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: P1459150

Luminaire Tested: GLAN-SB3D-935-U-T4LG-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: | P1459150 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB3D-935-U-T4LG-HSS |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 3xLight Square PACKAGE 90CRI 3500K FIXTURE w/ TYPE IV LOW GLARE WITH HOUSE SIDE SHIELD |
| Light Source: | (78) 3500K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 15412.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 70.7 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 218.1 |
| 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: P1459150
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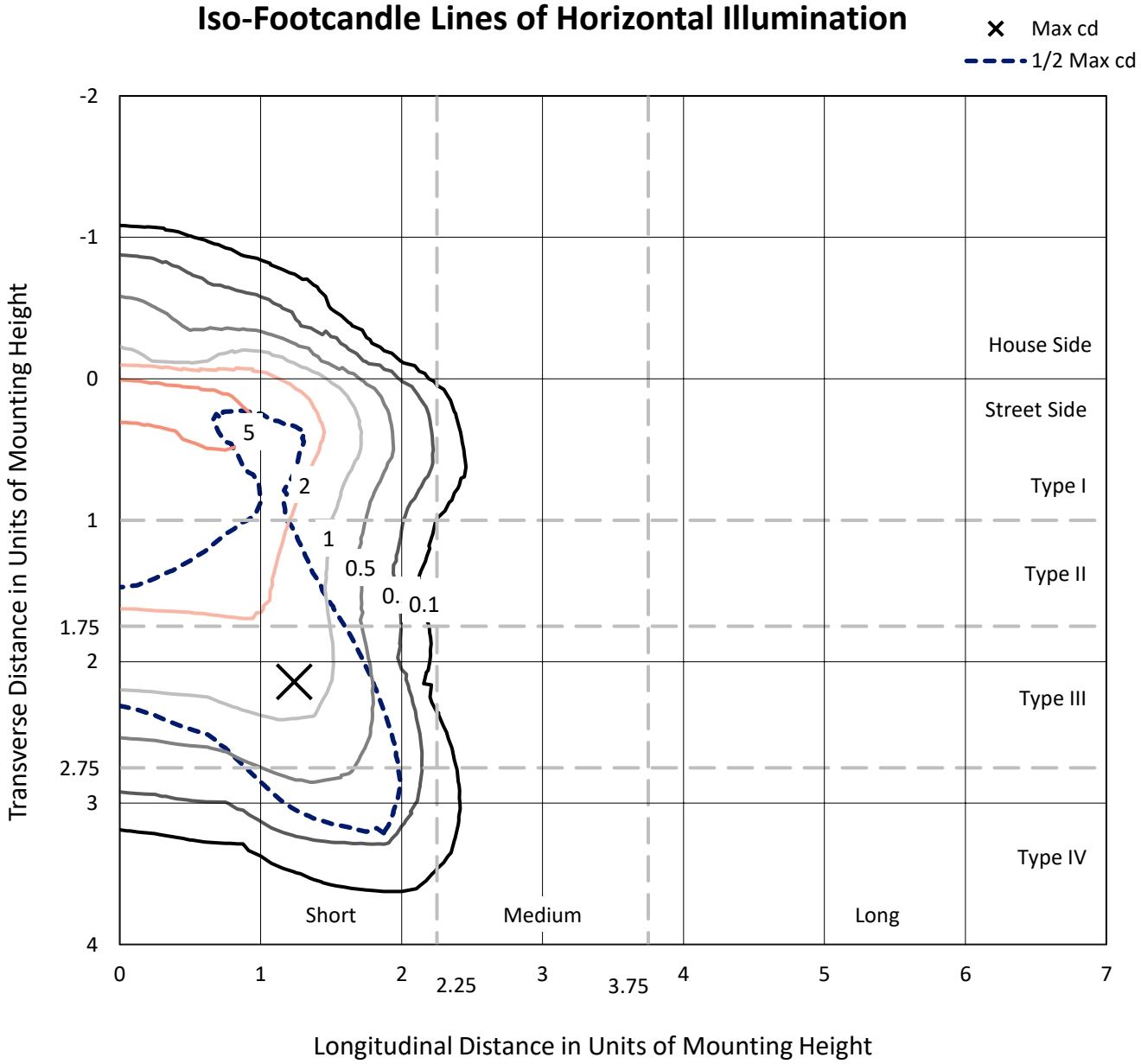
## Iso-Footcandle Lines of Horizontal Illumination




Based on 25 foot mounting height. Maximum calculated value = 7.4 fc
Type IV - Short - N/A

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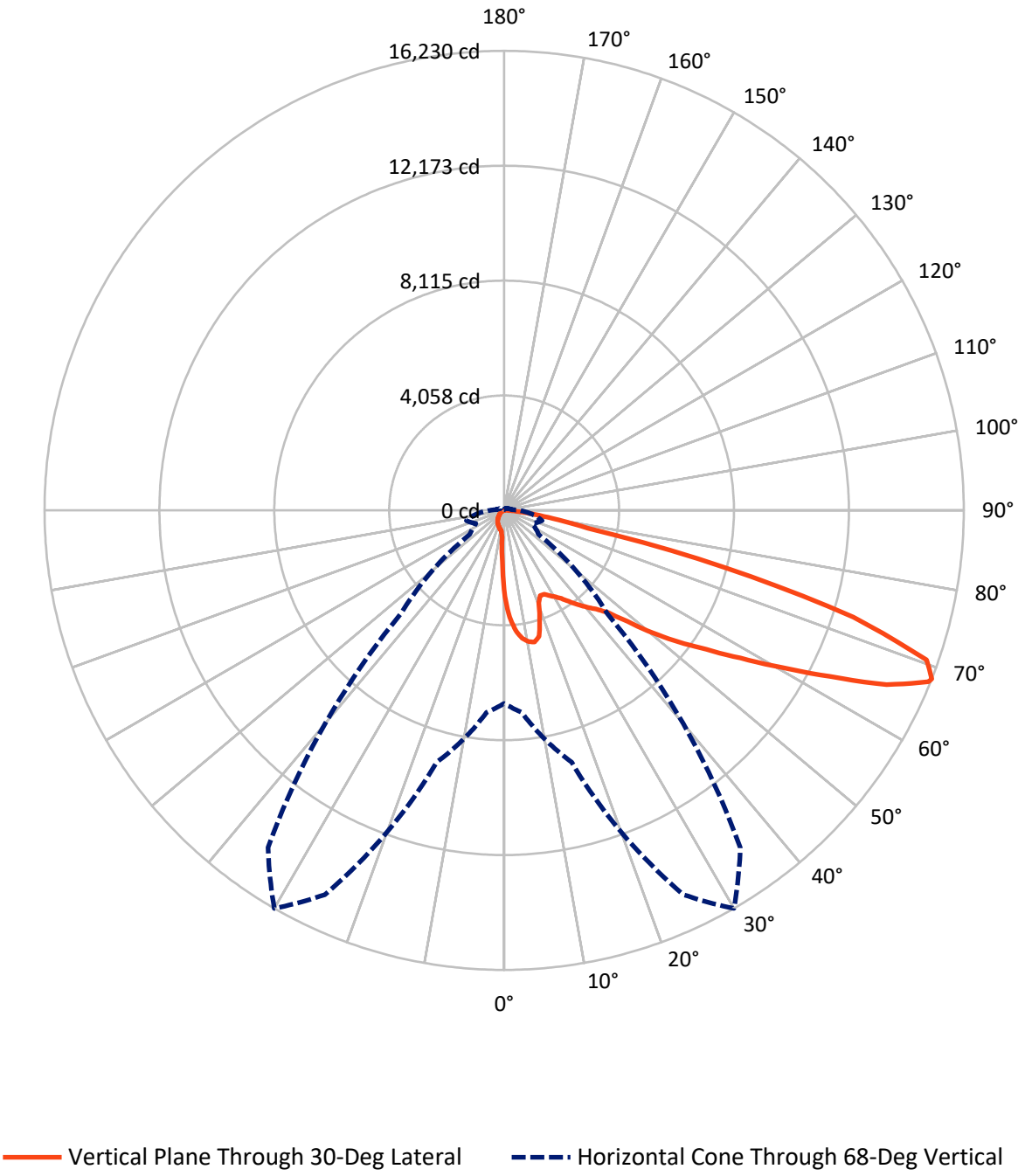
## Luminous Intensity Polar Plot



