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: P1457466

Luminaire Tested: GLAN-SB5D-940-U-T4LG

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: | P1457466 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB5D-940-U-T4LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 5xLight Square PACKAGE 90CRI 4000K FIXTURE w/ TYPE IV LOW GLARE |
| Light Source: | (130) 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 36457.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 99.9 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B3 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 364.9 |
| 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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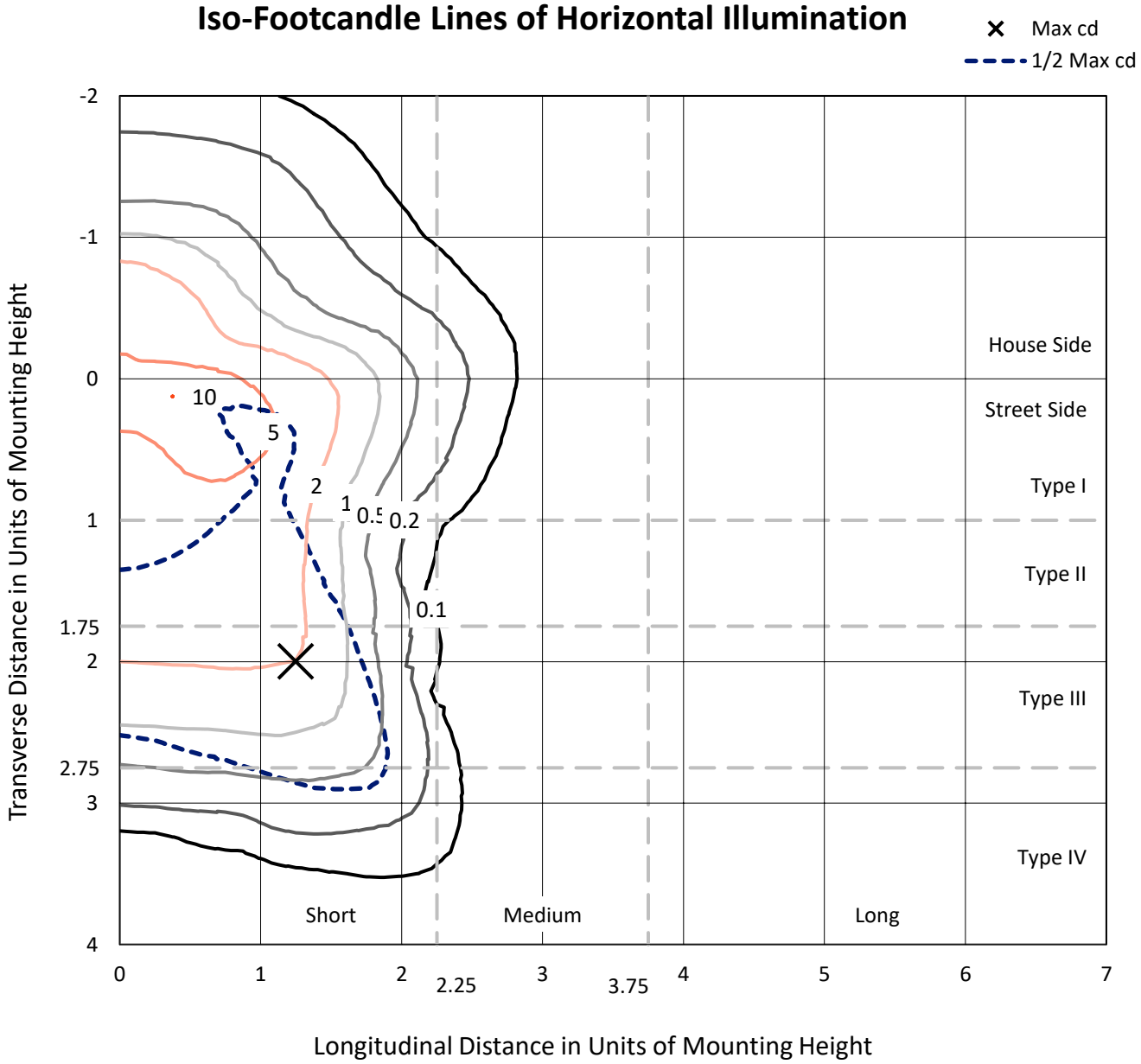
Scaled Data Report

REPORT NUMBER: P1457466
CATALOG NUMBER: GLAN-SB5D-940-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 10 fc
Type IV - Short - N/A

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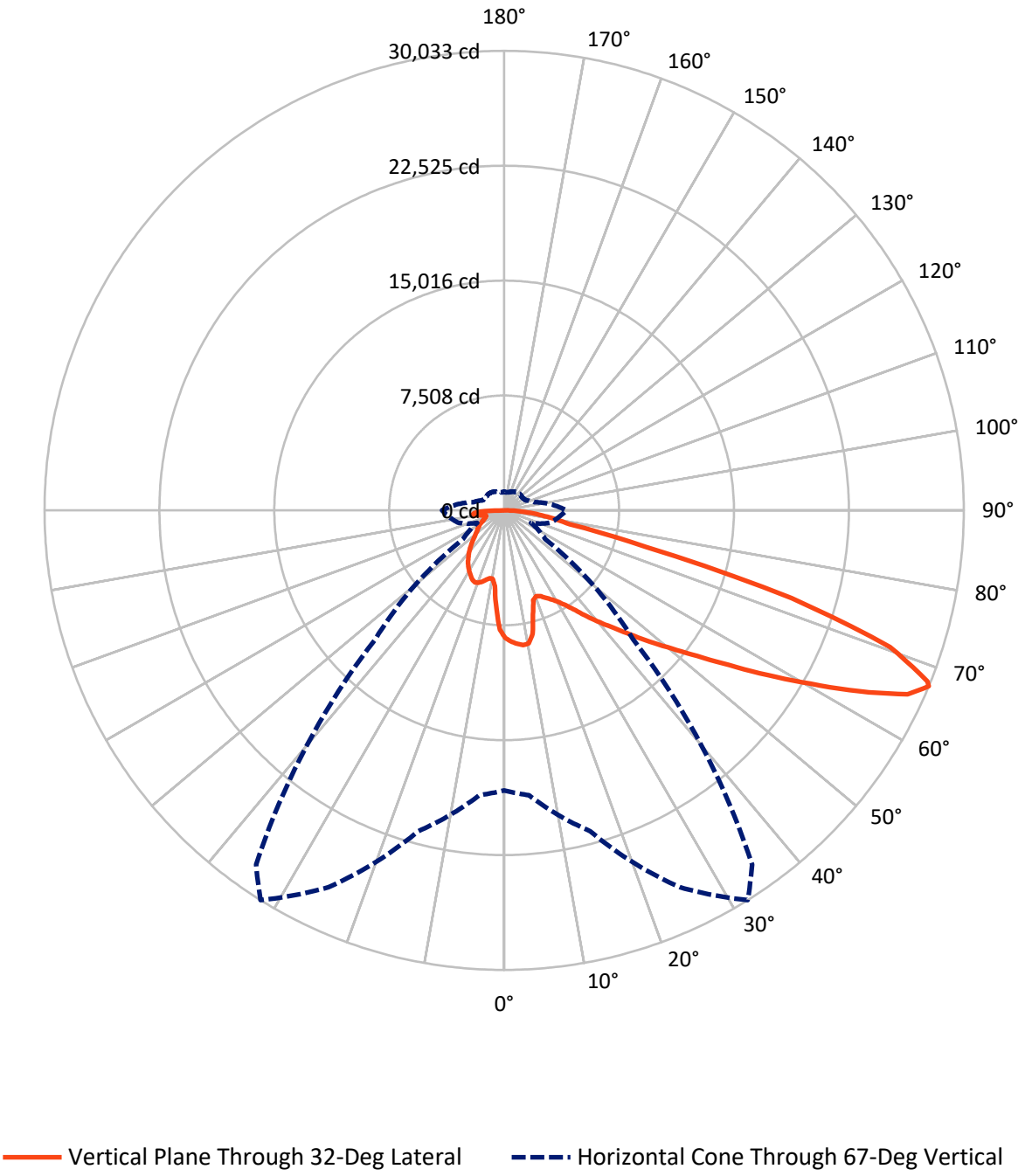
## Luminous Intensity Polar Plot



