4 | 27103.1 | 30235.3 | *34454.2* | 35796.6 | 44149.1 | 42892.0 |
| 45° | 33090.5 | 33090.5 | 32856.1 | 31790.8 | 30981.1 | 30491.0 | 31790.8 | *35775.3* | 37181.6 | 44703.1 | 43808.2 |
| 47.5° | 36137.5 | 36094.9 | 35860.5 | 34688.6 | 33815.0 | 33090.5 | 33367.5 | *36627.6* | 38033.9 | 44340.9 | 43957.3 |
| 50° | 36883.3 | 36840.6 | 37373.3 | 37415.9 | 36627.6 | 35242.6 | 34624.7 | *37352.0* | 38587.9 | 44362.2 | 44426.1 |
| 52.5° | 36009.7 | 36265.3 | 37053.7 | 38012.6 | 38907.5 | 37458.6 | 35967.0 | *38502.6* | 39781.1 | 44958.8 | 45598.0 |
| 55° | 33836.3 | 33942.8 | 35455.7 | 36989.8 | 39077.9 | 39589.3 | 38119.1 | *40335.1* | 41464.4 | 45534.1 | 46642.1 |
| 57.5° | 29787.9 | 30192.7 | 31812.1 | 34475.5 | 37650.3 | 39781.1 | 41869.2 | *43403.4* | 44255.7 | 45768.5 | 46066.8 |
| 60° | 22479.4 | 22692.5 | 26208.2 | 29660.0 | 34688.6 | 38246.9 | 45363.6 | *48602.4* | 48495.8 | 43126.4 | 42039.7 |
| 62.5° | 13679.4 | 13871.2 | 16385.5 | 21861.5 | 28189.8 | 35050.8 | 46535.6 | *54419.3* | 53844.0 | 38673.1 | 35391.7 |
| 64° | *11143.8* | *11506.0* | *13061.5* | *17749.1* | *23182.5* | *31705.5* | *46194.6* | *54909.4* | *54461.9* | *35796.6* | *31535.1* |
| 65° | 9524.4 | 10014.5 | 11612.6 | 15405.3 | 19709.4 | 28104.6 | 45257.1 | *53545.7* | 53247.4 | 34049.4 | 28339.0 |
| 67.5° | 5987.4 | 6221.8 | 8586.9 | 11974.8 | 13572.9 | 17983.5 | 38907.5 | *46301.2* | 46833.9 | 30341.9 | 20902.6 |
| 70° | 4453.3 | 4559.8 | 5902.2 | 9268.8 | 10589.8 | 10462.0 | 26719.6 | *37501.2* | 37629.0 | 24269.2 | 12614.0 |
| 72.5° | 3238.7 | 3260.0 | 4133.7 | 6861.0 | 8288.6 | 7138.0 | 14084.2 | *27870.2* | 26954.0 | 14212.1 | 6882.3 |
| 75° | 2152.1 | 2237.3 | 2897.8 | 4836.8 | 6456.2 | 5241.6 | 6413.6 | *15874.1* | 15597.1 | 6946.2 | 3941.9 |
| 77.5° | 1576.8 | 1598.1 | 1960.3 | 3238.7 | 5071.2 | 3856.7 | 3878.0 | *6839.7* | 7052.8 | 4133.7 | 2493.0 |
| 80° | 894.9 | 937.5 | 1278.4 | 1981.6 | 3302.7 | 2642.1 | 2173.4 | *3302.7* | 3792.7 | 2812.6 | 1662.0 |
| 82.5° | 532.7 | 575.3 | 916.2 | 1299.8 | 2258.6 | 1086.7 | 1108.0 | *1811.1* | 2258.6 | 2024.2 | 894.9 |
| 85° | 319.6 | 340.9 | 575.3 | 703.1 | 1342.4 | 724.5 | 404.8 | *894.9* | 1171.9 | 1193.2 | 490.1 |
| 87.5° | 213.1 | 213.1 | 319.6 | 298.3 | 383.5 | 340.9 | 170.5 | *234.4* | 298.3 | 404.8 | 191.8 |
| 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: P1457518
CATALOG NUMBER: GLAN-SB9D-740-U-T2LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 | 11484.7 |
| 2.5° | 11548.7 | 11420.8 | 11037.3 | 10525.9 | 10057.1 | 9694.9 | 9247.4 | 8949.1 | 8672.1 | 8672.1 | 8437.8 |
| 5° | 11825.7 | 11484.7 | 10547.2 | 9375.3 | 8118.2 | 6924.9 | 6157.9 | 5305.6 | 5028.6 | 4794.2 | 4836.8 |
| 7.5° | 12294.4 | 11676.5 | 10014.5 | 7905.1 | 5902.2 | 4623.7 | 3771.4 | 3387.9 | 3217.4 | 3110.9 | 3132.2 |
| 10° | 12869.7 | 12017.4 | 9375.3 | 6413.6 | 4346.7 | 3387.9 | 2983.0 | 2833.9 | 2770.0 | 2748.7 | 2748.7 |
| 12.5° | 13658.1 | 12422.3 | 8736.1 | 5156.4 | 3430.5 | 2919.1 | 2706.1 | 2620.8 | 2556.9 | 2514.3 | 2514.3 |
| 15° | 14595.6 | 12933.6 | 7990.3 | 4240.2 | 3004.4 | 2684.7 | 2514.3 | 2429.1 | 2343.8 | 2322.5 | 2322.5 |