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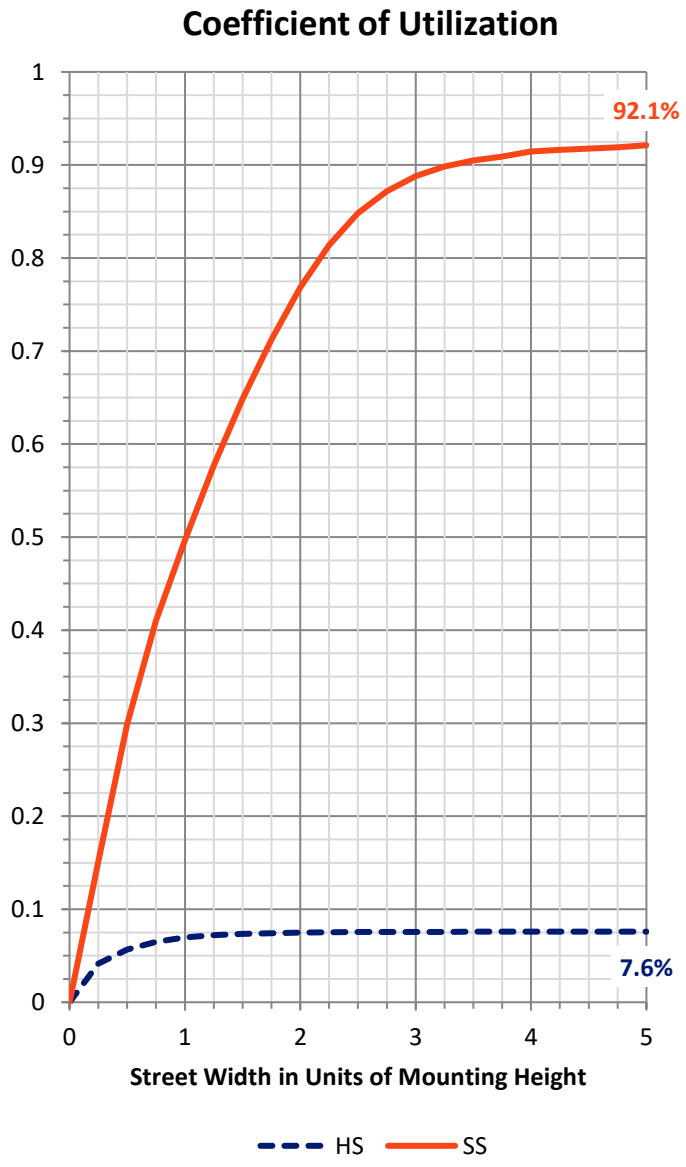
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1176.3 | 0.0 | 1176.3 |
| | % Fixture | 7.6 | 0.0 | 7.6 |
| **Street Side** | Lumens | 14235.8 | 0.0 | 14235.8 |
| | % Fixture | 92.4 | 0.0 | 92.4 |
| **Total** | Lumens | 15412.1 | 0.0 | 15412.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 262.2 | 1.7 |
| 10°-20° | 748.7 | 4.9 |
| 20°-30° | 1176.5 | 7.6 |
| 30°-40° | 1845.3 | 12.0 |
| 40°-50° | 2758.1 | 17.9 |
| 50°-60° | 3669.2 | 23.8 |
| 60°-70° | 3547.0 | 23.0 |
| 70°-80° | 1275.0 | 8.3 |
| 80°-90° | 130.1 | 0.8 |
| 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° | 15412.1 | 100.0 |
| 0°-180° | 15412.1 | 100.0 |



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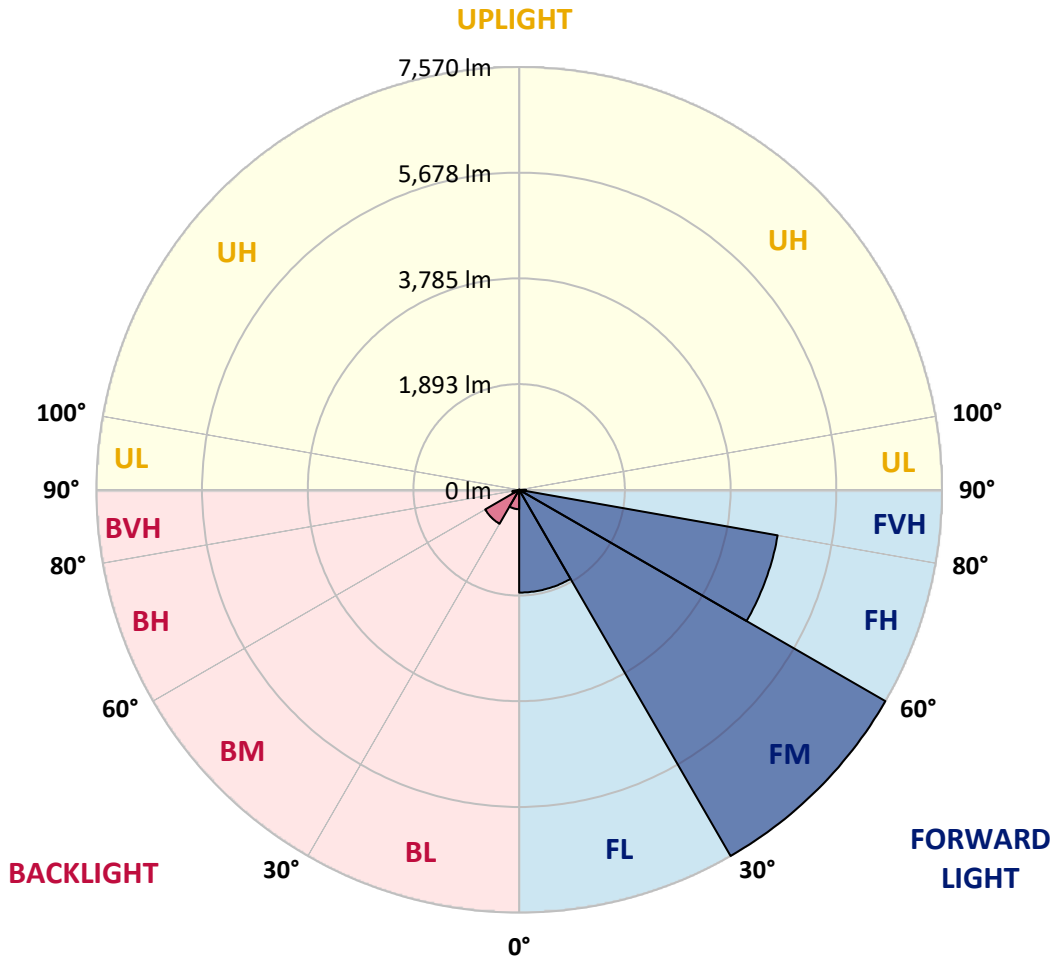
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1840.2 | 11.9 | | | |
| FM | (30°-60°) | 7570.4 | 49.1 | | | |
| FH | (60°-80°) | 4699.6 | 30.5 | | | G2/5000 |
| FVH | (80°-90°) | 125.5 | 0.8 | | | G2/225 |
| BL | (0°-30°) | 347.2 | 2.3 | B1/500 | | |
| BM | (30°-60°) | 702.2 | 4.6 | B1/1000 | | |
| BH | (60°-80°) | 122.3 | 0.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 4.6 | 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 IV Short