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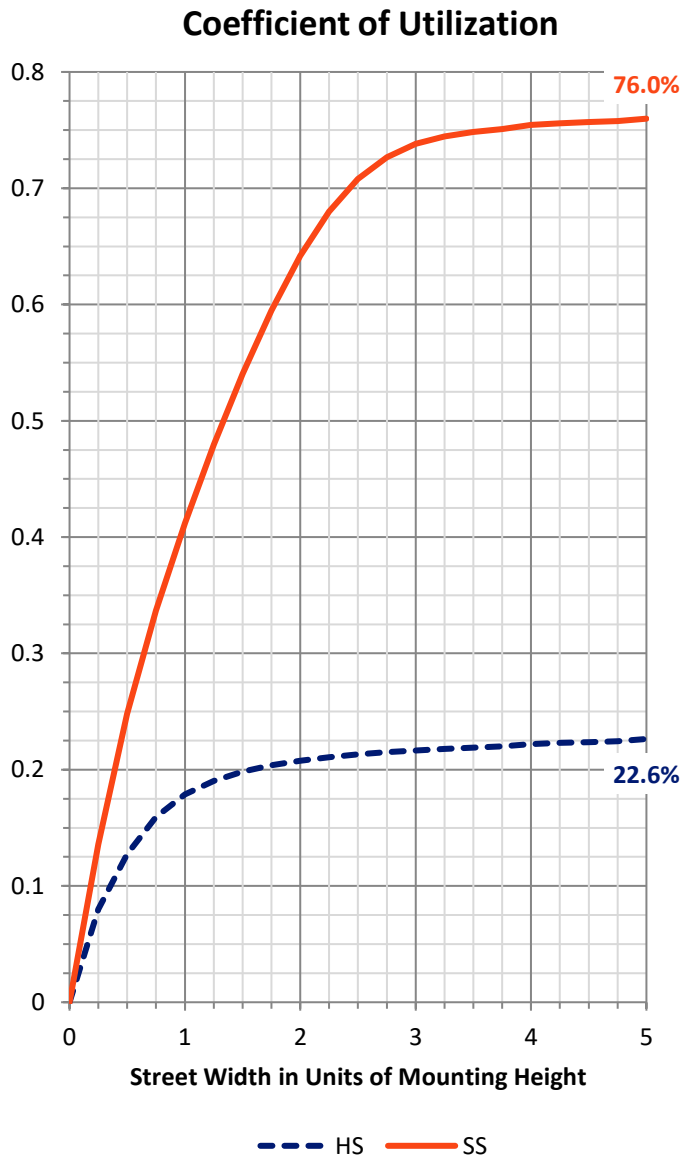
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 8631.2 | 0.0 | 8631.2 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 27826.4 | 0.0 | 27826.4 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 36457.7 | 0.0 | 36457.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 727.8 | 2.0 |
| 10°-20° | 1932.4 | 5.3 |
| 20°-30° | 3155.8 | 8.7 |
| 30°-40° | 4651.3 | 12.8 |
| 40°-50° | 6414.4 | 17.6 |
| 50°-60° | 8103.3 | 22.2 |
| 60°-70° | 7842.5 | 21.5 |
| 70°-80° | 2798.9 | 7.7 |
| 80°-90° | 831.2 | 2.3 |
| 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° | 36457.7 | 100.0 |
| 0°-180° | 36457.7 | 100.0 |



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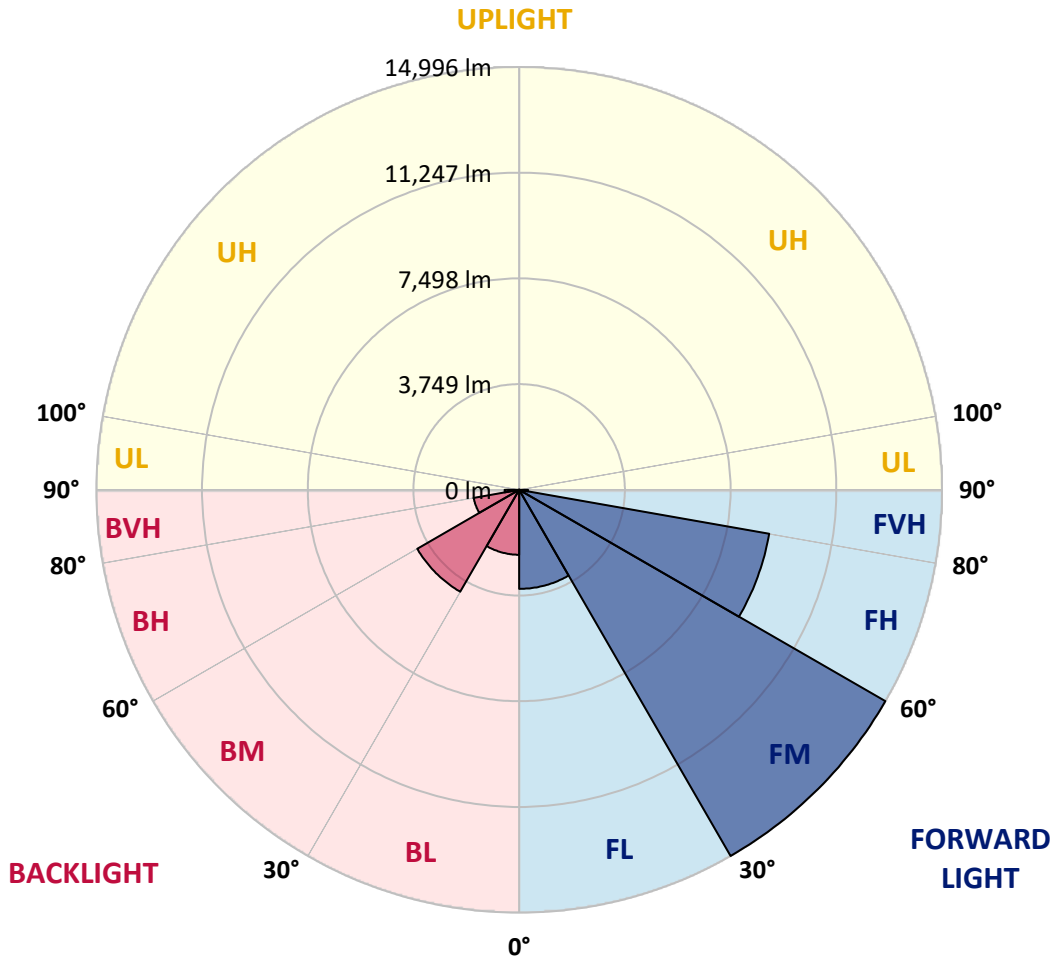
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 3512.8 | 9.6 | | | |
| FM | (30°-60°) | 14996.2 | 41.1 | | | |
| FH | (60°-80°) | 9004.3 | 24.7 | | | G4/12000 |
| FVH | (80°-90°) | 313.2 | 0.9 | | | G3/500 |
| BL | (0°-30°) | 2303.2 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 4172.8 | 11.4 | B3/5000 | | |
| BH | (60°-80°) | 1637.2 | 4.5 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 518.0 | 1.4 | | | G4/750 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G4**
Type IV Short