| 17.5° | 15788.8 | 13466.3 | 7329.8 | 3643.6 | 2791.3 | 2514.3 | 2343.8 | 2237.3 | 2173.4 | 2152.1 | 2152.1 |
| 20° | 17109.9 | 14126.9 | 6669.2 | 3302.7 | 2642.1 | 2343.8 | 2173.4 | 2088.1 | 2024.2 | 1981.6 | 2002.9 |
| 22.5° | 18793.2 | 14957.9 | 6243.1 | 3132.2 | 2514.3 | 2194.7 | 2024.2 | 1939.0 | 1875.1 | 1832.4 | 1853.8 |
| 25° | 20647.0 | 16001.9 | 6008.7 | 3132.2 | 2429.1 | 2088.1 | 1896.4 | 1811.1 | 1747.2 | 1704.6 | 1704.6 |
| 27.5° | 22905.5 | 17173.8 | 6030.0 | 3260.0 | 2407.7 | 2002.9 | 1789.8 | 1704.6 | 1640.7 | 1576.8 | 1576.8 |
| 30° | 25398.5 | 18558.8 | 6264.4 | 3494.4 | 2450.4 | 1917.7 | 1704.6 | 1576.8 | 1534.1 | 1470.2 | 1470.2 |
| 32.5° | 28040.7 | 20156.9 | 6861.0 | 3792.7 | 2407.7 | 1811.1 | 1576.8 | 1470.2 | 1406.3 | 1363.7 | 1363.7 |
| 35° | 30831.9 | 21968.0 | 7606.8 | 3920.6 | 2194.7 | 1662.0 | 1470.2 | 1363.7 | 1321.1 | 1299.8 | 1278.4 |
| 37.5° | 33495.4 | 23544.8 | 8011.6 | 3664.9 | 1917.7 | 1534.1 | 1342.4 | 1235.8 | 1214.5 | 1171.9 | 1171.9 |
| 40° | 35562.2 | 24844.5 | 7777.2 | 3132.2 | 1768.5 | 1406.3 | 1235.8 | 1129.3 | 1086.7 | 1044.1 | 1044.1 |
| 42.5° | 36776.7 | 25313.3 | 6924.9 | 2663.4 | 1662.0 | 1278.4 | 1129.3 | 1022.8 | 980.1 | 958.8 | 958.8 |
| 45° | 37479.9 | 25249.4 | 5923.5 | 2386.4 | 1555.4 | 1171.9 | 1022.8 | 958.8 | 894.9 | 873.6 | 852.3 |
| 47.5° | 37458.6 | 24588.8 | 5199.0 | 2152.1 | 1448.9 | 1086.7 | 958.8 | 894.9 | 831.0 | 809.7 | 809.7 |
| 50° | 37309.4 | 23608.7 | 4389.3 | 1981.6 | 1363.7 | 1022.8 | 894.9 | 852.3 | 788.4 | 767.1 | 745.8 |
| 52.5° | 37671.6 | 23054.7 | 3664.9 | 1875.1 | 1257.1 | 980.1 | 873.6 | 809.7 | 724.5 | 703.1 | 703.1 |
| 55° | 38119.1 | 22735.1 | 2940.4 | 1768.5 | 1171.9 | 958.8 | 831.0 | 767.1 | 681.8 | 660.5 | 660.5 |
| 57.5° | 36819.3 | 21520.6 | 2429.1 | 1598.1 | 1065.4 | 916.2 | 788.4 | 745.8 | 660.5 | 596.6 | 596.6 |
| 60° | 32728.3 | 17791.8 | 2002.9 | 1406.3 | 980.1 | 852.3 | 745.8 | 681.8 | 596.6 | 511.4 | 511.4 |
| 62.5° | 26613.1 | 13572.9 | 1662.0 | 1193.2 | 916.2 | 788.4 | 681.8 | 617.9 | 511.4 | 404.8 | 404.8 |
| 64° | *23118.6* | *11527.4* | *1491.5* | *1044.1* | *873.6* | *724.5* | *617.9* | *554.0* | *447.5* | *340.9* | *319.6* |
| 65° | 20732.2 | 10185.0 | 1385.0 | 980.1 | 852.3 | 681.8 | 596.6 | 532.7 | 404.8 | 319.6 | 298.3 |
| 67.5° | 14595.6 | 6839.7 | 1108.0 | 809.7 | 745.8 | 575.3 | 511.4 | 447.5 | 362.2 | 277.0 | 255.7 |
| 70° | 8501.7 | 3878.0 | 873.6 | 681.8 | 575.3 | 447.5 | 426.1 | 404.8 | 319.6 | 213.1 | 213.1 |
| 72.5° | 4623.7 | 1939.0 | 660.5 | 554.0 | 447.5 | 319.6 | 362.2 | 319.6 | 255.7 | 170.5 | 149.2 |
| 75° | 2833.9 | 1193.2 | 490.1 | 404.8 | 298.3 | 234.4 | 277.0 | 234.4 | 149.2 | 106.5 | 85.2 |
| 77.5° | 1896.4 | 767.1 | 362.2 | 277.0 | 191.8 | 149.2 | 191.8 | 127.8 | 63.9 | 21.3 | 21.3 |
| 80° | 1171.9 | 532.7 | 234.4 | 170.5 | 106.5 | 63.9 | 42.6 | 21.3 | 21.3 | 0.0 | 0.0 |
| 82.5° | 511.4 | 340.9 | 127.8 | 85.2 | 42.6 | 21.3 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 277.0 | 106.5 | 42.6 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 85.2 | 42.6 | 21.3 | 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 |

