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: P1457442

Luminaire Tested: GLAN-SB8D-935-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: | P1457442 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB8D-935-U-T4LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 900mA 8xLight Square PACKAGE 90CRI 3500K FIXTURE w/ TYPE IV LOW GLARE |
| Light Source: | (208) 3500K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 56060.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 95.8 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B4 - U0 - G5 |

| | |
|---|---|
| Input Watts (W): | 584.9 |
| 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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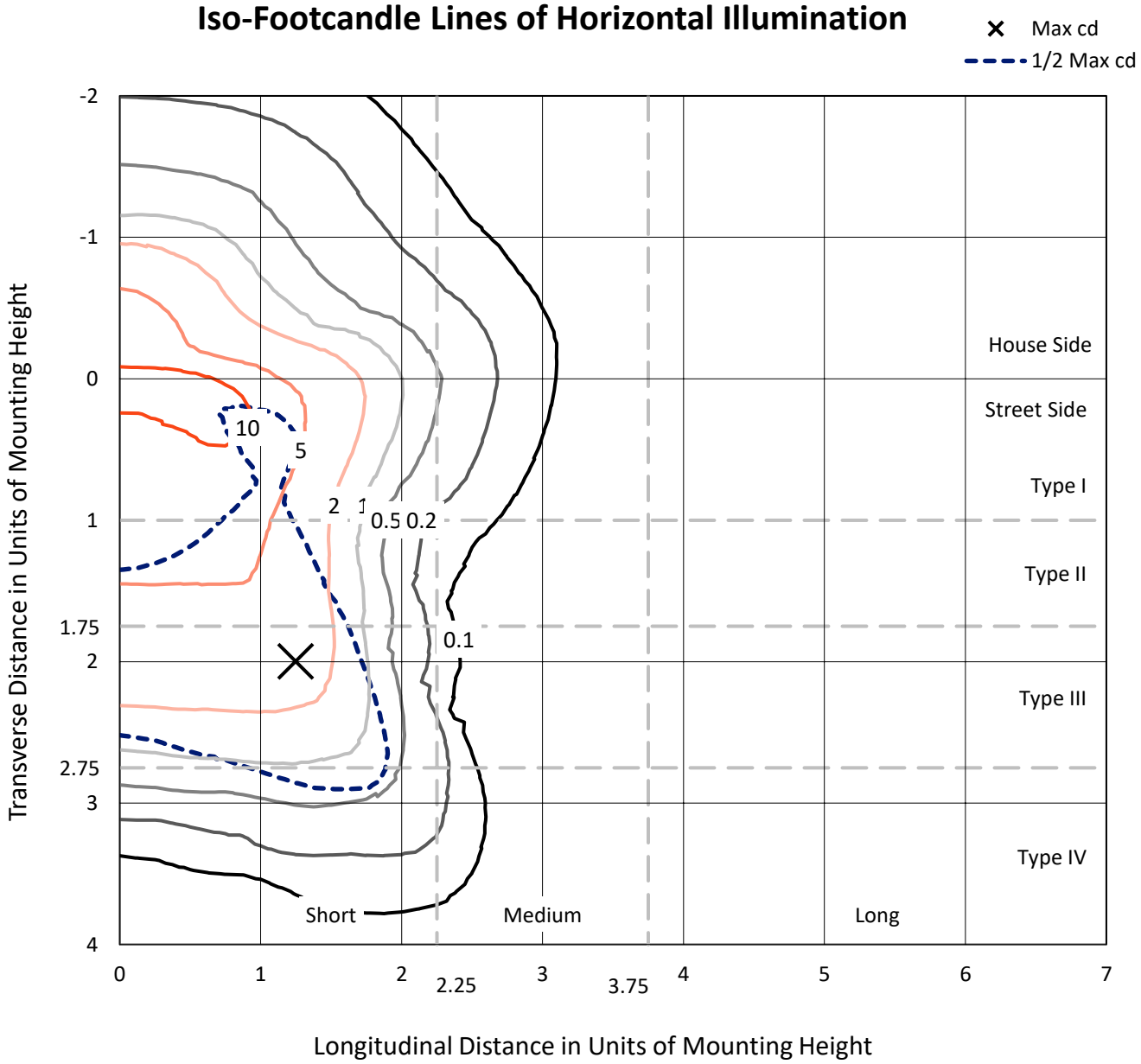
Scaled Data Report

REPORT NUMBER: P1457442
CATALOG NUMBER: GLAN-SB8D-935-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 15.4 fc
Type IV - Short - N/A

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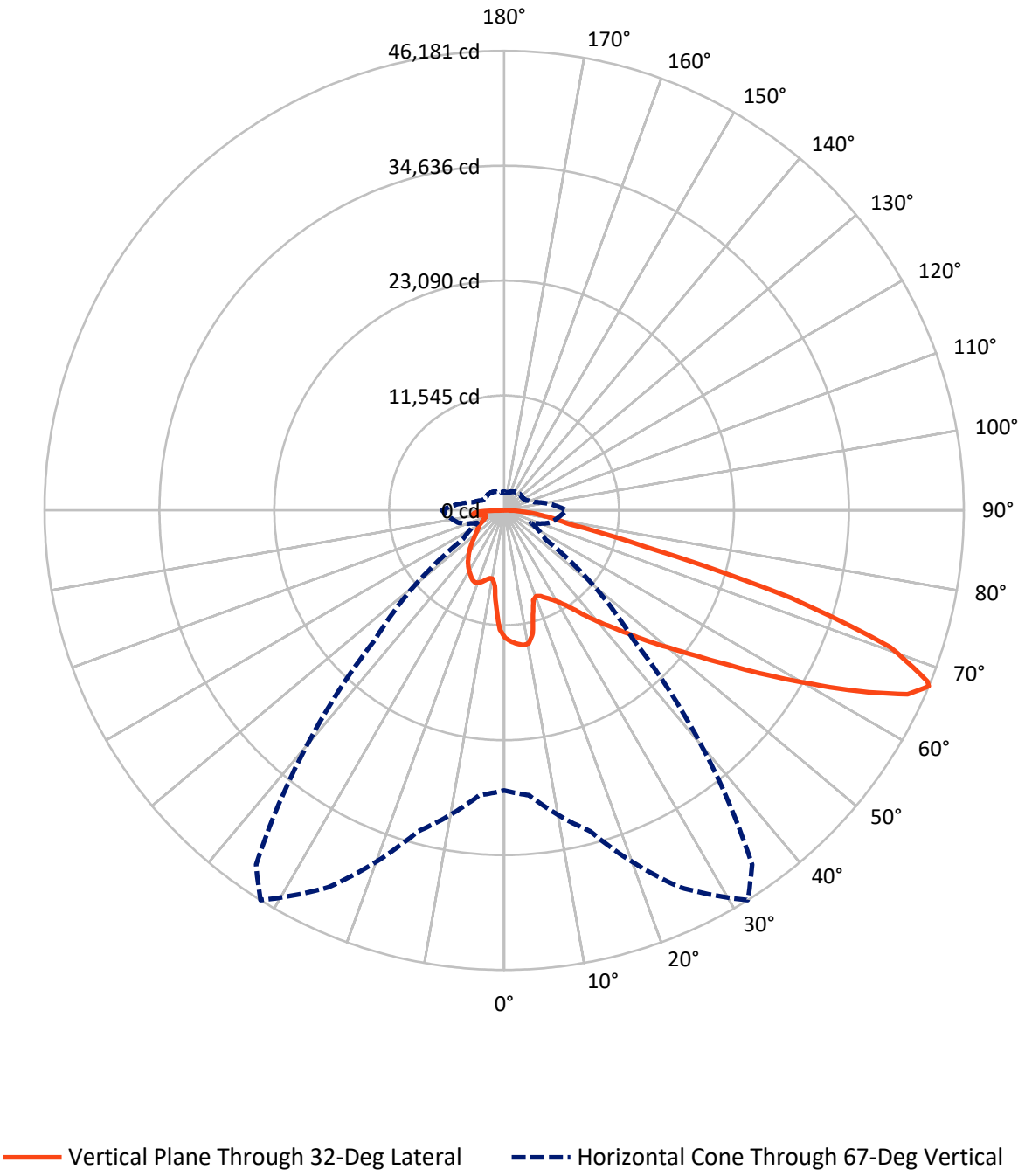
## Luminous Intensity Polar Plot



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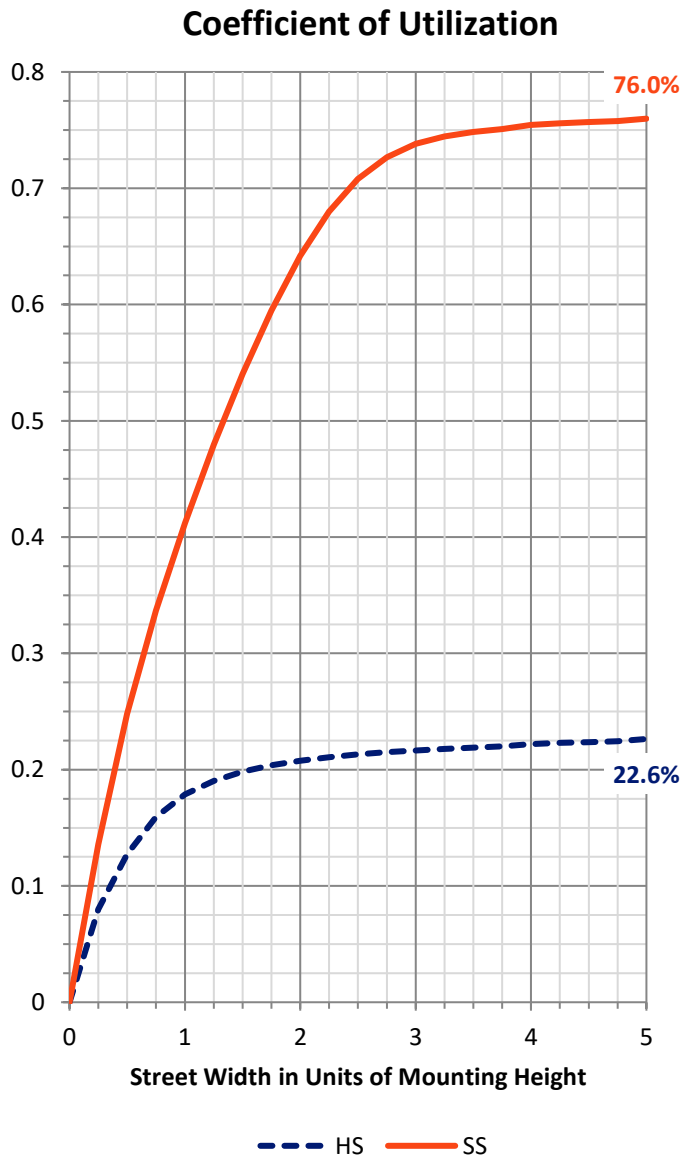
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 13272.0 | 0.0 | 13272.0 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 42788.1 | 0.0 | 42788.1 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 56060.2 | 0.0 | 56060.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 1119.2 | 2.0 |
| 10°-20° | 2971.5 | 5.3 |
| 20°-30° | 4852.5 | 8.7 |