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REPORT NUMBER: P1457466
CATALOG NUMBER: GLAN-SB5D-940-U-T4LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 8329.8 | 8329.8 | 8329.8 | 8329.8 | *8329.8* | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 |
| 2.5° | 8645.6 | 8621.3 | 8597.0 | 8613.2 | *8580.8* | 8572.7 | 8532.2 | 8516.0 | 8467.5 | 8459.4 | 8370.3 |
| 5° | 8823.7 | 8775.1 | 8767.0 | 8783.2 | *8750.8* | 8750.8 | 8718.4 | 8694.1 | 8621.3 | 8580.8 | 8451.3 |
| 7.5° | 8823.7 | 8815.6 | 8831.7 | 8888.4 | *8896.5* | 8896.5 | 8896.5 | 8904.6 | 8831.7 | 8775.1 | 8572.7 |
| 10° | 8321.8 | 8240.8 | 8418.9 | 8702.2 | *8839.8* | 8920.8 | 9066.5 | 9155.5 | 9098.9 | 9058.4 | 8783.2 |
| 12.5° | 6824.2 | 6832.3 | 7115.6 | 7722.7 | *8273.2* | 8507.9 | 9115.1 | 9438.9 | 9463.2 | 9398.4 | 9050.3 |
| 15° | 5788.0 | 5828.5 | 5974.2 | 6411.3 | *7042.7* | 7390.8 | 8831.7 | 9689.8 | 9884.1 | 9819.3 | 9374.1 |
| 17.5° | 5472.3 | 5496.6 | 5561.3 | 5812.3 | *6168.5* | 6451.8 | 8062.7 | 9851.7 | 10394.1 | 10313.1 | 9738.4 |
| 20° | 5423.7 | 5439.9 | 5520.9 | 5731.3 | *5974.2* | 6136.1 | 7277.5 | 9722.2 | 10871.7 | 10839.3 | 10070.3 |
| 22.5° | 5431.8 | 5448.0 | 5553.2 | 5844.7 | *6095.6* | 6233.2 | 7026.5 | 9422.7 | 11373.6 | 11406.0 | 10410.3 |
| 25° | 5448.0 | 5456.1 | 5618.0 | 6006.6 | *6322.3* | 6492.3 | 7188.4 | 9155.5 | 11794.5 | 12069.8 | 10782.7 |
| 27.5° | 5537.0 | 5561.3 | 5779.9 | 6217.0 | *6589.4* | 6783.7 | 7568.9 | 9244.6 | 12256.0 | 12822.6 | 11227.9 |
| 30° | 5779.9 | 5796.1 | 6063.2 | 6516.5 | *6921.3* | 7123.7 | 8022.2 | 9600.8 | 12822.6 | 13599.8 | 11665.0 |
| 32.5° | 6160.4 | 6176.6 | 6484.2 | 6953.7 | *7390.8* | 7633.7 | 8613.2 | 10280.8 | 13454.0 | 14417.4 | 12102.2 |
| 35° | 6686.5 | 6694.6 | 7042.7 | 7544.6 | *8006.0* | 8281.3 | 9301.3 | 11049.8 | 14109.7 | 15113.5 | 12426.0 |
| 37.5° | 7309.9 | 7366.5 | 7722.7 | 8248.9 | *8791.3* | 9042.2 | 10110.8 | 11948.4 | 14692.6 | 15704.5 | 12612.2 |
| 40° | 8167.9 | 8184.1 | 8532.2 | 9042.2 | *9617.0* | 9859.8 | 10920.3 | 12798.3 | 15332.1 | 16052.6 | 12782.2 |
| 42.5° | 9050.3 | 9187.9 | 9479.4 | 10046.0 | *10475.0* | 10669.3 | 11843.1 | 13575.5 | 15842.1 | 16068.8 | 12709.3 |
| 45° | 10232.2 | 10337.4 | 10628.9 | 11130.8 | *11559.8* | 11786.5 | 12838.8 | 14287.8 | 16101.1 | 15931.1 | 12547.4 |
| 47.5° | 11584.1 | 11648.8 | 11883.6 | 12336.9 | *12814.5* | 12976.4 | 13875.0 | 14692.6 | 16198.3 | 15834.0 | 12474.5 |
| 50° | 13178.8 | 13178.8 | 13348.8 | 13737.4 | *14174.5* | 14401.2 | 14830.2 | 14935.4 | 16481.6 | 15664.0 | 12660.7 |
| 52.5° | 14522.6 | 14587.4 | 14814.0 | 15364.5 | *15801.6* | 16060.7 | 15575.0 | 15307.8 | 15906.9 | 14716.9 | 12717.4 |
| 55° | 15809.7 | 15882.6 | 16392.6 | 17080.6 | *17825.4* | 18108.7 | 16505.9 | 15121.6 | 13972.1 | 13332.6 | 12328.8 |
| 57.5° | 17040.2 | 17194.0 | 17833.5 | 19177.3 | *20302.5* | 20278.2 | 17687.8 | 13454.0 | 11406.0 | 11802.6 | 11478.8 |
| 60° | 18756.3 | 18918.2 | 19938.2 | 21630.1 | *23006.3* | 22431.5 | 17704.0 | 11195.5 | 8888.4 | 9422.7 | 9884.1 |
| 62.5° | 20189.2 | 20464.4 | 21962.0 | 24779.1 | *26041.9* | 25143.4 | 16238.8 | 8572.7 | 5901.3 | 6573.2 | 7641.8 |
| 65° | 20059.6 | 20423.9 | 22747.2 | 27094.3 | *28980.4* | 28146.6 | 14093.6 | 5423.7 | 3043.8 | 4492.8 | 5350.9 |
| 67° | *18294.9* | *18691.6* | *21702.9* | *27175.2* | *30032.8* | *28251.9* | *11899.8* | *3278.5* | *1934.7* | *3116.6* | *3715.6* |
| 67.5° | 17283.0 | 17865.9 | 21184.9 | 27021.4 | *29838.5* | 27806.6 | 10912.2 | 2744.2 | 1821.4 | 2898.0 | 3383.7 |
| 70° | 10628.9 | 11567.9 | 15898.8 | 23888.6 | *26746.2* | 23273.4 | 6063.2 | 1554.3 | 1481.4 | 1942.8 | 2339.5 |
| 72.5° | 3197.6 | 3480.9 | 6136.1 | 15324.0 | *19630.6* | 17250.6 | 2728.0 | 1198.1 | 1327.6 | 1562.4 | 1805.2 |
| 75° | 1554.3 | 1659.5 | 2533.8 | 6265.6 | *9560.3* | 9511.7 | 1521.9 | 1028.1 | 1230.5 | 1311.4 | 1424.7 |
| 77.5° | 995.7 | 1060.5 | 1578.5 | 3505.2 | *4379.4* | 3901.8 | 1100.9 | 898.6 | 1092.8 | 1076.6 | 1060.5 |
| 80° | 623.3 | 655.7 | 1011.9 | 2031.9 | *3229.9* | 2695.7 | 809.5 | 736.7 | 939.0 | 833.8 | 752.8 |
| 82.5° | 404.8 | 445.2 | 647.6 | 1238.5 | *2307.1* | 2007.6 | 534.3 | 526.2 | 777.1 | 663.8 | 582.8 |
| 85° | 267.1 | 299.5 | 412.8 | 728.6 | *1368.1* | 1432.8 | 348.1 | 364.3 | 599.0 | 501.9 | 445.2 |