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REPORT NUMBER: P1459150
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 30° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3039.1 | 3039.1 | 3039.1 | 3039.1 | *3039.1* | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 |
| 2.5° | 3884.3 | 3884.3 | 3856.6 | 3819.6 | *3778.1* | 3764.2 | 3685.7 | 3574.9 | 3459.4 | 3325.4 | 3131.5 |
| 5° | 4383.1 | 4378.5 | 4323.1 | 4323.1 | *4267.7* | 4216.8 | 4138.3 | 3976.7 | 3791.9 | 3551.8 | 3214.6 |
| 7.5° | 4604.8 | 4614.1 | 4591.0 | 4591.0 | *4558.6* | 4521.7 | 4475.5 | 4318.5 | 4101.4 | 3778.1 | 3297.7 |
| 10° | 4683.3 | 4688.0 | 4688.0 | 4720.3 | *4711.0* | 4706.4 | 4701.8 | 4614.1 | 4387.7 | 4009.0 | 3385.5 |
| 12.5° | 4494.0 | 4517.1 | 4581.7 | 4724.9 | *4771.1* | 4821.9 | 4891.2 | 4863.5 | 4706.4 | 4300.0 | 3519.4 |
| 15° | 3884.3 | 3888.9 | 4069.1 | 4424.7 | *4614.1* | 4808.0 | 5075.9 | 5131.3 | 5029.7 | 4614.1 | 3658.0 |
| 17.5° | 3205.4 | 3219.2 | 3362.4 | 3759.6 | *4064.4* | 4512.4 | 5182.2 | 5408.5 | 5371.5 | 4923.5 | 3787.3 |
| 20° | 2923.6 | 2942.1 | 3011.4 | 3260.8 | *3491.7* | 3907.4 | 5075.9 | 5671.7 | 5685.6 | 5233.0 | 3907.4 |
| 22.5° | 2859.0 | 2872.8 | 2928.2 | 3122.2 | *3265.4* | 3542.5 | 4715.7 | 5879.6 | 6041.2 | 5588.6 | 4050.6 |
| 25° | 2840.5 | 2854.3 | 2937.5 | 3149.9 | *3283.9* | 3514.8 | 4387.7 | 5990.4 | 6461.5 | 5958.1 | 4189.1 |
| 27.5° | 2826.6 | 2845.1 | 2979.0 | 3251.5 | *3408.6* | 3630.3 | 4327.7 | 6013.5 | 6863.3 | 6350.7 | 4415.5 |
| 30° | 2845.1 | 2872.8 | 3048.3 | 3357.8 | *3537.9* | 3787.3 | 4470.9 | 6036.6 | 7306.7 | 6798.7 | 4701.8 |
| 32.5° | 2919.0 | 2942.1 | 3154.6 | 3501.0 | *3708.8* | 3990.5 | 4715.7 | 6175.2 | 7727.0 | 7255.9 | 4974.3 |
| 35° | 3002.1 | 3034.5 | 3288.5 | 3704.2 | *3953.6* | 4272.3 | 5048.2 | 6447.7 | 8128.9 | 7690.1 | 5256.1 |
| 37.5° | 3103.7 | 3140.7 | 3445.5 | 3935.1 | *4221.5* | 4581.7 | 5408.5 | 6826.4 | 8484.5 | 8045.7 | 5537.8 |
| 40° | 3242.3 | 3283.9 | 3625.7 | 4179.9 | *4489.4* | 4849.6 | 5764.1 | 7200.5 | 8757.0 | 8258.2 | 5722.5 |
| 42.5° | 3787.3 | 3842.7 | 3985.9 | 4420.1 | *4766.5* | 5136.0 | 6115.1 | 7556.2 | 8858.6 | 8327.5 | 5759.5 |
| 45° | 4803.4 | 4858.8 | 4821.9 | 4905.0 | *5136.0* | 5482.4 | 6498.5 | 7897.9 | 8872.5 | 8309.0 | 5741.0 |
| 47.5° | 5824.1 | 5888.8 | 5856.5 | 5810.3 | *5861.1* | 6027.4 | 6928.0 | 8115.0 | 8798.6 | 8299.8 | 5741.0 |
| 50° | 6798.7 | 6761.7 | 6766.4 | 6752.5 | *6798.7* | 6886.4 | 7343.7 | 8156.6 | 8780.1 | 8387.5 | 5791.8 |
| 52.5° | 7320.6 | 7339.1 | 7454.5 | 7625.4 | *7727.0* | 7814.8 | 7819.4 | 8221.2 | 8646.2 | 8239.7 | 5731.8 |
| 55° | 7833.3 | 7870.2 | 8138.1 | 8429.1 | *8655.4* | 8821.7 | 8295.1 | 8179.7 | 7847.1 | 7745.5 | 5417.7 |
| 57.5° | 8410.6 | 8461.4 | 8840.1 | 9440.6 | *9837.8* | 9925.5 | 8766.2 | 7403.7 | 6641.7 | 7038.9 | 4808.0 |
| 60° | 9205.0 | 9265.1 | 9768.5 | 10669.1 | *11260.3* | 11080.2 | 8803.2 | 6170.5 | 5274.5 | 5842.6 | 3967.4 |
| 62.5° | 9828.5 | 9948.6 | 10858.5 | 12262.6 | *12913.8* | 12341.1 | 8115.0 | 4729.5 | 3685.7 | 4106.0 | 2895.9 |
| 65° | 9163.4 | 9394.4 | 10877.0 | 14087.0 | *14839.8* | 13823.7 | 7034.2 | 3228.5 | 2078.4 | 2655.7 | 1852.1 |
| 67.5° | 7408.4 | 7731.7 | 9657.6 | 14973.7 | *16160.7* | 14604.2 | 5537.8 | 1713.5 | 1191.6 | 1542.6 | 974.5 |
| 68° | *6817.2* | *7168.2* | *9209.6* | *14973.7* | *16230.0* | *14535.0* | *5140.6* | *1482.6* | *1099.2* | *1385.6* | *845.2* |
| 70° | 4711.0 | 4960.5 | 7080.4 | 14133.1 | *15823.6* | 13251.0 | 3385.5 | 849.8 | 826.7 | 951.4 | 558.9 |
| 72.5° | 2309.3 | 2577.2 | 3787.3 | 11200.3 | *12890.7* | 10184.2 | 1542.6 | 563.5 | 628.1 | 697.4 | 438.8 |
| 75° | 919.1 | 974.5 | 1491.8 | 5523.9 | *8055.0* | 6498.5 | 808.3 | 424.9 | 540.4 | 545.0 | 346.4 |
| 77.5° | 526.5 | 558.9 | 826.7 | 2032.2 | *3020.6* | 2905.1 | 521.9 | 304.8 | 429.5 | 392.6 | 226.3 |
| 80° | 295.6 | 300.2 | 466.5 | 1071.5 | *1727.4* | 1547.3 | 355.6 | 221.7 | 327.9 | 277.1 | 152.4 |
| 82.5° | 147.8 | 166.3 | 295.6 | 591.2 | *960.7* | 983.8 | 189.4 | 157.0 | 263.3 | 198.6 | 124.7 |
| 85° | 106.2 | 115.5 | 212.5 | 327.9 | *443.4* | 665.1 | 115.5 | 78.5 | 198.6 | 133.9 | 87.8 |
| 87.5° | 55.4 | 69.3 | 133.9 | 161.7 | *180.1* | 226.3 | 55.4 | 36.9 | 110.8 | 78.5 | 46.2 |
| 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: P1459150
CATALOG NUMBER: GLAN-SB3D-935-U-T4LG-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 | 3039.1 |
| 2.5° | 3039.1 | 2932.9 | 2715.8 | 2461.8 | 2263.2 | 2059.9 | 1893.7 | 1736.6 | 1662.7 | 1653.5 | 1672.0 |
| 5° | 3025.2 | 2794.3 | 2300.1 | 1815.1 | 1417.9 | 1140.8 | 988.4 | 909.9 | 868.3 | 849.8 | 854.5 |
| 7.5° | 2997.5 | 2646.5 | 1856.7 | 1228.6 | 919.1 | 799.0 | 762.1 | 748.2 | 743.6 | 743.6 | 743.6 |
| 10° | 2969.8 | 2447.9 | 1422.6 | 900.6 | 752.8 | 720.5 | 711.3 | 711.3 | 706.7 | 706.7 | 711.3 |
| 12.5° | 2956.0 | 2263.2 | 1103.9 | 752.8 | 702.0 | 688.2 | 678.9 | 674.3 | 674.3 | 674.3 | 678.9 |
| 15° | 2923.6 | 2059.9 | 891.4 | 697.4 | 669.7 | 651.2 | 646.6 | 642.0 | 642.0 | 642.0 | 642.0 |
| 17.5° | 2895.9 | 1861.3 | 775.9 | 660.5 | 637.4 | 618.9 | 614.3 | 609.7 | 609.7 | 614.3 | 614.3 |
| 20° | 2854.3 | 1672.0 | 697.4 | 623.5 | 605.0 | 586.6 | 582.0 | 577.3 | 582.0 | 582.0 | 582.0 |
| 22.5° | 2803.5 | 1514.9 | 651.2 | 595.8 | 572.7 | 554.2 | 554.2 | 554.2 | 554.2 | 554.2 | 558.9 |
| 25° | 2771.2 | 1404.1 | 618.9 | 563.5 | 540.4 | 526.5 | 521.9 | 521.9 | 531.1 | 531.1 | 535.8 |
| 27.5° | 2822.0 | 1376.4 | 623.5 | 554.2 | 512.7 | 498.8 | 494.2 | 494.2 | 503.4 | 508.1 | 512.7 |
| 30° | 2974.4 | 1427.2 | 678.9 | 582.0 | 494.2 | 471.1 | 466.5 | 466.5 | 480.3 | 485.0 | 489.6 |
| 32.5° | 3149.9 | 1533.4 | 762.1 | 618.9 | 480.3 | 443.4 | 434.2 | 434.2 | 448.0 | 452.6 | 457.2 |
| 35° | 3390.1 | 1699.7 | 872.9 | 651.2 | 489.6 | 415.7 | 397.2 | 397.2 | 406.4 | 415.7 | 420.3 |
| 37.5° | 3699.6 | 1972.2 | 1002.3 | 674.3 | 489.6 | 383.3 | 360.3 | 355.6 | 364.9 | 364.9 | 369.5 |
| 40° | 4022.9 | 2327.8 | 1136.2 | 674.3 | 466.5 | 351.0 | 327.9 | 314.1 | 318.7 | 314.1 | 318.7 |
| 42.5° | 4203.0 | 2614.2 | 1251.7 | 632.8 | 438.8 | 318.7 | 295.6 | 277.1 | 272.5 | 263.3 | 267.9 |
| 45° | 4304.6 | 2743.5 | 1219.3 | 586.6 | 411.1 | 295.6 | 267.9 | 244.8 | 235.6 | 221.7 | 221.7 |
| 47.5° | 4304.6 | 2757.3 | 1043.8 | 549.6 | 383.3 | 277.1 | 240.2 | 217.1 | 203.2 | 189.4 | 194.0 |
| 50° | 4253.8 | 2632.6 | 826.7 | 512.7 | 351.0 | 258.6 | 217.1 | 198.6 | 180.1 | 170.9 | 170.9 |
| 52.5° | 4041.3 | 2226.2 | 632.8 | 466.5 | 314.1 | 235.6 | 194.0 | 175.5 | 157.0 | 152.4 | 152.4 |
| 55° | 3676.5 | 1635.0 | 512.7 | 420.3 | 281.7 | 217.1 | 175.5 | 161.7 | 143.2 | 133.9 | 133.9 |
| 57.5° | 2988.3 | 1117.7 | 424.9 | 378.7 | 249.4 | 194.0 | 157.0 | 143.2 | 120.1 | 110.8 | 110.8 |
| 60° | 2217.0 | 729.8 | 360.3 | 332.5 | 212.5 | 175.5 | 138.6 | 120.1 | 101.6 | 92.4 | 87.8 |
| 62.5° | 1496.5 | 494.2 | 300.2 | 263.3 | 180.1 | 152.4 | 120.1 | 101.6 | 78.5 | 60.0 | 60.0 |
| 65° | 933.0 | 383.3 | 249.4 | 207.8 | 157.0 | 133.9 | 101.6 | 78.5 | 55.4 | 41.6 | 36.9 |
| 67.5° | 535.8 | 309.5 | 203.2 | 161.7 | 133.9 | 106.2 | 78.5 | 64.7 | 46.2 | 32.3 | 27.7 |
| 68° | *494.2* | *295.6* | *189.4* | *152.4* | *124.7* | *101.6* | *73.9* | *60.0* | *41.6* | *27.7* | *27.7* |
| 70° | 401.8 | 263.3 | 161.7 | 124.7 | 106.2 | 83.1 | 64.7 | 50.8 | 32.3 | 18.5 | 18.5 |
| 72.5° | 355.6 | 221.7 | 138.6 | 97.0 | 73.9 | 69.3 | 50.8 | 36.9 | 23.1 | 13.9 | 9.2 |
| 75° | 291.0 | 175.5 | 110.8 | 73.9 | 50.8 | 50.8 | 36.9 | 23.1 | 9.2 | 0.0 | 0.0 |
| 77.5° | 189.4 | 129.3 | 87.8 | 46.2 | 27.7 | 32.3 | 23.1 | 9.2 | 0.0 | 0.0 | 0.0 |
| 80° | 124.7 | 97.0 | 60.0 | 23.1 | 13.9 | 13.9 | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 87.8 | 64.7 | 36.9 | 9.2 | 4.6 | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 55.4 | 27.7 | 13.9 | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 23.1 | 9.2 | 4.6 | 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: SP1-2407-184-15