Cooper Lighting Solutions Photometric Lab
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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: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

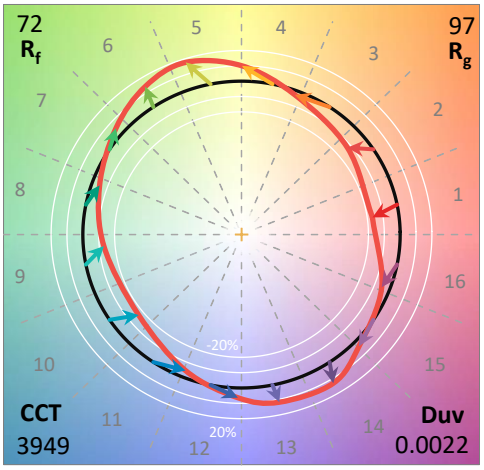
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-1 |
| 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-740-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3949 |
| CIE u': | 0.2248 |
| CIE v': | 0.5053 |
| Duv: | 0.0022 |
| CIE x: | 0.3844 |
| CIE y: | 0.3840 |
| CIE z: | 0.2316 |
| Peak Wavelength (nm): | 440 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 30.60026 |
| Rf: | 71.8 |
| Rg: | 96.5 |

| | |
|---|---|
| CRI (Ra): | 70.7 |
| R1: | 68.0 |
| R2: | 76.0 |
| R3: | 84.3 |
| R4: | 72.0 |
| R5: | 68.6 |
| R6: | 68.3 |
| R7: | 77.9 |
| R8: | 50.3 |
| R9: | -36.7 |
| R10: | 45.1 |
| R11: | 70.7 |
| R12: | 47.1 |
| R13: | 68.5 |
| R14: | 91.1 |
| R15: | 58.7 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 34M |
| Operation Time: | 1H 34M |
| 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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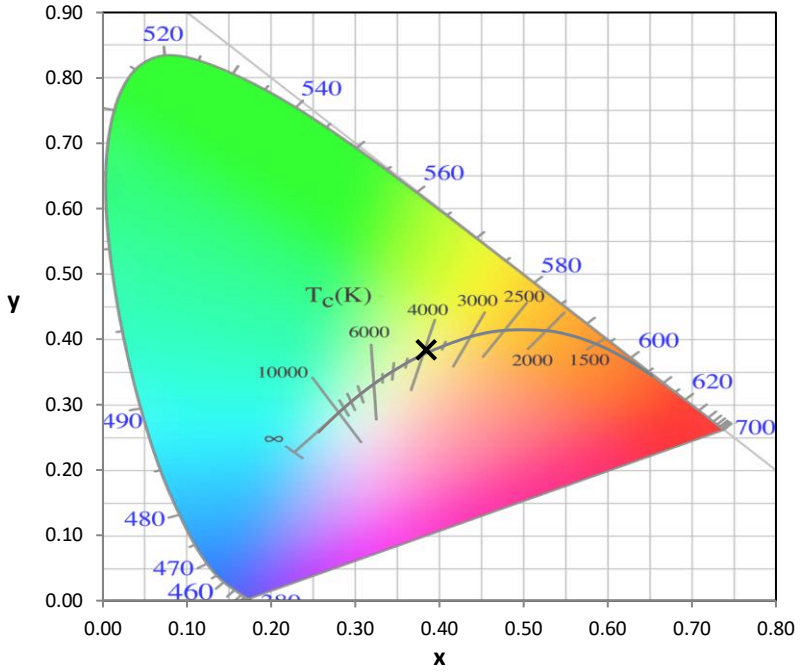
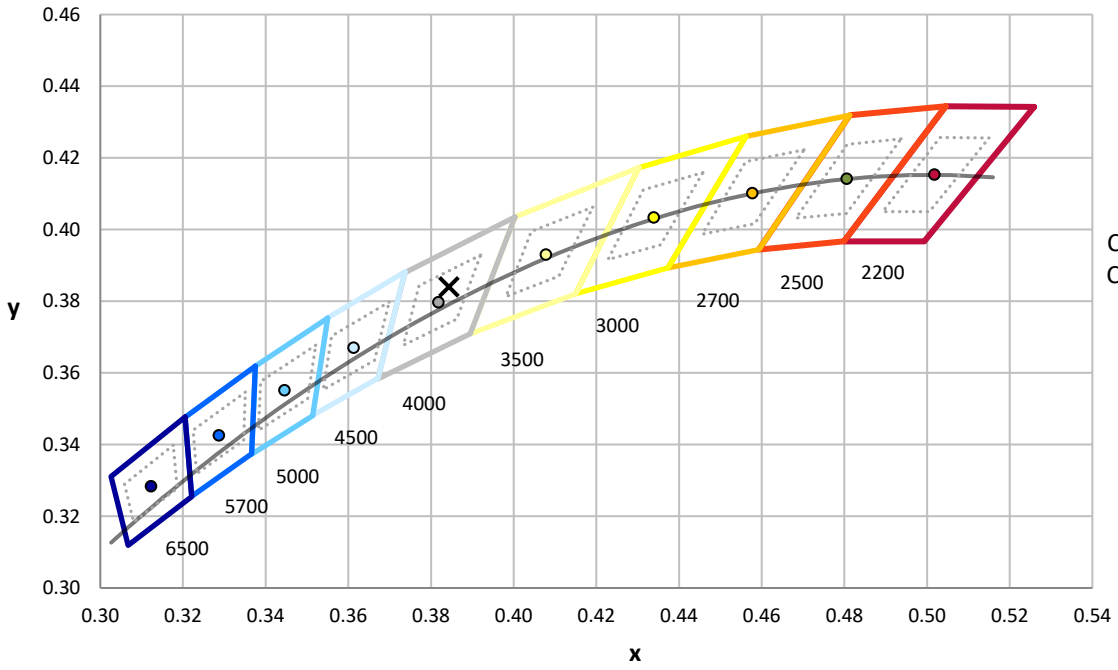
## CIE 1931 Chromaticity Diagram