| 87.5° | 97.1 | 121.4 | 210.5 | 323.8 | *639.5* | 793.3 | 145.7 | 137.6 | 291.4 | 234.8 | 186.2 |
| 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: P1457466
CATALOG NUMBER: GLAN-SB5D-940-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 | 8329.8 |
| 2.5° | 8354.1 | 8329.8 | 8216.5 | 8119.4 | 8046.5 | 7949.4 | 7844.1 | 7722.7 | 7641.8 | 7658.0 | 7633.7 |
| 5° | 8394.6 | 8329.8 | 8111.3 | 7779.4 | 7455.6 | 7050.8 | 6532.7 | 6225.1 | 5990.4 | 5868.9 | 5901.3 |
| 7.5° | 8483.7 | 8370.3 | 7908.9 | 7237.0 | 6395.1 | 5569.4 | 5059.4 | 4768.0 | 4630.4 | 4573.7 | 4565.6 |
| 10° | 8637.5 | 8443.2 | 7649.9 | 6395.1 | 5294.2 | 4735.6 | 4549.4 | 4468.5 | 4452.3 | 4452.3 | 4444.2 |
| 12.5° | 8823.7 | 8516.0 | 7212.7 | 5577.5 | 4768.0 | 4565.6 | 4533.3 | 4541.3 | 4565.6 | 4589.9 | 4549.4 |
| 15° | 9050.3 | 8548.4 | 6670.4 | 5083.7 | 4662.8 | 4614.2 | 4662.8 | 4719.4 | 4759.9 | 4792.3 | 4751.8 |
| 17.5° | 9277.0 | 8516.0 | 6160.4 | 4849.0 | 4679.0 | 4743.7 | 4840.9 | 4929.9 | 4954.2 | 5002.8 | 4970.4 |
| 20° | 9438.9 | 8402.7 | 5723.2 | 4759.9 | 4719.4 | 4865.2 | 4986.6 | 5083.7 | 5132.3 | 5164.7 | 5132.3 |
| 22.5° | 9560.3 | 8257.0 | 5407.5 | 4670.9 | 4719.4 | 4897.5 | 5043.2 | 5156.6 | 5213.2 | 5245.6 | 5205.1 |
| 25° | 9665.5 | 8054.6 | 5164.7 | 4541.3 | 4622.3 | 4792.3 | 4954.2 | 5067.5 | 5148.5 | 5197.0 | 5172.8 |
| 27.5° | 9795.1 | 7892.7 | 4938.0 | 4347.1 | 4419.9 | 4581.8 | 4751.8 | 4889.4 | 5043.2 | 5124.2 | 5108.0 |
| 30° | 9940.8 | 7811.8 | 4719.4 | 4136.6 | 4185.2 | 4347.1 | 4549.4 | 4735.6 | 4946.1 | 5051.3 | 5051.3 |
| 32.5° | 10110.8 | 7755.1 | 4517.1 | 3934.2 | 3974.7 | 4152.8 | 4347.1 | 4517.1 | 4743.7 | 4913.7 | 4905.6 |
| 35° | 10183.6 | 7690.3 | 4355.2 | 3748.0 | 3829.0 | 3974.7 | 4128.5 | 4241.8 | 4476.6 | 4679.0 | 4695.2 |
| 37.5° | 10256.5 | 7666.1 | 4274.2 | 3602.3 | 3667.1 | 3780.4 | 3861.4 | 3918.0 | 4136.6 | 4347.1 | 4355.2 |
| 40° | 10345.5 | 7779.4 | 4330.9 | 3505.2 | 3448.5 | 3561.8 | 3602.3 | 3634.7 | 3748.0 | 3885.6 | 3885.6 |
| 42.5° | 10288.9 | 7860.3 | 4460.4 | 3416.1 | 3181.4 | 3310.9 | 3327.1 | 3319.0 | 3327.1 | 3335.2 | 3327.1 |
| 45° | 10143.2 | 7779.4 | 4460.4 | 3278.5 | 2898.0 | 3035.7 | 3027.6 | 2987.1 | 2922.3 | 2752.3 | 2728.0 |
| 47.5° | 10110.8 | 7730.8 | 4290.4 | 3051.8 | 2614.7 | 2728.0 | 2744.2 | 2663.3 | 2477.1 | 2299.0 | 2242.3 |
| 50° | 10248.4 | 7819.9 | 4023.3 | 2776.6 | 2371.9 | 2469.0 | 2509.5 | 2371.9 | 2161.4 | 1975.2 | 1942.8 |
| 52.5° | 10450.8 | 7933.2 | 3634.7 | 2477.1 | 2169.5 | 2266.6 | 2315.2 | 2161.4 | 1942.8 | 1797.1 | 1780.9 |
| 55° | 10426.5 | 7933.2 | 3197.6 | 2201.9 | 2015.7 | 2088.5 | 2169.5 | 2007.6 | 1837.6 | 1756.6 | 1748.5 |
| 57.5° | 9900.3 | 7633.7 | 2873.8 | 2007.6 | 1870.0 | 1934.7 | 2040.0 | 1886.2 | 1724.3 | 1740.4 | 1764.7 |
| 60° | 8872.2 | 6856.5 | 2630.9 | 1878.1 | 1740.4 | 1805.2 | 1918.5 | 1740.4 | 1530.0 | 1473.3 | 1473.3 |
| 62.5° | 7309.9 | 5650.4 | 2436.6 | 1748.5 | 1619.0 | 1700.0 | 1756.6 | 1521.9 | 1384.3 | 1319.5 | 1319.5 |
| 65° | 5480.4 | 4371.3 | 2234.2 | 1643.3 | 1513.8 | 1602.8 | 1538.1 | 1424.7 | 1287.1 | 1238.5 | 1246.6 |
| 67° | *4063.7* | *3391.8* | *2064.2* | *1554.3* | *1449.0* | *1489.5* | *1440.9* | *1360.0* | *1222.4* | *1181.9* | *1222.4* |
| 67.5° | 3650.9 | 3221.8 | 2023.8 | 1530.0 | 1432.8 | 1465.2 | 1416.6 | 1351.9 | 1206.2 | 1165.7 | 1206.2 |
| 70° | 2509.5 | 2477.1 | 1805.2 | 1416.6 | 1343.8 | 1311.4 | 1335.7 | 1254.7 | 1133.3 | 1117.1 | 1157.6 |
| 72.5° | 1910.4 | 1975.2 | 1619.0 | 1319.5 | 1246.6 | 1206.2 | 1262.8 | 1181.9 | 1060.5 | 1084.7 | 1125.2 |
| 75° | 1497.6 | 1594.7 | 1449.0 | 1181.9 | 1133.3 | 1141.4 | 1254.7 | 1222.4 | 1125.2 | 1149.5 | 1157.6 |
| 77.5° | 1109.0 | 1287.1 | 1238.5 | 1028.1 | 987.6 | 1100.9 | 1416.6 | 1513.8 | 1343.8 | 1303.3 | 1246.6 |
| 80° | 809.5 | 922.8 | 1044.3 | 850.0 | 825.7 | 1060.5 | 1748.5 | 1934.7 | 1659.5 | 1497.6 | 1457.1 |
| 82.5° | 599.0 | 647.6 | 858.1 | 680.0 | 599.0 | 947.1 | 1942.8 | 2274.7 | 1975.2 | 1667.6 | 1619.0 |
| 85° | 429.0 | 501.9 | 680.0 | 501.9 | 396.7 | 777.1 | 1902.3 | 2226.2 | 1959.0 | 1578.5 | 1538.1 |
| 87.5° | 153.8 | 218.6 | 291.4 | 226.7 | 202.4 | 534.3 | 1570.4 | 1602.8 | 1222.4 | 558.6 | 566.7 |
| 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: SP1-2407-184-16