| 30°-40° | 7152.2 | 12.8 |
| 40°-50° | 9863.3 | 17.6 |
| 50°-60° | 12460.3 | 22.2 |
| 60°-70° | 12059.3 | 21.5 |
| 70°-80° | 4303.9 | 7.7 |
| 80°-90° | 1278.1 | 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° | 56060.2 | 100.0 |
| 0°-180° | 56060.2 | 100.0 |



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REPORT NUMBER: P1457442
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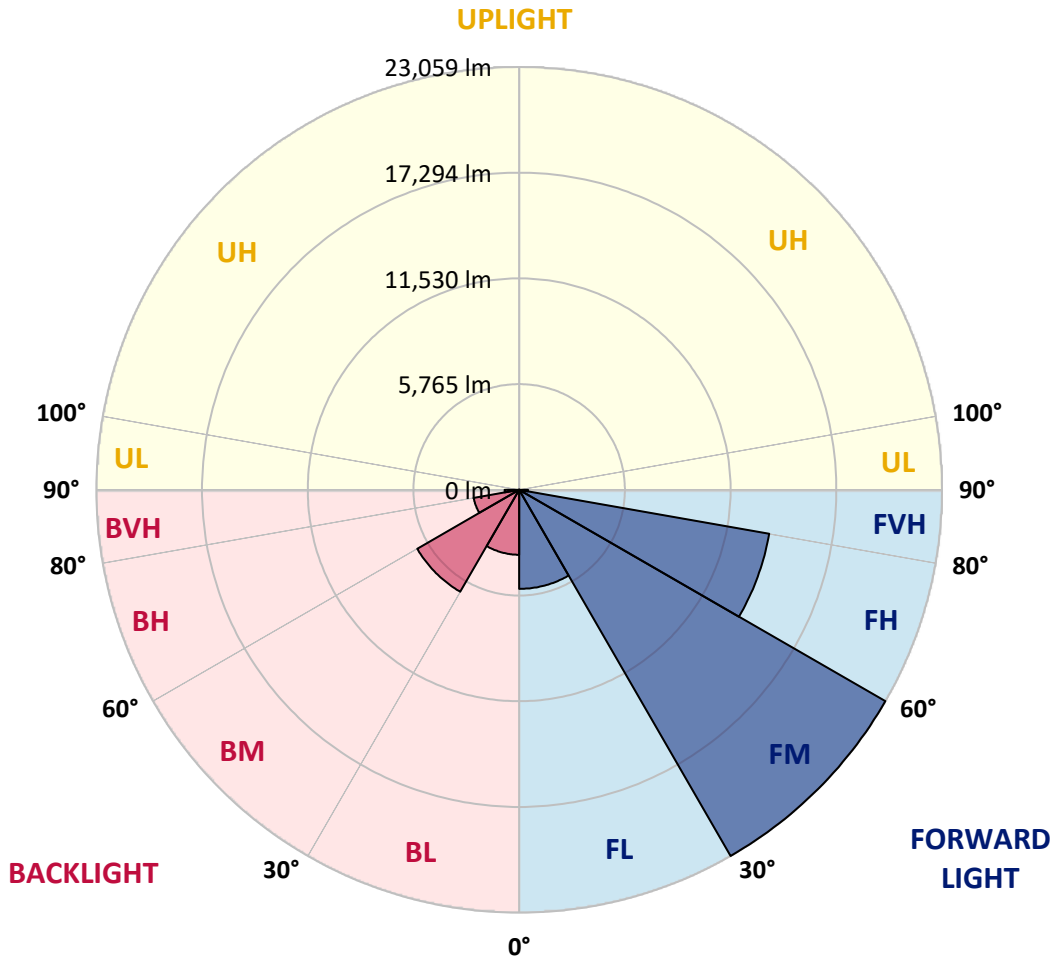
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 5401.5 | 9.6 | | | |
| FM | (30°-60°) | 23059.3 | 41.1 | | | |
| FH | (60°-80°) | 13845.7 | 24.7 | | | G5 |
| FVH | (80°-90°) | 481.6 | 0.9 | | | G3/500 |
| BL | (0°-30°) | 3541.7 | 6.3 | B4/5000 | | |
| BM | (30°-60°) | 6416.4 | 11.4 | B4/8500 | | |
| BH | (60°-80°) | 2517.5 | 4.5 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 796.5 | 1.4 | | | G5 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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Scaled Data Report

REPORT NUMBER: P1457442
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 12808.6 | 12808.6 | 12808.6 | 12808.6 | *12808.6* | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 |
| 2.5° | 13294.1 | 13256.7 | 13219.4 | 13244.3 | *13194.5* | 13182.1 | 13119.8 | 13094.9 | 13020.2 | 13007.8 | 12870.9 |
| 5° | 13567.9 | 13493.2 | 13480.8 | 13505.7 | *13455.9* | 13455.9 | 13406.1 | 13368.8 | 13256.7 | 13194.5 | 12995.3 |
| 7.5° | 13567.9 | 13555.5 | 13580.4 | 13667.5 | *13680.0* | 13680.0 | 13680.0 | 13692.4 | 13580.4 | 13493.2 | 13182.1 |