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




CCT = 3949K
CIE x = 0.3844
CIE y = 0.3840
Duv = 0.0022

Point lies inside the ANSI 4000K 4-step quadrangle

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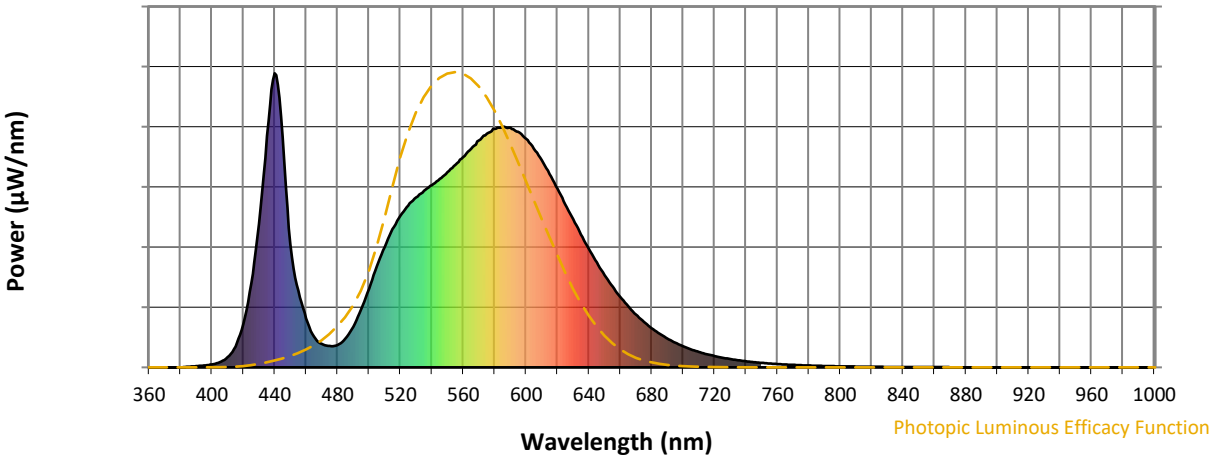
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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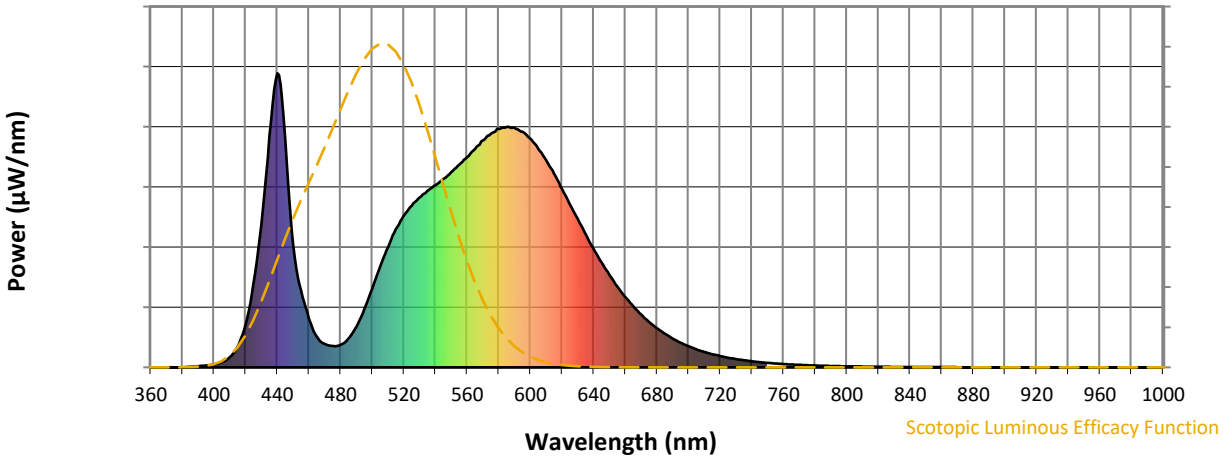
## Scotopic Flux vs. Wavelength