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-940-U-5WQ

Data in this report applies to families of products including GSS-SB1A-940-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

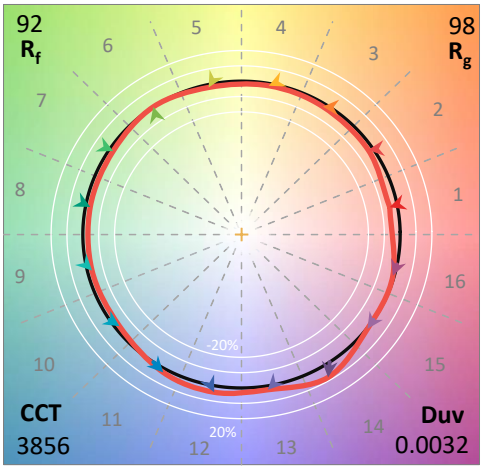
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-16 |
| 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-940-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 90 CRI 4000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3856 |
| CIE u': | 0.2261 |
| CIE v': | 0.5084 |
| Duv: | 0.0032 |
| CIE x: | 0.3896 |
| CIE y: | 0.3894 |
| CIE z: | 0.2211 |
| Peak Wavelength (nm): | 614 |
| Dominant Wavelength (nm): | 578 |
| Purity: | 33.77304 |
| Rf: | 91.8 |
| Rg: | 98.4 |

| | |
|---|---|
| CRI (Ra): | 92.1 |
| R1: | 91.8 |
| R2: | 94.1 |
| R3: | 95.3 |
| R4: | 92.8 |
| R5: | 91.0 |
| R6: | 91.6 |
| R7: | 95.0 |
| R8: | 85.2 |
| R9: | 60.7 |
| R10: | 85.2 |
| R11: | 92.4 |
| R12: | 74.5 |
| R13: | 92.3 |
| R14: | 97.0 |
| R15: | 88.5 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 23M |
| Operation Time: | 1H 23M |
| 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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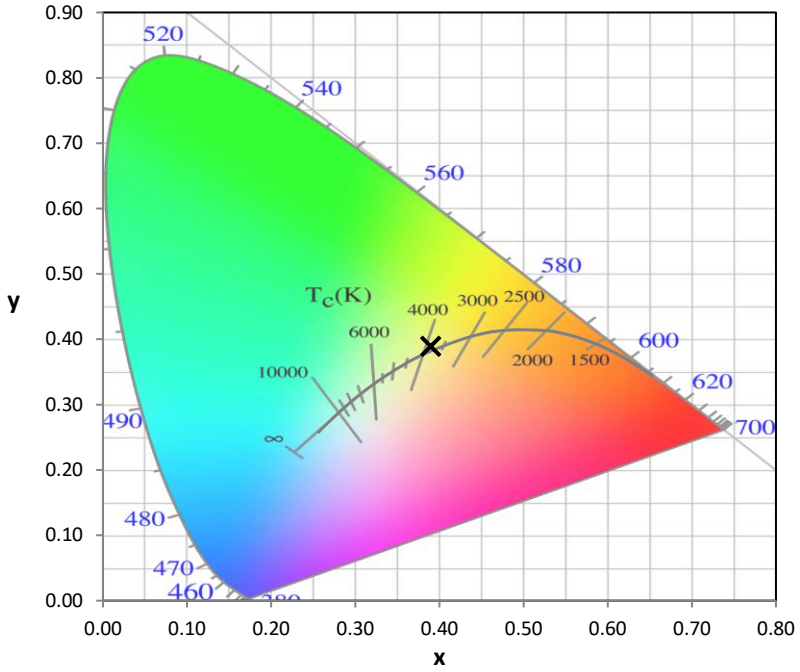
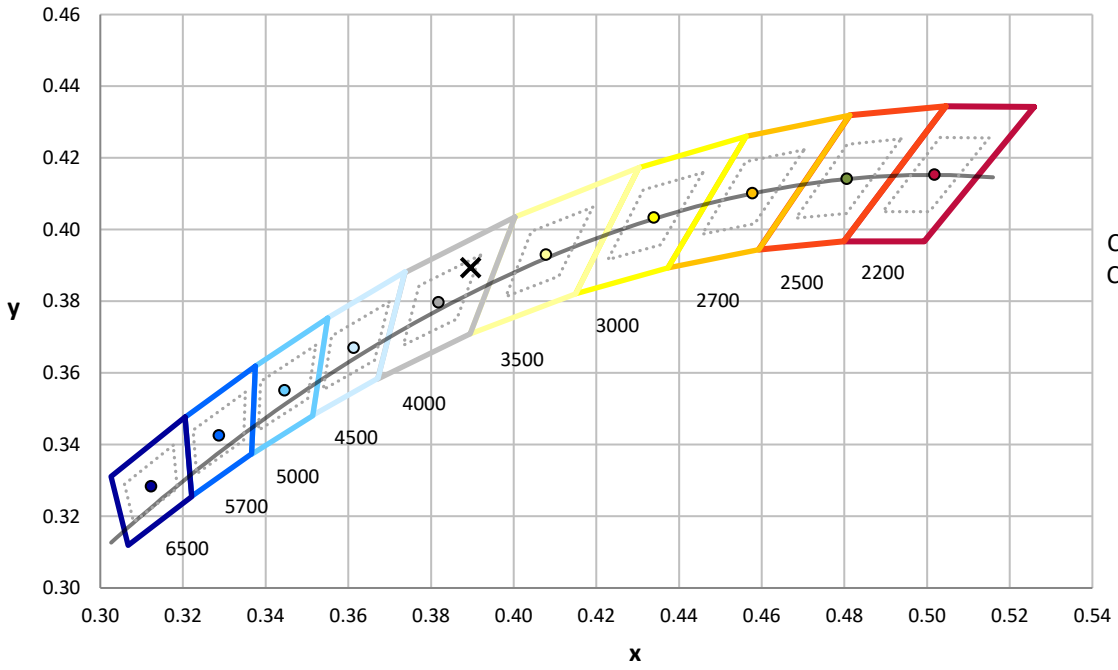
## CIE 1931 Chromaticity Diagram




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




CCT = 3856K
CIE x = 0.3896
CIE y = 0.3894
Duv = 0.0032

Point lies inside the ANSI 4000K 4-step quadrangle

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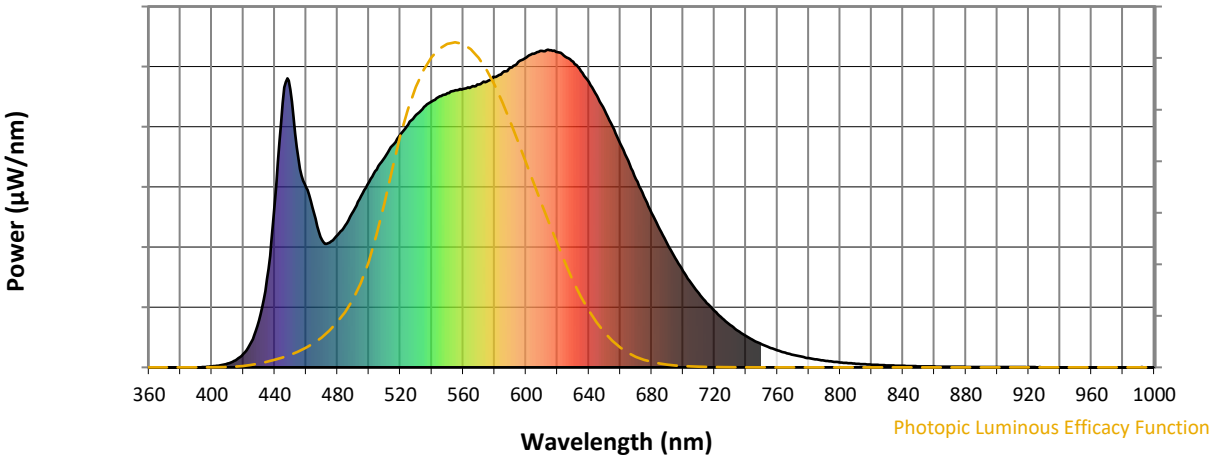
## Photopic Flux vs. Wavelength