| 10° | 12796.2 | 12671.7 | 12945.6 | 13381.2 | *13592.8* | 13717.3 | 13941.4 | 14078.3 | 13991.2 | 13928.9 | 13505.7 |
| 12.5° | 10493.4 | 10505.8 | 10941.5 | 11875.1 | *12721.5* | 13082.5 | 14016.1 | 14514.0 | 14551.3 | 14451.7 | 13916.5 |
| 15° | 8900.1 | 8962.3 | 9186.4 | 9858.5 | *10829.5* | 11364.7 | 13580.4 | 14899.8 | 15198.6 | 15099.0 | 14414.4 |
| 17.5° | 8414.6 | 8452.0 | 8551.5 | 8937.4 | *9485.1* | 9920.8 | 12397.9 | 15148.8 | 15982.8 | 15858.3 | 14974.5 |
| 20° | 8339.9 | 8364.8 | 8489.3 | 8812.9 | *9186.4* | 9435.3 | 11190.4 | 14949.6 | 16717.2 | 16667.4 | 15484.9 |
| 22.5° | 8352.4 | 8377.3 | 8539.1 | 8987.2 | *9373.1* | 9584.7 | 10804.6 | 14489.1 | 17488.9 | 17538.7 | 16007.7 |
| 25° | 8377.3 | 8389.7 | 8638.7 | 9236.2 | *9721.6* | 9983.0 | 11053.5 | 14078.3 | 18136.2 | 18559.4 | 16580.3 |
| 27.5° | 8514.2 | 8551.5 | 8887.6 | 9559.8 | *10132.4* | 10431.1 | 11638.5 | 14215.2 | 18845.7 | 19717.1 | 17264.9 |
| 30° | 8887.6 | 8912.5 | 9323.3 | 10020.4 | *10642.7* | 10953.9 | 12335.6 | 14762.9 | 19717.1 | 20912.0 | 17937.1 |
| 32.5° | 9472.7 | 9497.6 | 9970.6 | 10692.5 | *11364.7* | 11738.1 | 13244.3 | 15808.5 | 20688.0 | 22169.3 | 18609.2 |
| 35° | 10281.8 | 10294.2 | 10829.5 | 11601.2 | *12310.7* | 12733.9 | 14302.3 | 16991.0 | 21696.2 | 23239.8 | 19107.1 |
| 37.5° | 11240.2 | 11327.4 | 11875.1 | 12684.2 | *13518.1* | 13904.0 | 15547.1 | 18372.7 | 22592.5 | 24148.4 | 19393.4 |