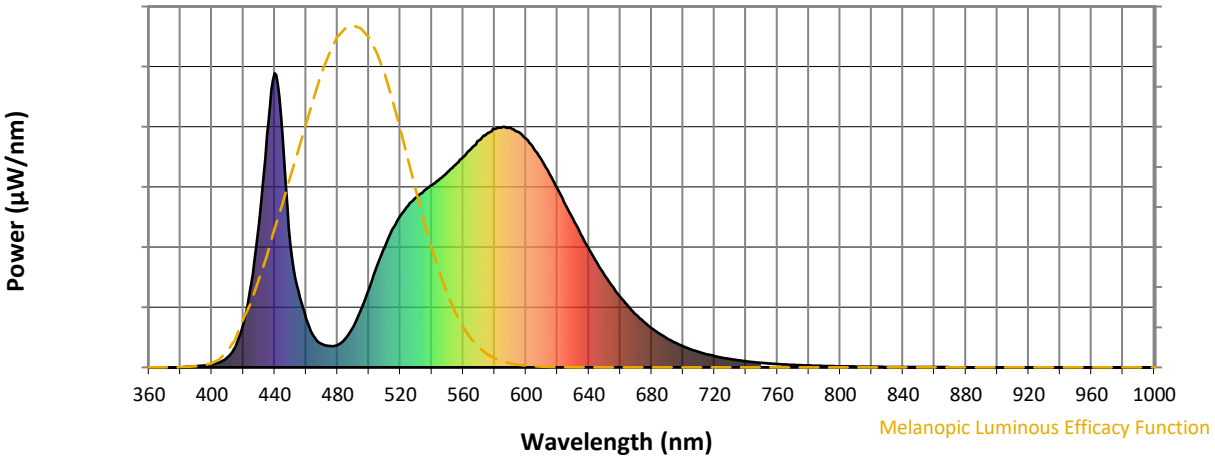



**Scotopic Lumens: NR** **S/P: 1.47**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-184-1

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.78**

| 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 | 139 | NR | 620 | 607 | NR | 750 | 15 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 198 | NR | 625 | 554 | NR | 755 | 13 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 267 | NR | 630 | 504 | NR | 760 | 11 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 343 | NR | 635 | 452 | NR | 765 | 10 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 410 | NR | 640 | 403 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 470 | NR | 645 | 357 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 4 | NR | 520 | 516 | NR | 650 | 314 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 7 | NR | 525 | 550 | NR | 655 | 275 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 10 | NR | 530 | 578 | NR | 660 | 240 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 17 | NR | 535 | 601 | NR | 665 | 208 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 35 | NR | 540 | 620 | NR | 670 | 179 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 70 | NR | 545 | 641 | NR | 675 | 155 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 147 | NR | 550 | 664 | NR | 680 | 133 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 285 | NR | 555 | 689 | NR | 685 | 114 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 487 | NR | 560 | 715 | NR | 690 | 98 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 787 | NR | 565 | 743 | NR | 695 | 84 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 1000 | NR | 570 | 771 | NR | 700 | 72 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 783 | NR | 575 | 794 | NR | 705 | 61 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 417 | NR | 580 | 811 | NR | 710 | 52 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 261 | NR | 585 | 817 | NR | 715 | 45 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 167 | NR | 590 | 815 | NR | 720 | 39 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 801 | NR | 725 | 33 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 777 | NR | 730 | 28 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 744 | NR | 735 | 24 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 76 | NR | 610 | 704 | NR | 740 | 21 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 98 | NR | 615 | 657 | NR | 745 | 18 | NR | 875 | 1 | NR | | | |

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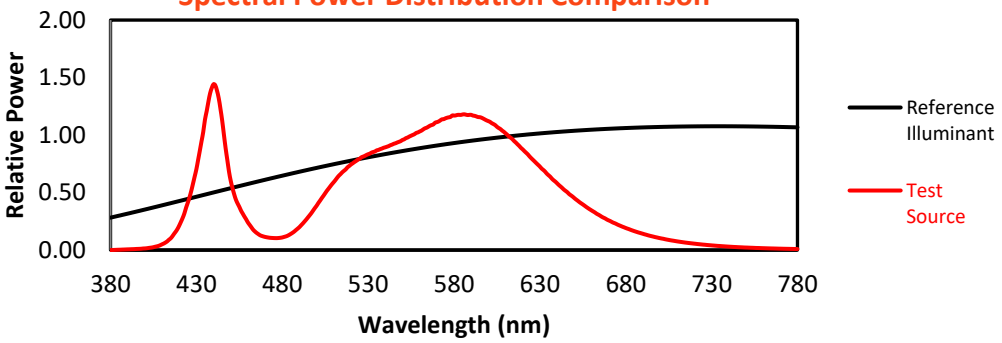
# TM-30-18