## 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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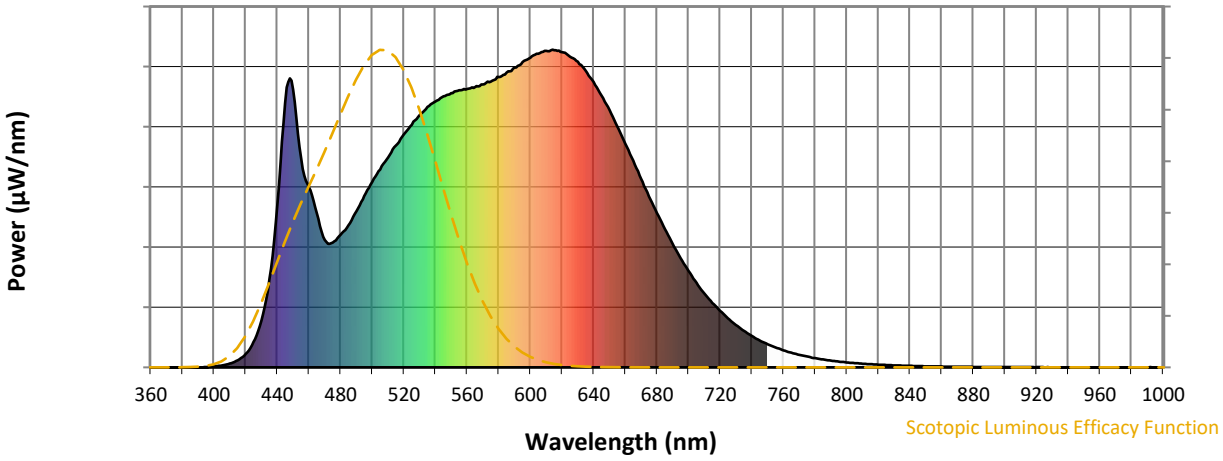
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.72**

| 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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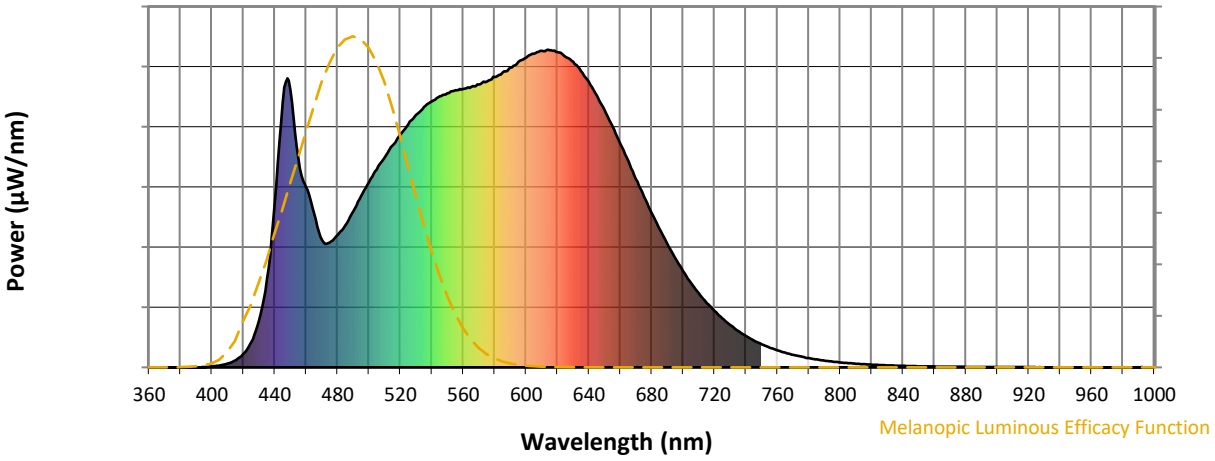
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.52**

| 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 | 492 | NR | 620 | 993 | NR | 750 | 73 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 539 | NR | 625 | 978 | NR | 755 | 62 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 583 | NR | 630 | 962 | NR | 760 | 54 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 623 | NR | 635 | 933 | NR | 765 | 46 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 661 | NR | 640 | 898 | NR | 770 | 39 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 698 | NR | 645 | 855 | NR | 775 | 34 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 733 | NR | 650 | 810 | NR | 780 | 29 | NR | 910 | 1 | NR |
| 395 | 1 | NR | 525 | 764 | NR | 655 | 759 | NR | 785 | 25 | NR | 915 | 1 | NR |
| 400 | 3 | NR | 530 | 794 | NR | 660 | 704 | NR | 790 | 21 | NR | 920 | 1 | NR |
| 405 | 6 | NR | 535 | 820 | NR | 665 | 651 | NR | 795 | 18 | NR | 925 | 1 | NR |
| 410 | 12 | NR | 540 | 837 | NR | 670 | 592 | NR | 800 | 16 | NR | 930 | 1 | NR |
| 415 | 22 | NR | 545 | 853 | NR | 675 | 538 | NR | 805 | 13 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 864 | NR | 680 | 486 | NR | 810 | 12 | NR | 940 | 0 | NR |
| 425 | 79 | NR | 555 | 872 | NR | 685 | 435 | NR | 815 | 10 | NR | 945 | 0 | NR |
| 430 | 147 | NR | 560 | 876 | NR | 690 | 389 | NR | 820 | 9 | NR | 950 | 0 | NR |
| 435 | 278 | NR | 565 | 883 | NR | 695 | 344 | NR | 825 | 7 | NR | 955 | 0 | NR |
| 440 | 515 | NR | 570 | 891 | NR | 700 | 303 | NR | 830 | 6 | NR | 960 | 0 | NR |
| 445 | 832 | NR | 575 | 900 | NR | 705 | 266 | NR | 835 | 5 | NR | 965 | 0 | NR |
| 450 | 874 | NR | 580 | 914 | NR | 710 | 233 | NR | 840 | 5 | NR | 970 | 0 | NR |
| 455 | 659 | NR | 585 | 927 | NR | 715 | 203 | NR | 845 | 4 | NR | 975 | 0 | NR |
| 460 | 567 | NR | 590 | 944 | NR | 720 | 178 | NR | 850 | 4 | NR | 980 | 0 | NR |
| 465 | 485 | NR | 595 | 961 | NR | 725 | 154 | NR | 855 | 3 | NR | 985 | 0 | NR |
| 470 | 401 | NR | 600 | 975 | NR | 730 | 133 | NR | 860 | 3 | NR | 990 | 0 | NR |
| 475 | 393 | NR | 605 | 988 | NR | 735 | 115 | NR | 865 | 2 | NR | 995 | 1 | NR |
| 480 | 417 | NR | 610 | 996 | NR | 740 | 98 | NR | 870 | 2 | NR | 1000 | 0 | NR |
| 485 | 448 | NR | 615 | 998 | NR | 745 | 85 | NR | 875 | 2 | NR | | | |

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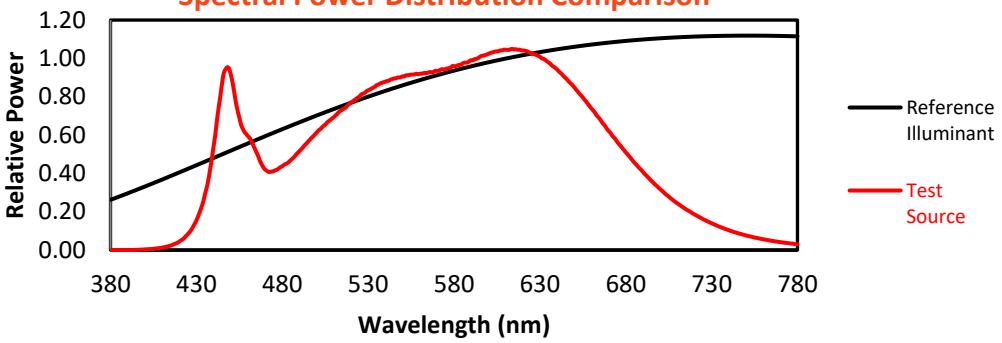
# TM-30-18