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-935-U-5WQ

Data in this report applies to families of products including GSS-SB1A-935-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

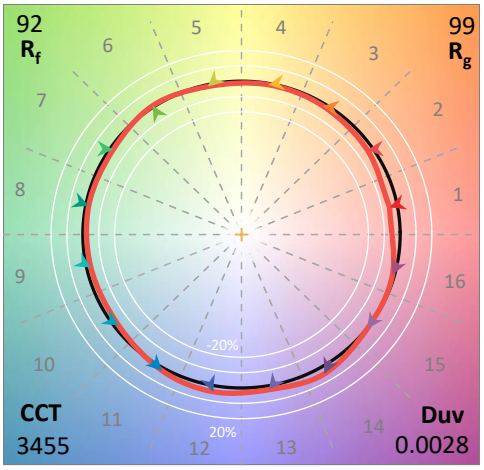
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-15 |
| 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-935-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 3500K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3455 |
| CIE u': | 0.2356 |
| CIE v': | 0.5159 |
| Duv: | 0.0028 |
| CIE x: | 0.4109 |
| CIE y: | 0.3999 |
| CIE z: | 0.1892 |
| Peak Wavelength (nm): | 616 |
| Dominant Wavelength (nm): | 579 |
| Purity: | 43.35383 |
| Rf: | 92.3 |
| Rg: | 98.5 |

| | | | |
|---|---|---|---|
| CRI (Ra): | 92.2 | | |
| R1: | 92.0 | R9: | 59.8 |
| R2: | 94.4 | R10: | 85.8 |
| R3: | 95.6 | R11: | 93.2 |
| R4: | 93.2 | R12: | 78.0 |
| R5: | 91.4 | R13: | 92.5 |
| R6: | 92.5 | R14: | 97.0 |
| R7: | 94.5 | R15: | 88.4 |
| R8: | 84.2 | | |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-15