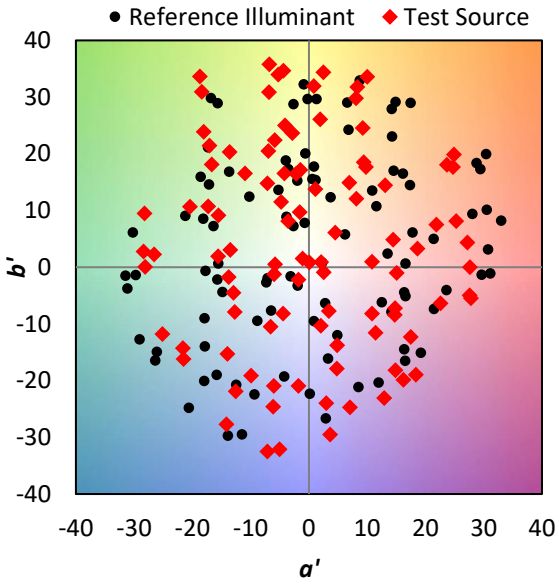
## Summary

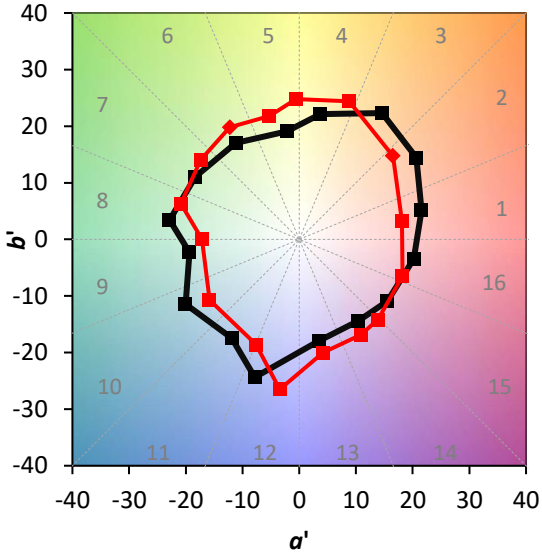
$R_f$ = 71.8
$R_g$ = 96.5
CIE $R_a$ = 70.7
$R_9$ = -36.7

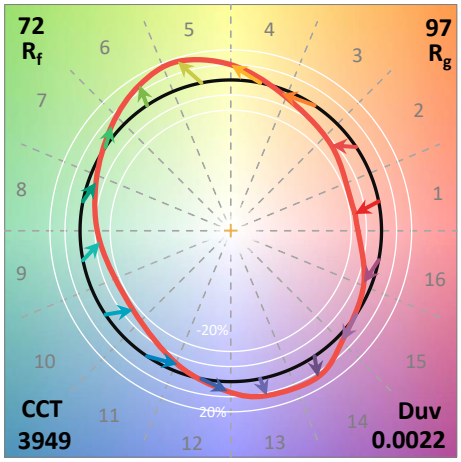
## Spectral Power Distribution Comparison