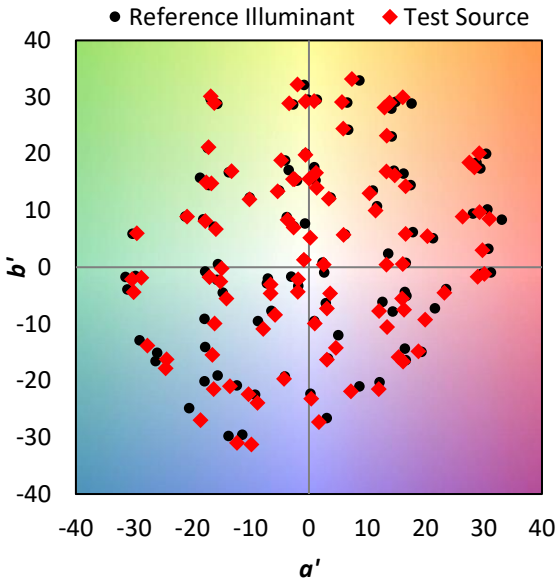
## Summary

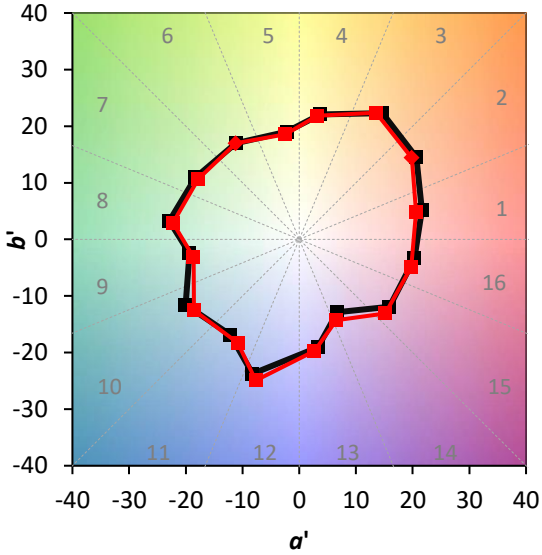
$R_f$ = 91.8
$R_g$ = 98.4
CIE $R_a$ = 92.1
$R_9$ = 60.7

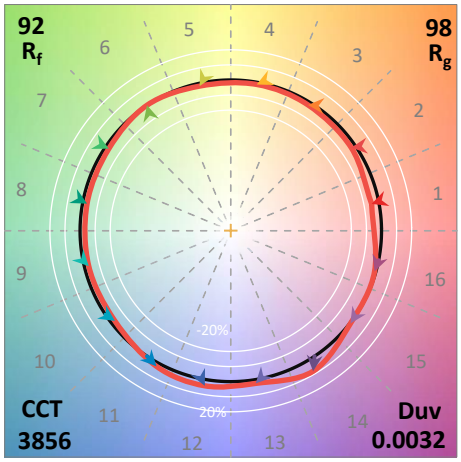
## Spectral Power Distribution Comparison

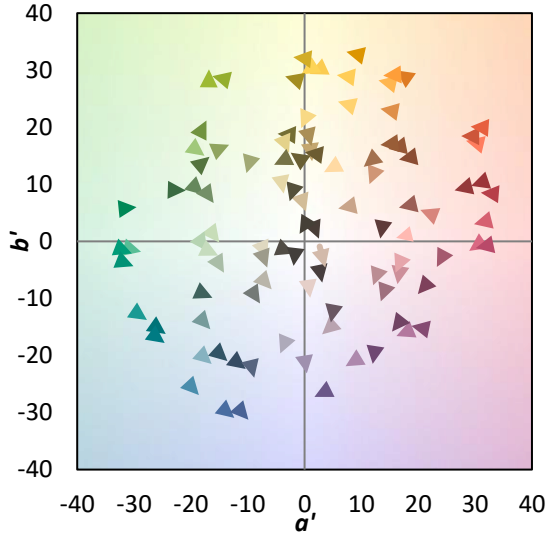



## Color Vector Graphics



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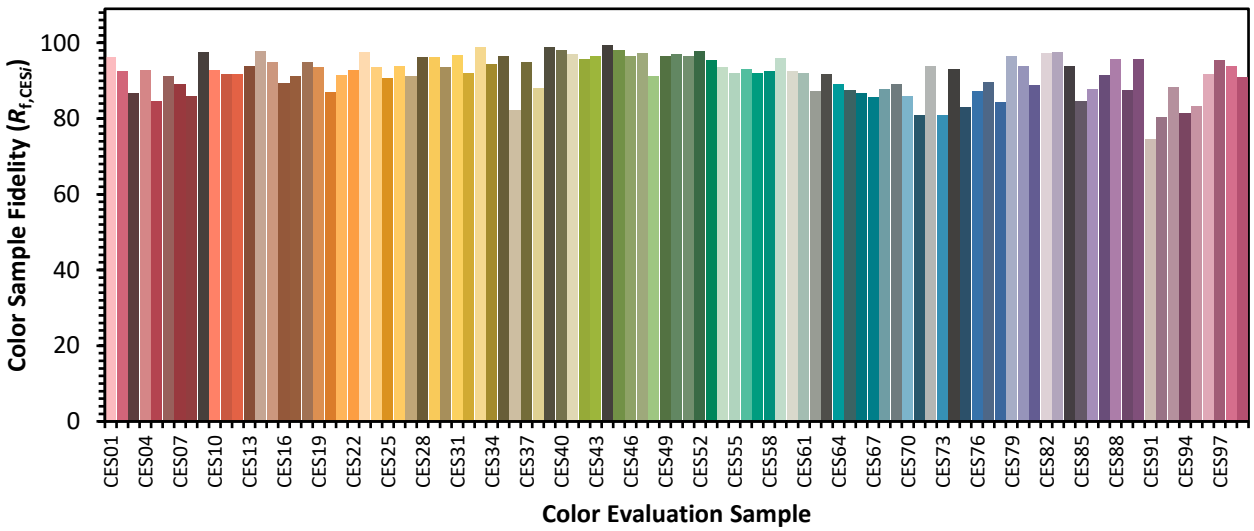
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 94 | CES51 = 96 | CES76 = 87 |
| CES02 = 62 | CES27 = 91 | CES52 = 98 | CES77 = 90 |
| CES03 = 31 | CES28 = 96 | CES53 = 95 | CES78 = 84 |
| CES04 = 69 | CES29 = 96 | CES54 = 94 | CES79 = 96 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 94 |
| CES06 = 50 | CES31 = 97 | CES56 = 93 | CES81 = 89 |
| CES07 = 42 | CES32 = 92 | CES57 = 92 | CES82 = 97 |
| CES08 = 41 | CES33 = 99 | CES58 = 92 | CES83 = 98 |
| CES09 = 29 | CES34 = 94 | CES59 = 96 | CES84 = 94 |
| CES10 = 74 | CES35 = 96 | CES60 = 93 | CES85 = 85 |
| CES11 = 57 | CES36 = 82 | CES61 = 92 | CES86 = 88 |
| CES12 = 63 | CES37 = 95 | CES62 = 87 | CES87 = 92 |
| CES13 = 43 | CES38 = 88 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 89 | CES89 = 87 |
| CES15 = 71 | CES40 = 98 | CES65 = 88 | CES90 = 96 |
| CES16 = 47 | CES41 = 97 | CES66 = 87 | CES91 = 74 |
| CES17 = 49 | CES42 = 96 | CES67 = 86 | CES92 = 80 |
| CES18 = 56 | CES43 = 96 | CES68 = 88 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 89 | CES94 = 82 |
| CES20 = 66 | CES45 = 98 | CES70 = 86 | CES95 = 83 |
| CES21 = 85 | CES46 = 97 | CES71 = 81 | CES96 = 92 |
| CES22 = 78 | CES47 = 97 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 91 | CES73 = 81 | CES98 = 94 |
| CES24 = 90 | CES49 = 96 | CES74 = 93 | CES99 = 91 |
| CES25 = 71 | CES50 = 97 | CES75 = 83 | |