| 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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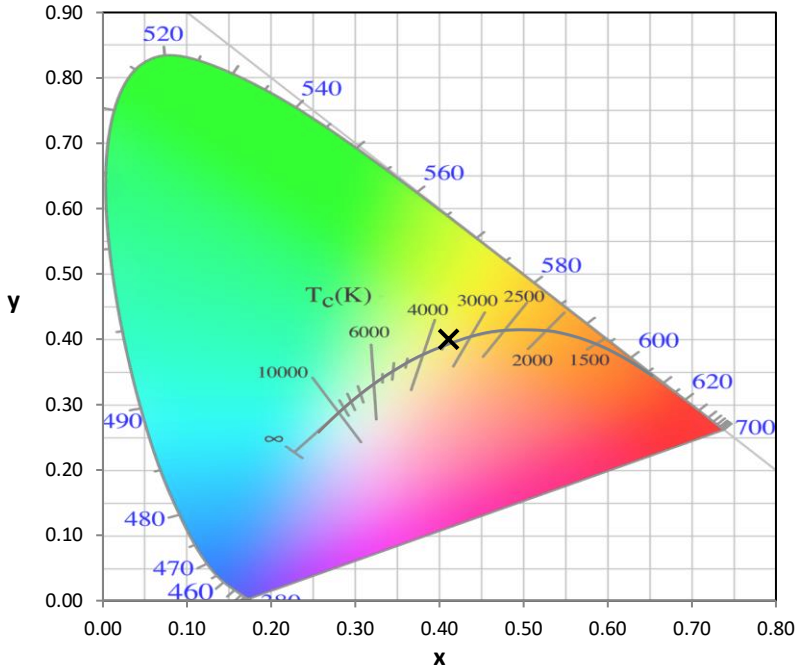
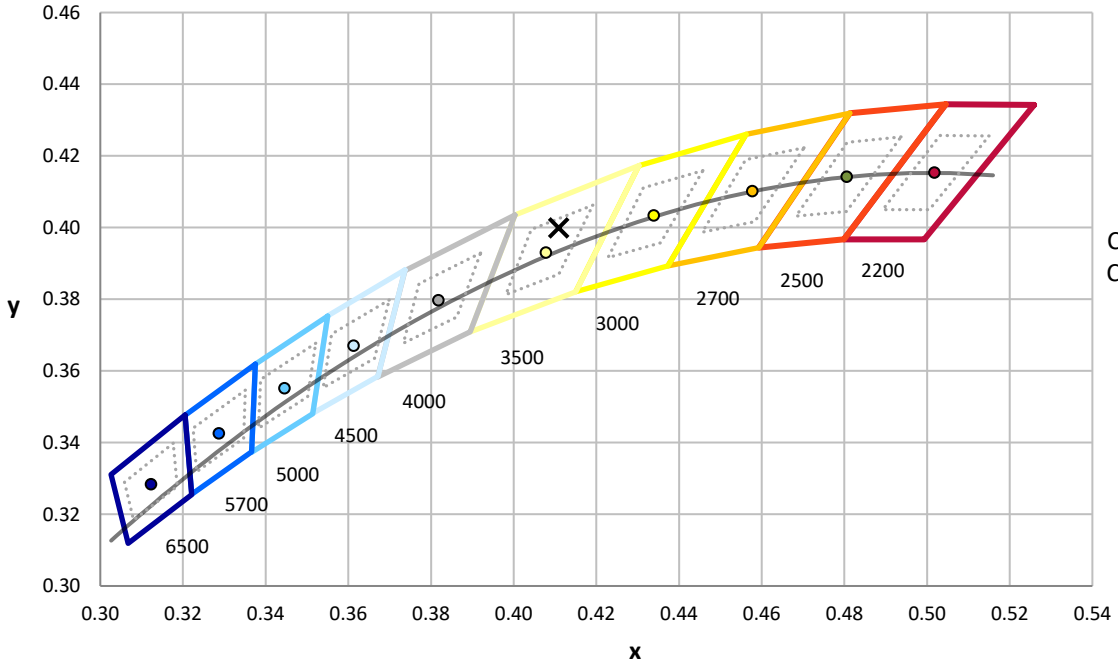
## CIE 1931 Chromaticity Diagram




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




CCT = 3455K
CIE x = 0.4109
CIE y = 0.3999
Duv = 0.0028

Point lies inside the ANSI 3500K 4-step quadrangle

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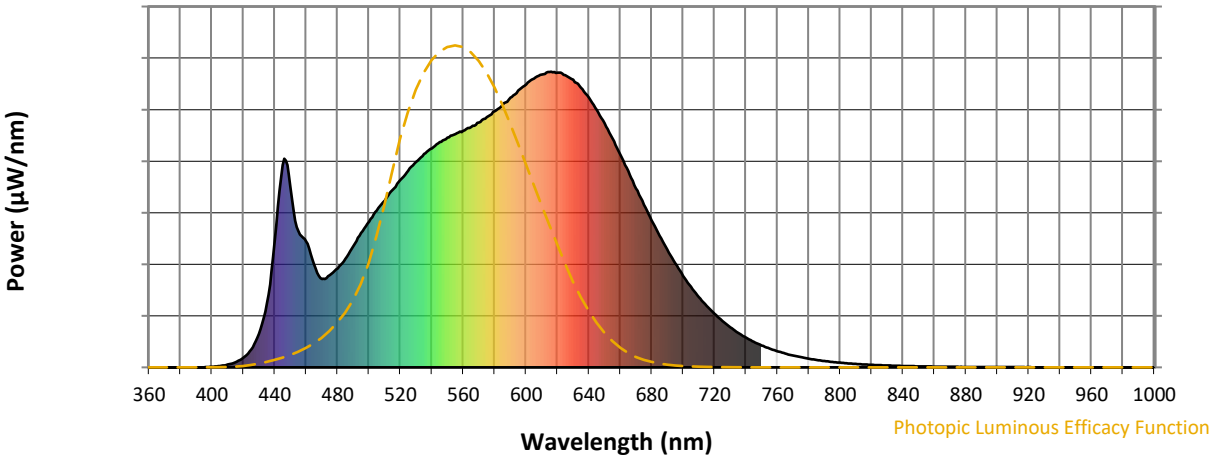
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 410 | NR | 620 | 997 | NR | 750 | 74 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 454 | NR | 625 | 988 | NR | 755 | 64 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 493 | NR | 630 | 973 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 530 | NR | 635 | 946 | NR | 765 | 47 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 564 | NR | 640 | 913 | NR | 770 | 40 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 599 | NR | 645 | 870 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 634 | NR | 650 | 826 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 664 | NR | 655 | 774 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 2 | NR | 530 | 695 | NR | 660 | 720 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 4 | NR | 535 | 722 | NR | 665 | 664 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 9 | NR | 540 | 741 | NR | 670 | 605 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 17 | NR | 545 | 762 | NR | 675 | 550 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 32 | NR | 550 | 777 | NR | 680 | 497 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 61 | NR | 555 | 789 | NR | 685 | 445 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 800 | NR | 690 | 398 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 218 | NR | 565 | 813 | NR | 695 | 352 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 427 | NR | 570 | 828 | NR | 700 | 309 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 846 | NR | 705 | 273 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 611 | NR | 580 | 866 | NR | 710 | 237 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 461 | NR | 585 | 888 | NR | 715 | 208 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 427 | NR | 590 | 913 | NR | 720 | 181 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 349 | NR | 595 | 936 | NR | 725 | 157 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 298 | NR | 600 | 957 | NR | 730 | 136 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 312 | NR | 605 | 976 | NR | 735 | 117 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 335 | NR | 610 | 990 | NR | 740 | 100 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 367 | NR | 615 | 999 | NR | 745 | 86 | NR | 875 | 2 | NR | | | |