| 40° | 12559.7 | 12584.6 | 13119.8 | 13904.0 | *14787.8* | 15161.2 | 16791.9 | 19679.7 | 23575.8 | 24683.7 | 19654.8 |
| 42.5° | 13916.5 | 14128.1 | 14576.2 | 15447.5 | *16107.3* | 16406.0 | 18210.9 | 20874.7 | 24360.0 | 24708.6 | 19542.8 |
| 45° | 15733.8 | 15895.6 | 16343.8 | 17115.5 | *17775.2* | 18123.8 | 19742.0 | 21970.1 | 24758.4 | 24497.0 | 19293.9 |
| 47.5° | 17812.6 | 17912.2 | 18273.1 | 18970.2 | *19704.6* | 19953.6 | 21335.3 | 22592.5 | 24907.7 | 24347.6 | 19181.8 |
| 50° | 20264.8 | 20264.8 | 20526.2 | 21123.7 | *21795.8* | 22144.4 | 22804.1 | 22965.9 | 25343.4 | 24086.2 | 19468.1 |
| 52.5° | 22331.1 | 22430.7 | 22779.2 | 23625.6 | *24297.8* | 24696.1 | 23949.3 | 23538.5 | 24459.6 | 22629.8 | 19555.3 |
| 55° | 24310.3 | 24422.3 | 25206.5 | 26264.5 | *27409.7* | 27845.4 | 25380.8 | 23252.2 | 21484.6 | 20501.3 | 18957.8 |
| 57.5° | 26202.3 | 26438.8 | 27422.2 | 29488.5 | *31218.7* | 31181.4 | 27198.1 | 20688.0 | 17538.7 | 18148.7 | 17650.8 |
| 60° | 28841.2 | 29090.2 | 30658.6 | 33260.1 | *35376.2* | 34492.4 | 27223.0 | 17215.1 | 13667.5 | 14489.1 | 15198.6 |
| 62.5° | 31044.4 | 31467.7 | 33770.5 | 38102.2 | *40044.1* | 38662.4 | 24970.0 | 13182.1 | 9074.3 | 10107.5 | 11750.6 |
| 65° | 30845.3 | 31405.4 | 34977.9 | 41662.3 | *44562.6* | 43280.5 | 21671.4 | 8339.9 | 4680.3 | 6908.4 | 8227.9 |
| 67° | *28131.7* | *28741.6* | *33372.1* | *41786.8* | *46180.8* | *43442.3* | *18298.0* | *5041.3* | *2975.0* | *4792.3* | *5713.5* |
| 67.5° | 26575.7 | 27472.0 | 32575.5 | 41550.2 | *45882.0* | 42757.7 | 16779.4 | 4219.8 | 2800.7 | 4456.3 | 5203.1 |