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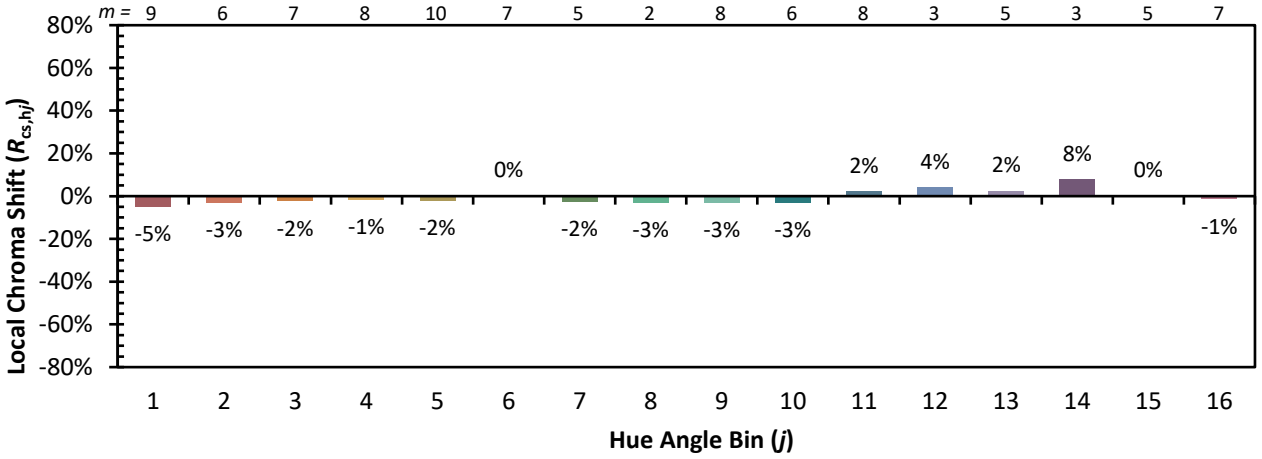
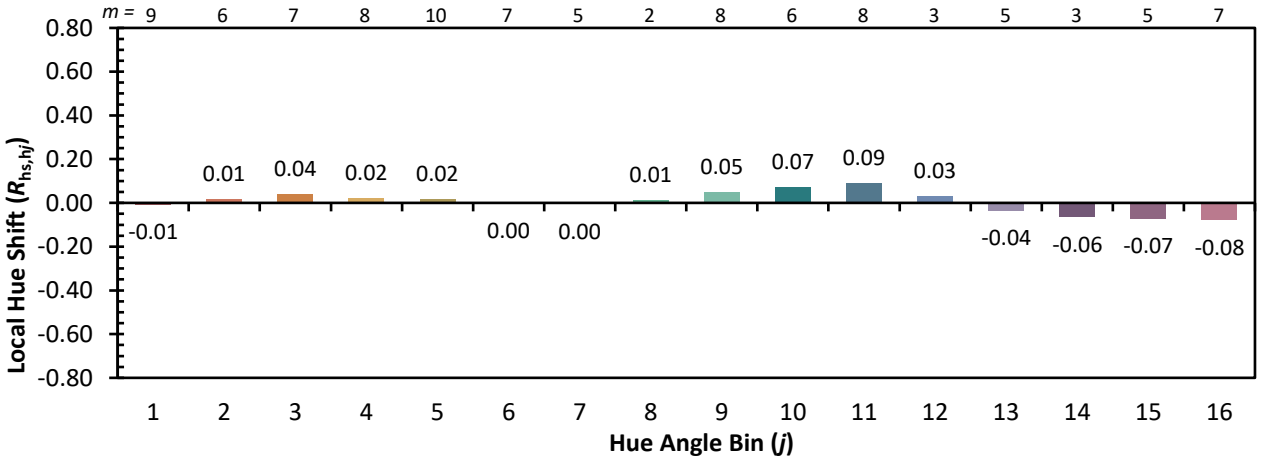
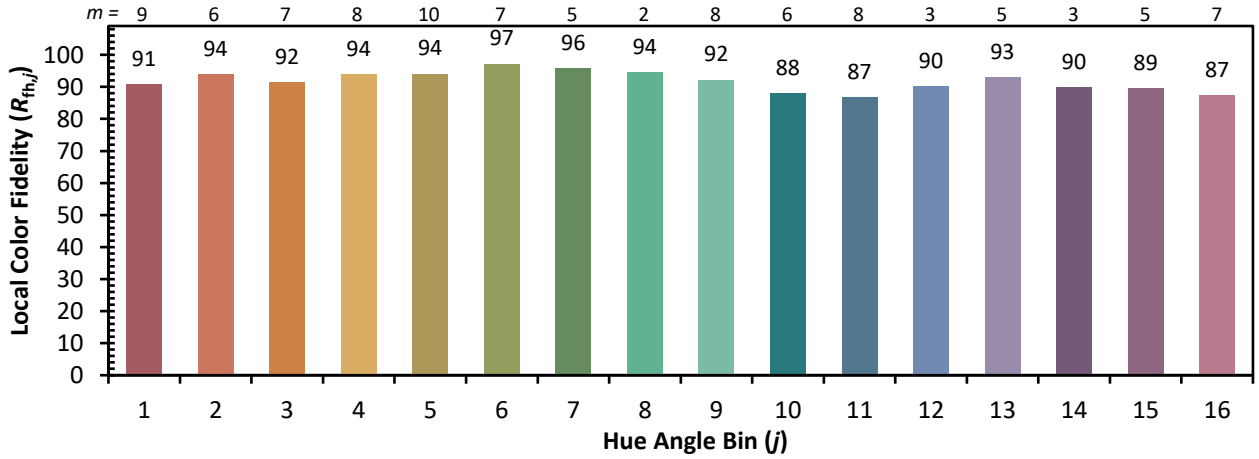
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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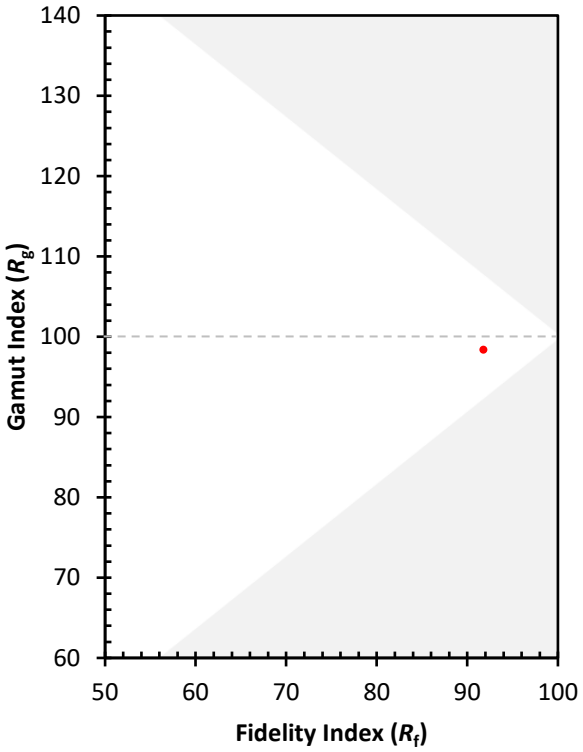
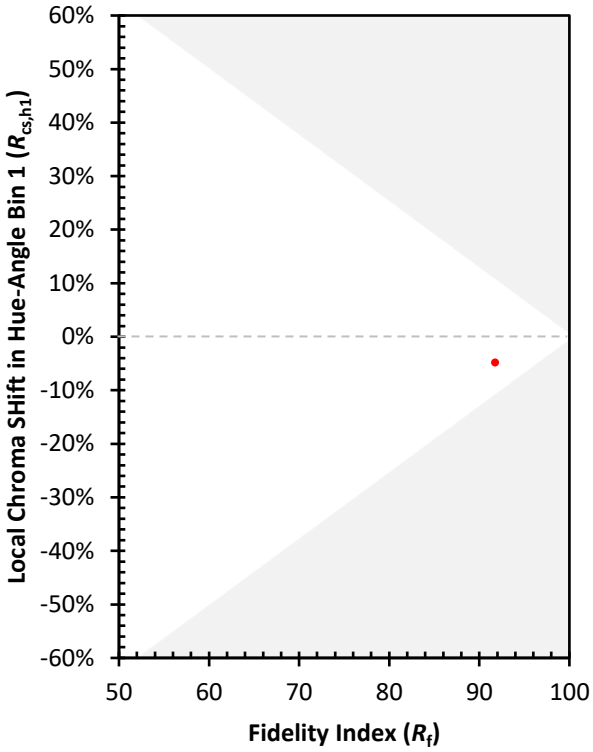
# TM-30-18

## Measure Comparisons




(END OF REPORT)