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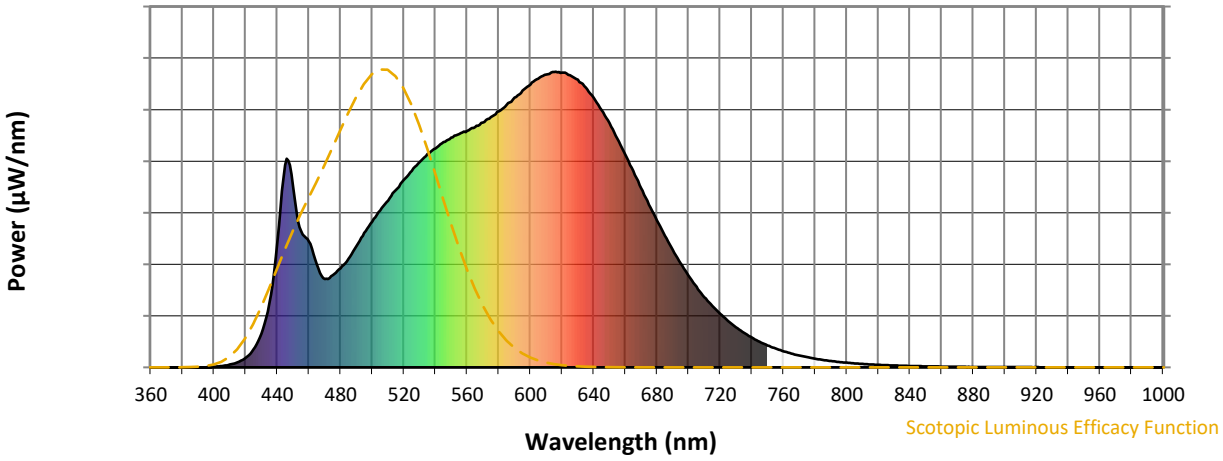
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.58**

| 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 | 410 | NR | 620 | 997 | NR | 750 | 74 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 454 | NR | 625 | 988 | NR | 755 | 64 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 493 | NR | 630 | 973 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 530 | NR | 635 | 946 | NR | 765 | 47 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 564 | NR | 640 | 913 | NR | 770 | 40 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 599 | NR | 645 | 870 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 634 | NR | 650 | 826 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 664 | NR | 655 | 774 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 2 | NR | 530 | 695 | NR | 660 | 720 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 4 | NR | 535 | 722 | NR | 665 | 664 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 9 | NR | 540 | 741 | NR | 670 | 605 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 17 | NR | 545 | 762 | NR | 675 | 550 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 32 | NR | 550 | 777 | NR | 680 | 497 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 61 | NR | 555 | 789 | NR | 685 | 445 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 800 | NR | 690 | 398 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 218 | NR | 565 | 813 | NR | 695 | 352 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 427 | NR | 570 | 828 | NR | 700 | 309 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 846 | NR | 705 | 273 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 611 | NR | 580 | 866 | NR | 710 | 237 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 461 | NR | 585 | 888 | NR | 715 | 208 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 427 | NR | 590 | 913 | NR | 720 | 181 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 349 | NR | 595 | 936 | NR | 725 | 157 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 298 | NR | 600 | 957 | NR | 730 | 136 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 312 | NR | 605 | 976 | NR | 735 | 117 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 335 | NR | 610 | 990 | NR | 740 | 100 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 367 | NR | 615 | 999 | NR | 745 | 86 | NR | 875 | 2 | NR | | | |

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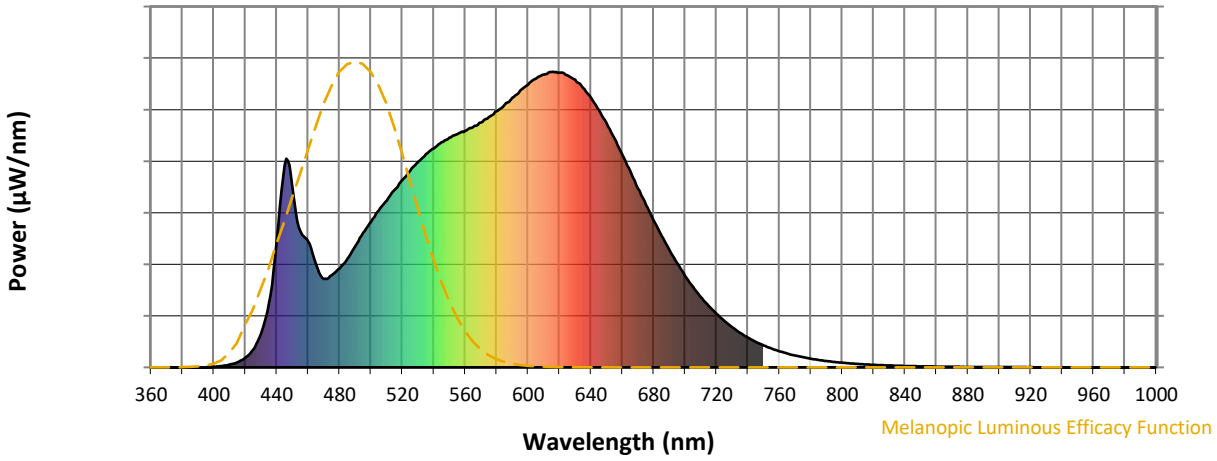
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.14**

| 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 | 410 | NR | 620 | 997 | NR | 750 | 74 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 454 | NR | 625 | 988 | NR | 755 | 64 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 493 | NR | 630 | 973 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 530 | NR | 635 | 946 | NR | 765 | 47 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 564 | NR | 640 | 913 | NR | 770 | 40 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 599 | NR | 645 | 870 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 634 | NR | 650 | 826 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 0 | NR | 525 | 664 | NR | 655 | 774 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 2 | NR | 530 | 695 | NR | 660 | 720 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 4 | NR | 535 | 722 | NR | 665 | 664 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 9 | NR | 540 | 741 | NR | 670 | 605 | NR | 800 | 16 | NR | 930 | 0 | NR |
| 415 | 17 | NR | 545 | 762 | NR | 675 | 550 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 32 | NR | 550 | 777 | NR | 680 | 497 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 61 | NR | 555 | 789 | NR | 685 | 445 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 800 | NR | 690 | 398 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 218 | NR | 565 | 813 | NR | 695 | 352 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 427 | NR | 570 | 828 | NR | 700 | 309 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 684 | NR | 575 | 846 | NR | 705 | 273 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 611 | NR | 580 | 866 | NR | 710 | 237 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 461 | NR | 585 | 888 | NR | 715 | 208 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 427 | NR | 590 | 913 | NR | 720 | 181 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 349 | NR | 595 | 936 | NR | 725 | 157 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 298 | NR | 600 | 957 | NR | 730 | 136 | NR | 860 | 3 | NR | 990 | 1 | NR |
| 475 | 312 | NR | 605 | 976 | NR | 735 | 117 | NR | 865 | 2 | NR | 995 | 0 | NR |
| 480 | 335 | NR | 610 | 990 | NR | 740 | 100 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 367 | NR | 615 | 999 | NR | 745 | 86 | NR | 875 | 2 | NR | | | |

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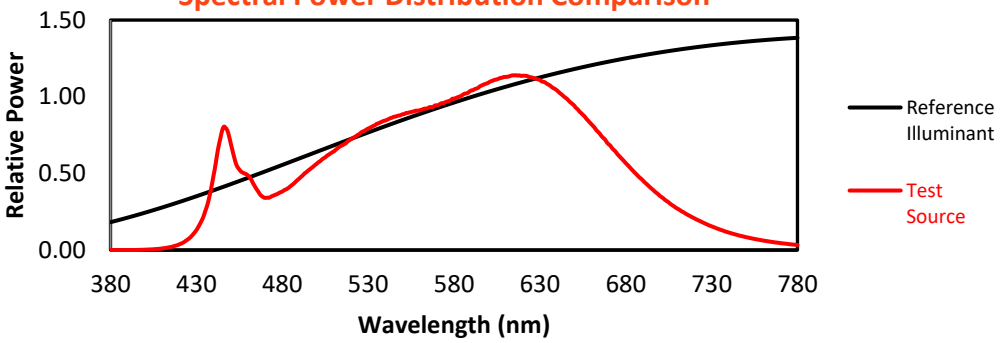
# TM-30-18