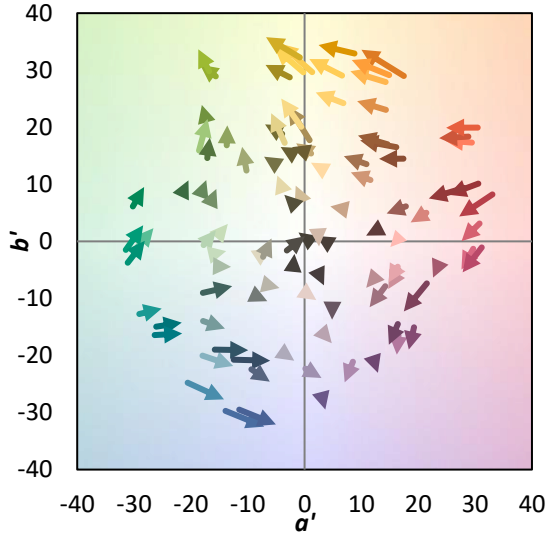



## Color Vector Graphics



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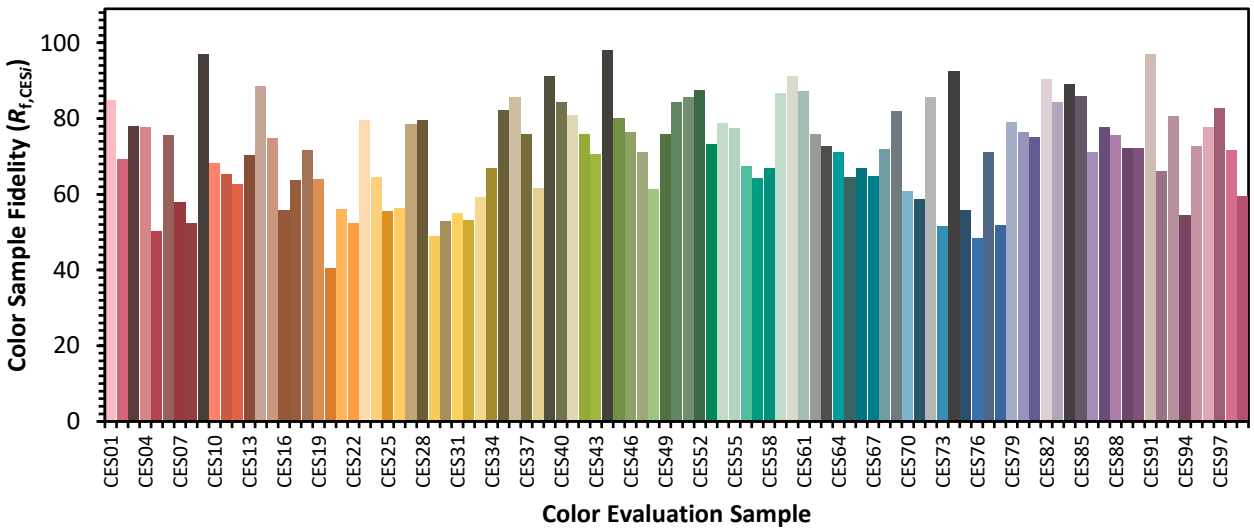
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 | |