| 70° | 16343.8 | 17787.7 | 24447.2 | 36733.0 | *41127.0* | 35787.0 | 9323.3 | 2389.9 | 2277.9 | 2987.4 | 3597.4 |
| 72.5° | 4916.8 | 5352.5 | 9435.3 | 23563.4 | *30185.5* | 26525.9 | 4194.9 | 1842.3 | 2041.4 | 2402.4 | 2775.8 |
| 75° | 2389.9 | 2551.8 | 3896.1 | 9634.5 | *14700.7* | 14626.0 | 2340.2 | 1580.9 | 1892.0 | 2016.5 | 2190.8 |
| 77.5° | 1531.1 | 1630.6 | 2427.3 | 5389.8 | *6734.2* | 5999.8 | 1692.9 | 1381.7 | 1680.4 | 1655.5 | 1630.6 |
| 80° | 958.5 | 1008.3 | 1556.0 | 3124.4 | *4966.6* | 4145.1 | 1244.8 | 1132.7 | 1443.9 | 1282.1 | 1157.6 |
| 82.5° | 622.4 | 684.6 | 995.8 | 1904.5 | *3547.6* | 3087.0 | 821.5 | 809.1 | 1195.0 | 1020.7 | 896.2 |
| 85° | 410.8 | 460.6 | 634.8 | 1120.3 | *2103.7* | 2203.2 | 535.2 | 560.1 | 921.1 | 771.8 | 684.6 |
| 87.5° | 149.4 | 186.7 | 323.6 | 497.9 | *983.4* | 1219.9 | 224.1 | 211.6 | 448.1 | 361.0 | 286.3 |
| 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: P1457442
CATALOG NUMBER: GLAN-SB8D-935-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 | 12808.6 |
| 2.5° | 12846.0 | 12808.6 | 12634.4 | 12485.0 | 12373.0 | 12223.6 | 12061.8 | 11875.1 | 11750.6 | 11775.5 | 11738.1 |
| 5° | 12908.2 | 12808.6 | 12472.5 | 11962.2 | 11464.3 | 10841.9 | 10045.3 | 9572.2 | 9211.3 | 9024.5 | 9074.3 |
| 7.5° | 13045.1 | 12870.9 | 12161.4 | 11128.2 | 9833.6 | 8564.0 | 7779.8 | 7331.7 | 7120.1 | 7032.9 | 7020.5 |
| 10° | 13281.6 | 12982.9 | 11763.0 | 9833.6 | 8140.8 | 7281.9 | 6995.6 | 6871.1 | 6846.2 | 6846.2 | 6833.8 |