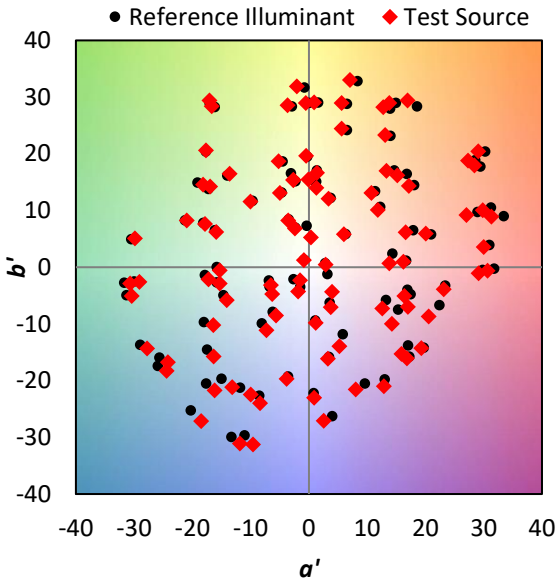
## Summary

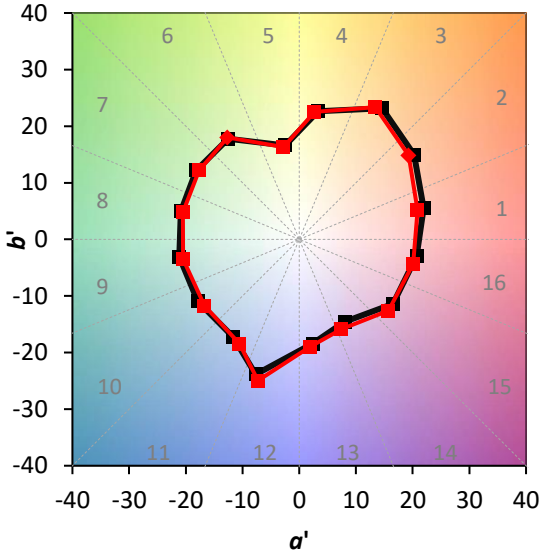
$R_f$ = 92.3
$R_g$ = 98.5
CIE $R_a$ = 92.2
$R_9$ = 59.8

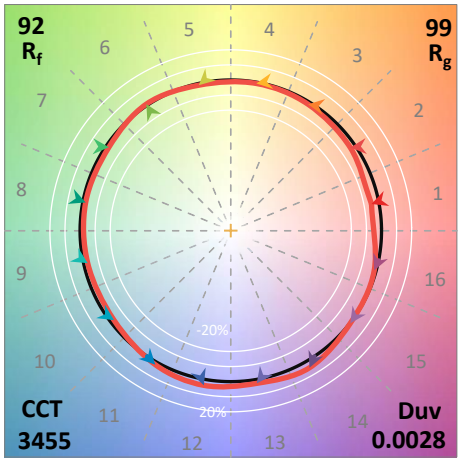
## Spectral Power Distribution Comparison

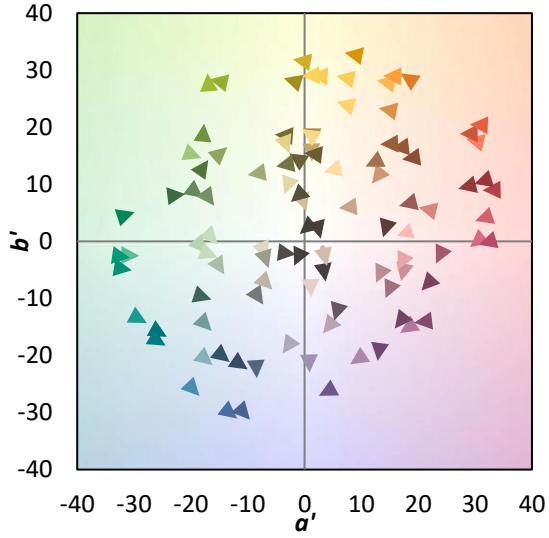



## Color Vector Graphics



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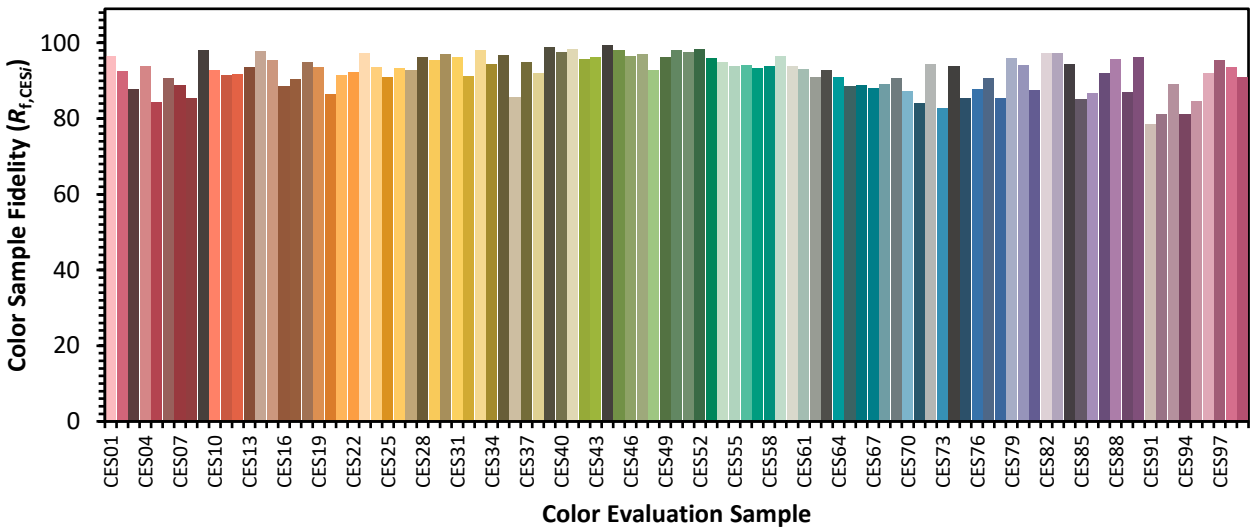
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 93 | CES51 = 97 | CES76 = 88 |
| CES02 = 62 | CES27 = 93 | CES52 = 98 | CES77 = 91 |
| CES03 = 31 | CES28 = 96 | CES53 = 96 | CES78 = 85 |
| CES04 = 70 | CES29 = 95 | CES54 = 95 | CES79 = 96 |
| CES05 = 50 | CES30 = 97 | CES55 = 94 | CES80 = 94 |
| CES06 = 51 | CES31 = 96 | CES56 = 94 | CES81 = 87 |
| CES07 = 42 | CES32 = 91 | CES57 = 93 | CES82 = 97 |
| CES08 = 41 | CES33 = 98 | CES58 = 94 | CES83 = 97 |
| CES09 = 29 | CES34 = 94 | CES59 = 96 | CES84 = 94 |
| CES10 = 75 | CES35 = 97 | CES60 = 94 | CES85 = 85 |
| CES11 = 58 | CES36 = 86 | CES61 = 93 | CES86 = 87 |
| CES12 = 64 | CES37 = 95 | CES62 = 91 | CES87 = 92 |
| CES13 = 43 | CES38 = 92 | CES63 = 93 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 87 |
| CES15 = 71 | CES40 = 98 | CES65 = 89 | CES90 = 96 |
| CES16 = 47 | CES41 = 98 | CES66 = 89 | CES91 = 78 |
| CES17 = 49 | CES42 = 96 | CES67 = 88 | CES92 = 81 |
| CES18 = 56 | CES43 = 96 | CES68 = 89 | CES93 = 89 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 81 |
| CES20 = 66 | CES45 = 98 | CES70 = 87 | CES95 = 85 |
| CES21 = 86 | CES46 = 97 | CES71 = 84 | CES96 = 92 |
| CES22 = 78 | CES47 = 97 | CES72 = 95 | CES97 = 95 |
| CES23 = 91 | CES48 = 93 | CES73 = 83 | CES98 = 94 |
| CES24 = 90 | CES49 = 96 | CES74 = 94 | CES99 = 91 |
| CES25 = 71 | CES50 = 98 | CES75 = 85 | |