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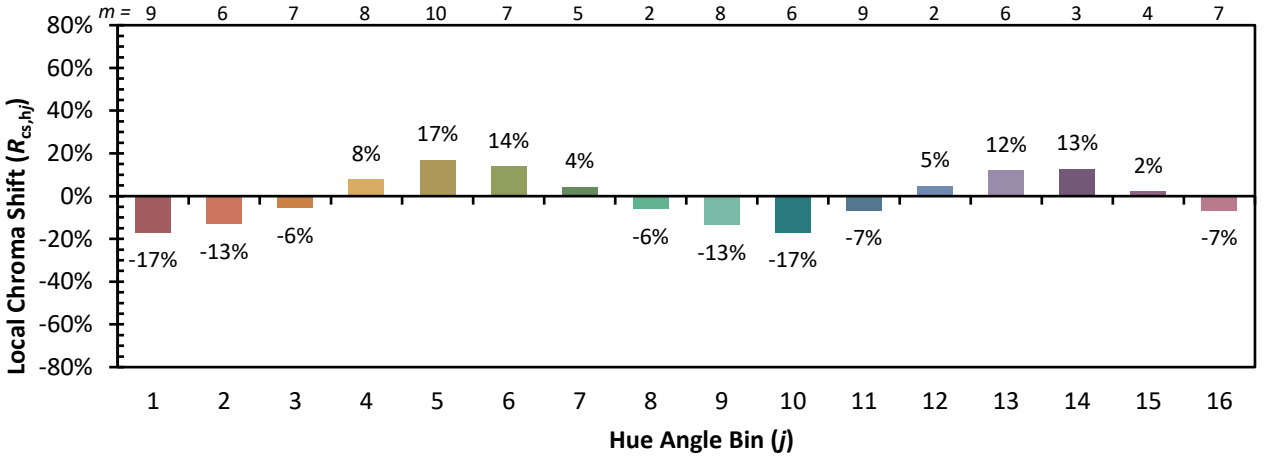
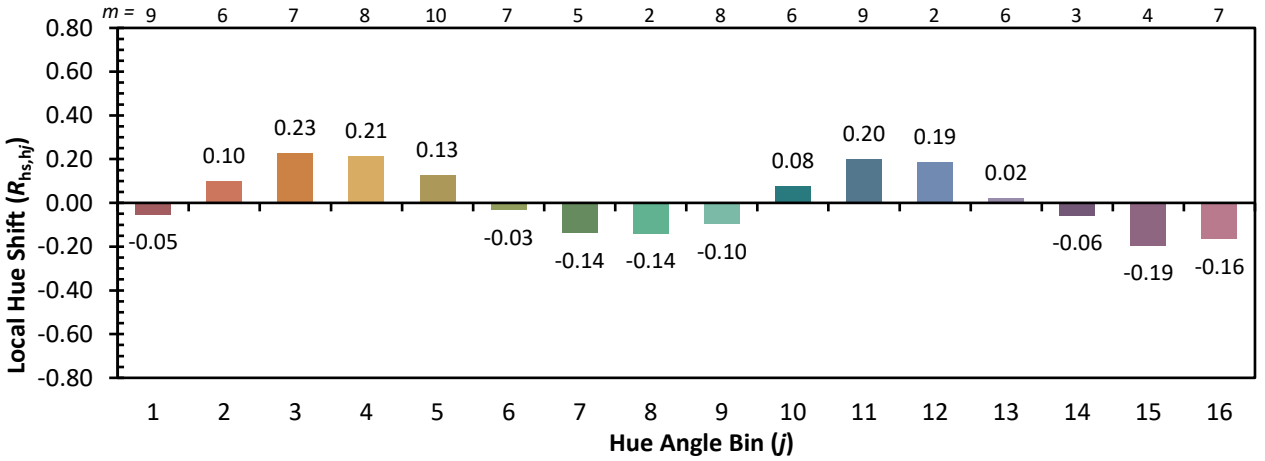
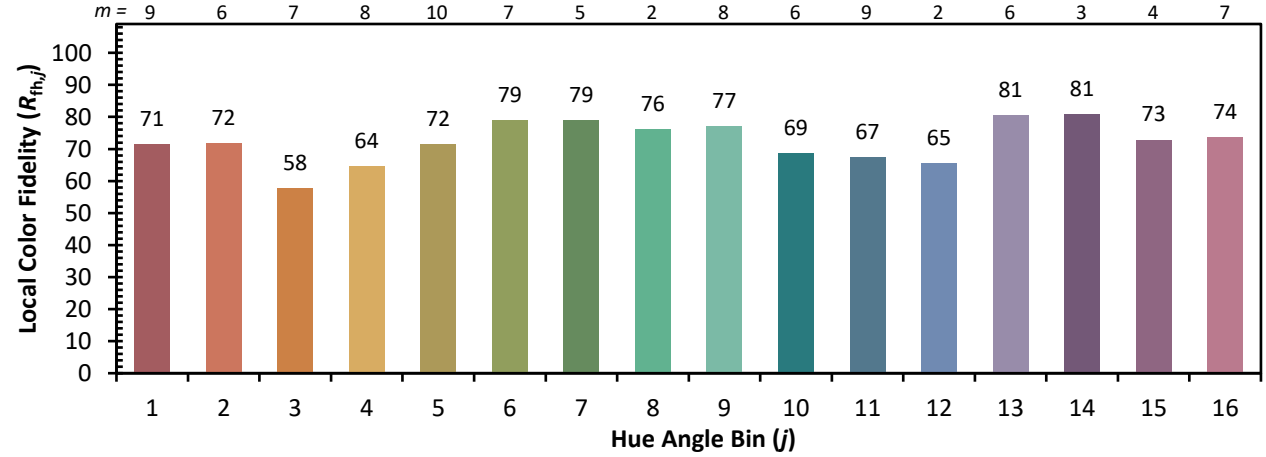
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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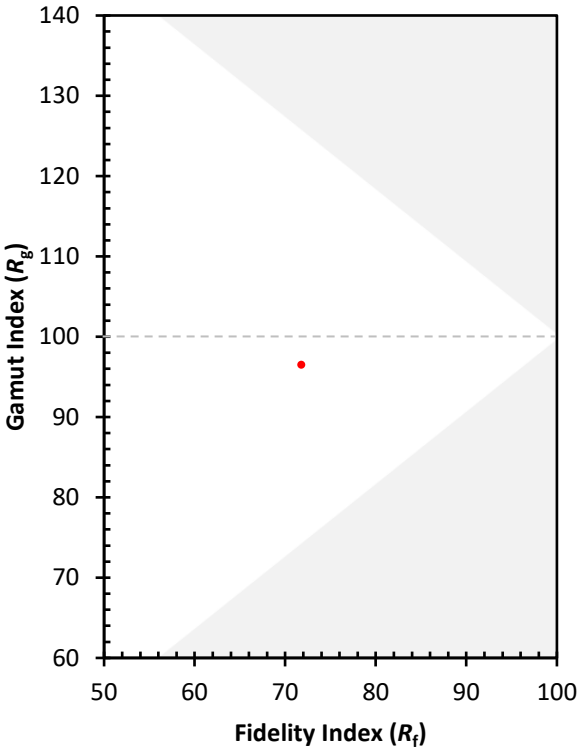
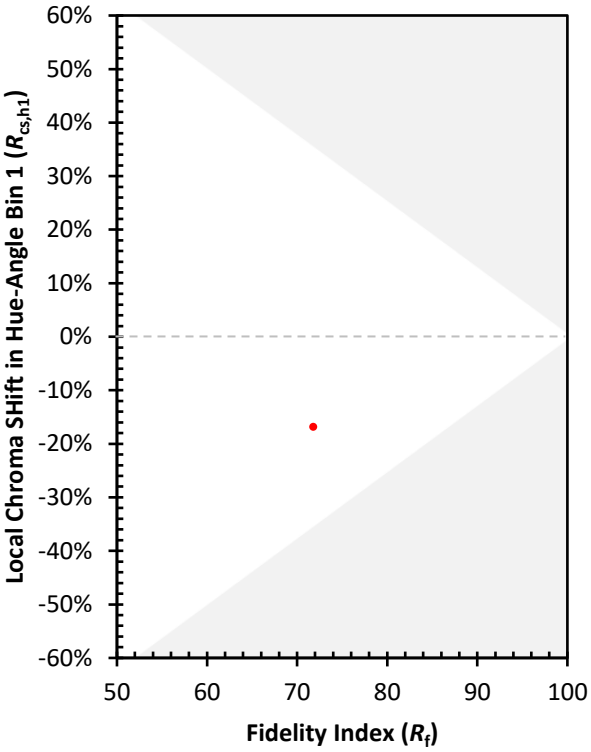
## Measure Comparisons




(END OF REPORT)