| 12.5° | 13567.9 | 13094.9 | 11090.9 | 8576.4 | 7331.7 | 7020.5 | 6970.7 | 6983.1 | 7020.5 | 7057.8 | 6995.6 |
| 15° | 13916.5 | 13144.7 | 10256.9 | 7817.1 | 7169.8 | 7095.2 | 7169.8 | 7257.0 | 7319.2 | 7369.0 | 7306.8 |
| 17.5° | 14265.0 | 13094.9 | 9472.7 | 7456.1 | 7194.7 | 7294.3 | 7443.7 | 7580.6 | 7618.0 | 7692.6 | 7642.9 |
| 20° | 14514.0 | 12920.7 | 8800.5 | 7319.2 | 7257.0 | 7481.0 | 7667.8 | 7817.1 | 7891.8 | 7941.6 | 7891.8 |
| 22.5° | 14700.7 | 12696.6 | 8315.0 | 7182.3 | 7257.0 | 7530.8 | 7754.9 | 7929.2 | 8016.3 | 8066.1 | 8003.8 |
| 25° | 14862.5 | 12385.4 | 7941.6 | 6983.1 | 7107.6 | 7369.0 | 7618.0 | 7792.2 | 7916.7 | 7991.4 | 7954.0 |
| 27.5° | 15061.7 | 12136.5 | 7593.1 | 6684.4 | 6796.4 | 7045.4 | 7306.8 | 7518.4 | 7754.9 | 7879.4 | 7854.5 |
| 30° | 15285.7 | 12012.0 | 7257.0 | 6360.7 | 6435.4 | 6684.4 | 6995.6 | 7281.9 | 7605.5 | 7767.3 | 7767.3 |
| 32.5° | 15547.1 | 11924.8 | 6945.8 | 6049.6 | 6111.8 | 6385.6 | 6684.4 | 6945.8 | 7294.3 | 7555.7 | 7543.3 |
| 35° | 15659.1 | 11825.3 | 6696.8 | 5763.3 | 5887.7 | 6111.8 | 6348.3 | 6522.6 | 6883.5 | 7194.7 | 7219.6 |
| 37.5° | 15771.2 | 11787.9 | 6572.4 | 5539.2 | 5638.8 | 5813.1 | 5937.5 | 6024.7 | 6360.7 | 6684.4 | 6696.8 |
| 40° | 15908.1 | 11962.2 | 6659.5 | 5389.8 | 5302.7 | 5477.0 | 5539.2 | 5589.0 | 5763.3 | 5974.9 | 5974.9 |
| 42.5° | 15821.0 | 12086.7 | 6858.7 | 5252.9 | 4891.9 | 5091.1 | 5116.0 | 5103.5 | 5116.0 | 5128.4 | 5116.0 |
| 45° | 15596.9 | 11962.2 | 6858.7 | 5041.3 | 4456.3 | 4667.9 | 4655.4 | 4593.2 | 4493.6 | 4232.2 | 4194.9 |