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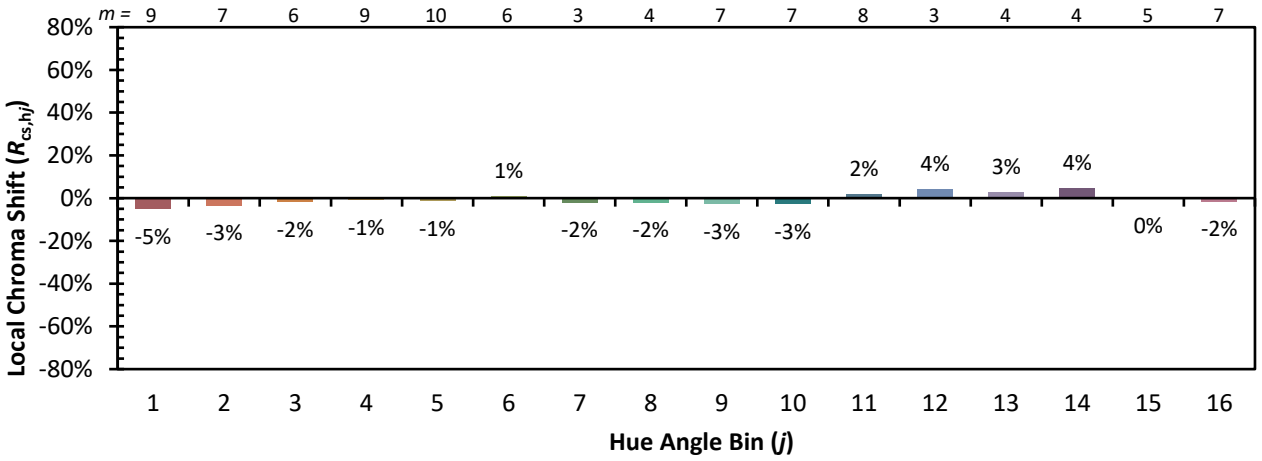
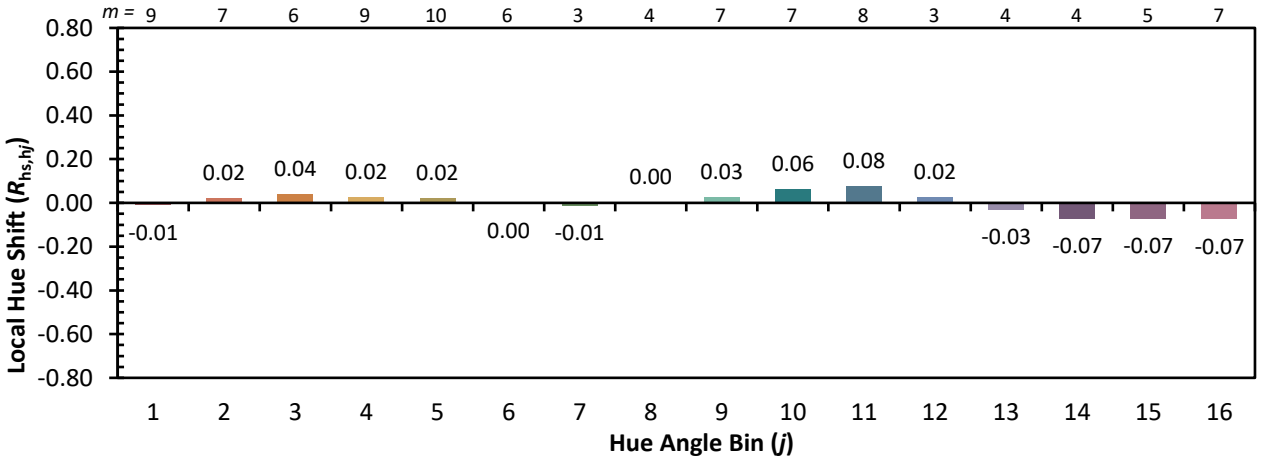
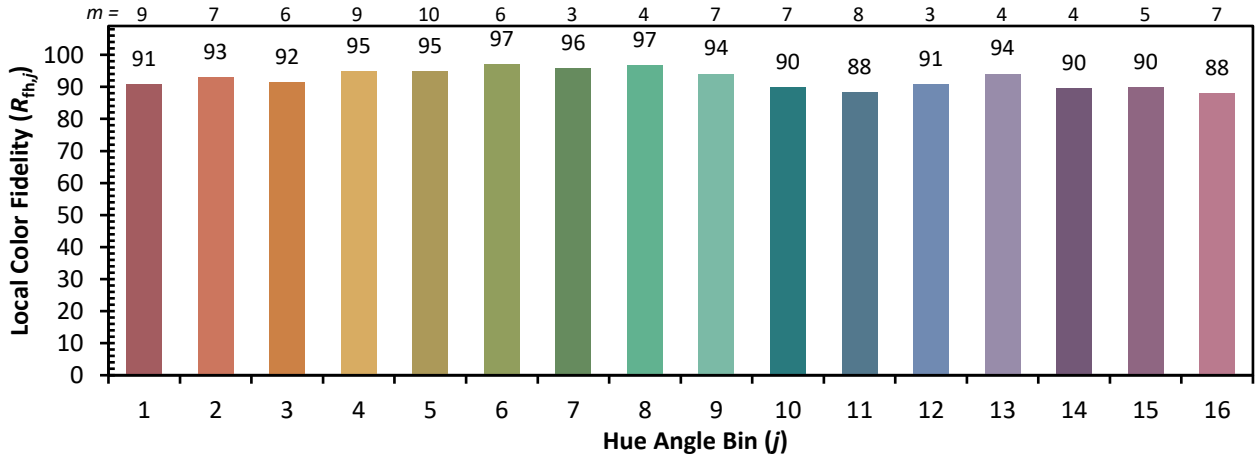
## Color Rendition by Hue-Angle Bin



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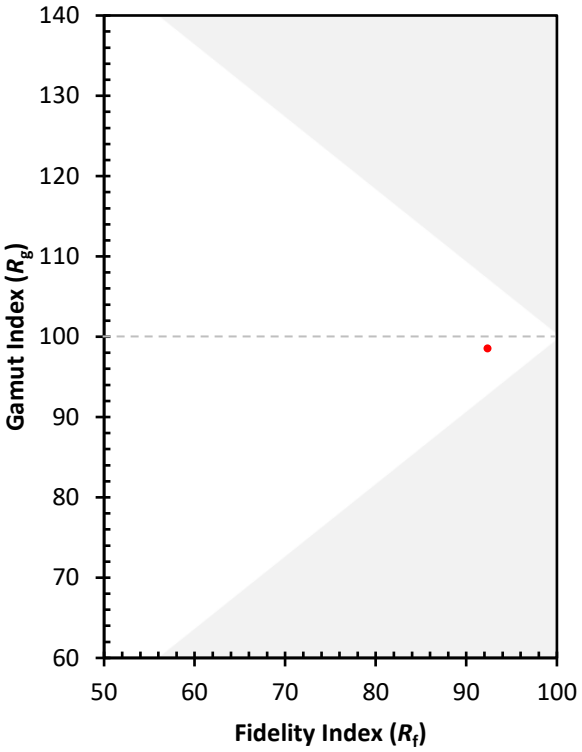
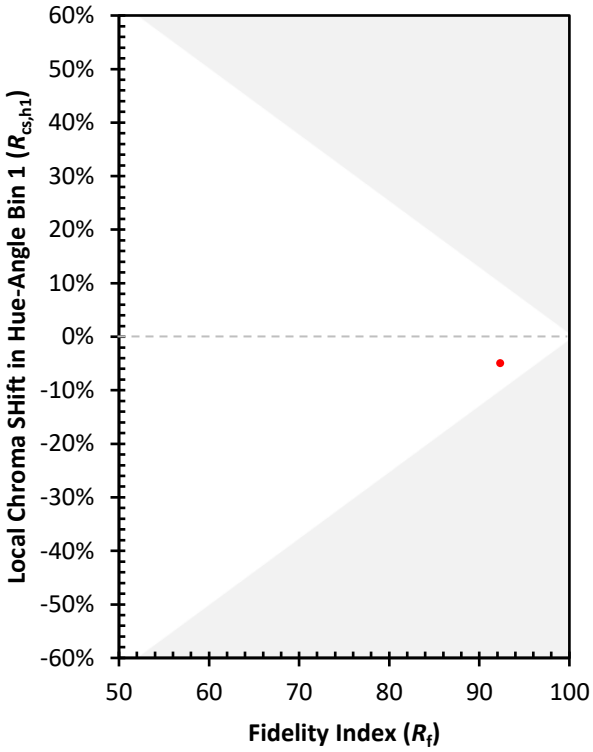
## Measure Comparisons




(END OF REPORT)