| 47.5° | 15547.1 | 11887.5 | 6597.3 | 4692.8 | 4020.6 | 4194.9 | 4219.8 | 4095.3 | 3809.0 | 3535.1 | 3448.0 |
| 50° | 15758.7 | 12024.4 | 6186.5 | 4269.5 | 3647.2 | 3796.5 | 3858.8 | 3647.2 | 3323.5 | 3037.2 | 2987.4 |
| 52.5° | 16069.9 | 12198.7 | 5589.0 | 3809.0 | 3336.0 | 3485.3 | 3560.0 | 3323.5 | 2987.4 | 2763.4 | 2738.5 |
| 55° | 16032.6 | 12198.7 | 4916.8 | 3385.8 | 3099.5 | 3211.5 | 3336.0 | 3087.0 | 2825.6 | 2701.1 | 2688.7 |
| 57.5° | 15223.5 | 11738.1 | 4418.9 | 3087.0 | 2875.4 | 2975.0 | 3136.8 | 2900.3 | 2651.3 | 2676.2 | 2713.6 |
| 60° | 13642.6 | 10543.2 | 4045.5 | 2887.9 | 2676.2 | 2775.8 | 2950.1 | 2676.2 | 2352.6 | 2265.5 | 2265.5 |
| 62.5° | 11240.2 | 8688.5 | 3746.7 | 2688.7 | 2489.5 | 2614.0 | 2701.1 | 2340.2 | 2128.5 | 2029.0 | 2029.0 |
| 65° | 8427.1 | 6721.7 | 3435.6 | 2526.9 | 2327.7 | 2464.6 | 2365.1 | 2190.8 | 1979.2 | 1904.5 | 1916.9 |
| 67° | *6248.7* | *5215.6* | *3174.1* | *2389.9* | *2228.1* | *2290.4* | *2215.7* | *2091.2* | *1879.6* | *1817.4* | *1879.6* |
| 67.5° | 5613.9 | 4954.2 | 3111.9 | 2352.6 | 2203.2 | 2253.0 | 2178.3 | 2078.8 | 1854.7 | 1792.5 | 1854.7 |
| 70° | 3858.8 | 3809.0 | 2775.8 | 2178.3 | 2066.3 | 2016.5 | 2053.9 | 1929.4 | 1742.7 | 1717.8 | 1780.0 |
| 72.5° | 2937.6 | 3037.2 | 2489.5 | 2029.0 | 1916.9 | 1854.7 | 1941.8 | 1817.4 | 1630.6 | 1668.0 | 1730.2 |
| 75° | 2302.8 | 2452.2 | 2228.1 | 1817.4 | 1742.7 | 1755.1 | 1929.4 | 1879.6 | 1730.2 | 1767.6 | 1780.0 |
| 77.5° | 1705.3 | 1979.2 | 1904.5 | 1580.9 | 1518.6 | 1692.9 | 2178.3 | 2327.7 | 2066.3 | 2004.1 | 1916.9 |
| 80° | 1244.8 | 1419.0 | 1605.7 | 1307.0 | 1269.7 | 1630.6 | 2688.7 | 2975.0 | 2551.8 | 2302.8 | 2240.6 |
| 82.5° | 921.1 | 995.8 | 1319.5 | 1045.6 | 921.1 | 1456.4 | 2987.4 | 3497.8 | 3037.2 | 2564.2 | 2489.5 |
| 85° | 659.7 | 771.8 | 1045.6 | 771.8 | 609.9 | 1195.0 | 2925.2 | 3423.1 | 3012.3 | 2427.3 | 2365.1 |
| 87.5° | 236.5 | 336.1 | 448.1 | 348.5 | 311.2 | 821.5 | 2414.8 | 2464.6 | 1879.6 | 858.9 | 871.3 |
| 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

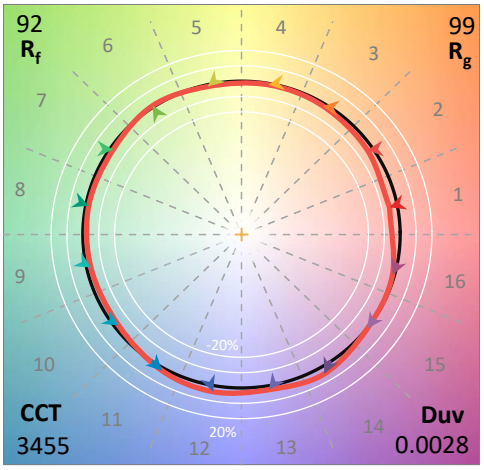
## Test Information

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




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| 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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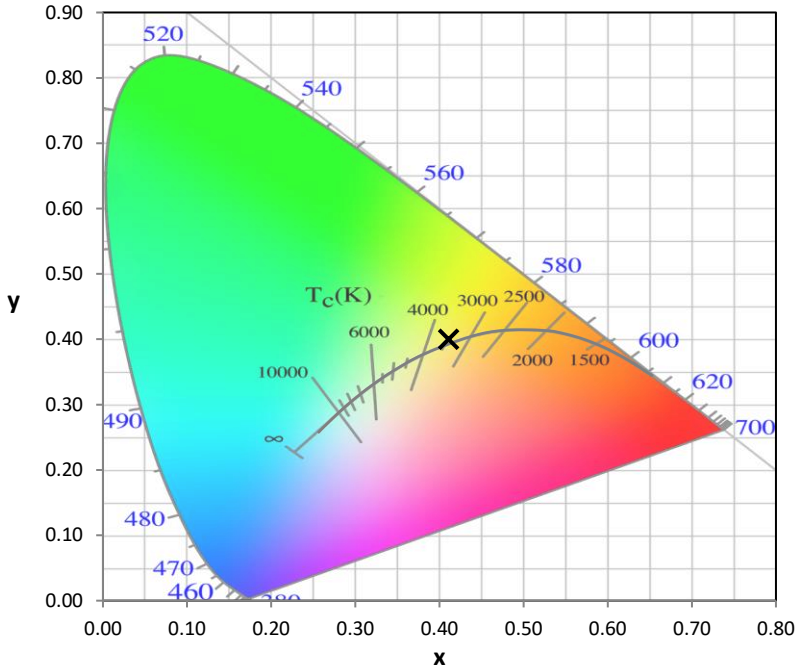
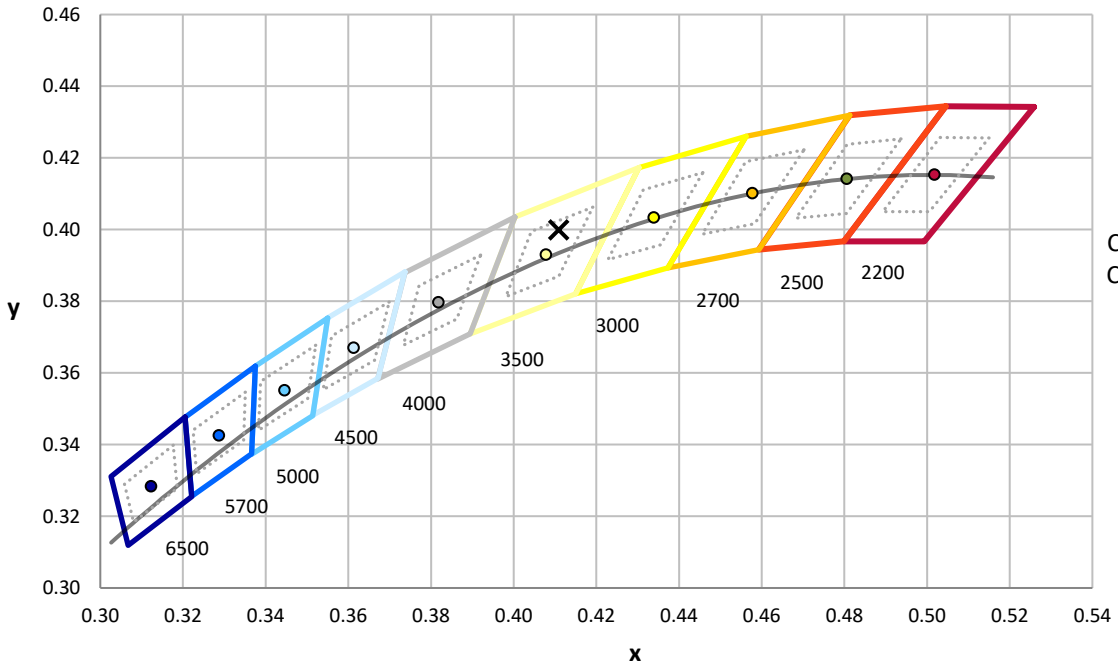
## CIE 1931 Chromaticity Diagram




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




CCT = 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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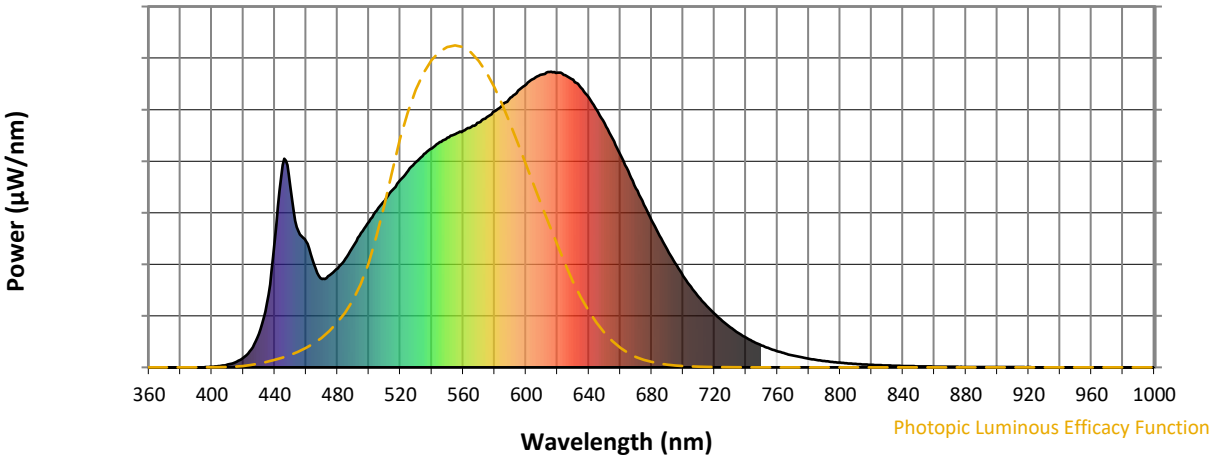
## Photopic Flux vs. Wavelength




## 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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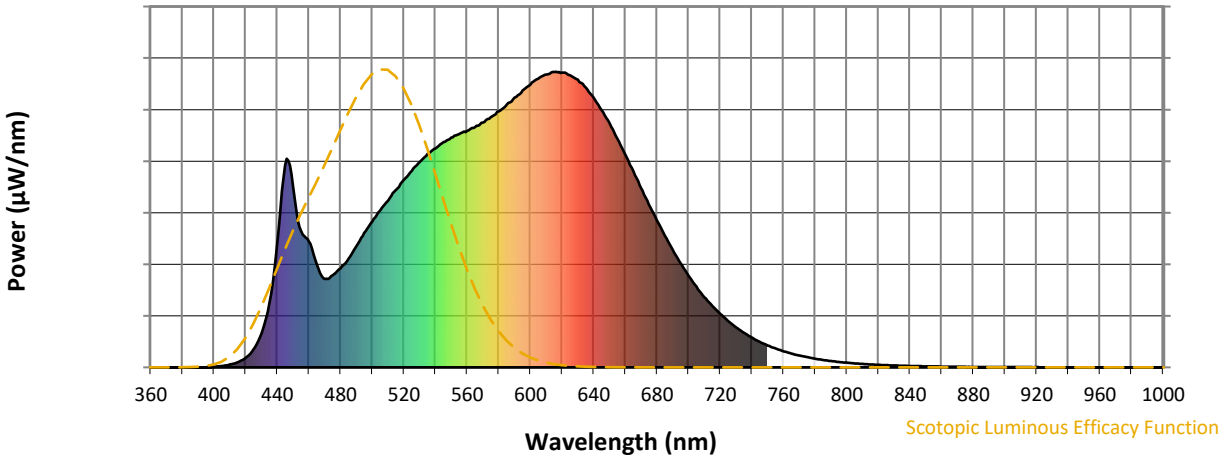
## Scotopic Flux vs. Wavelength




**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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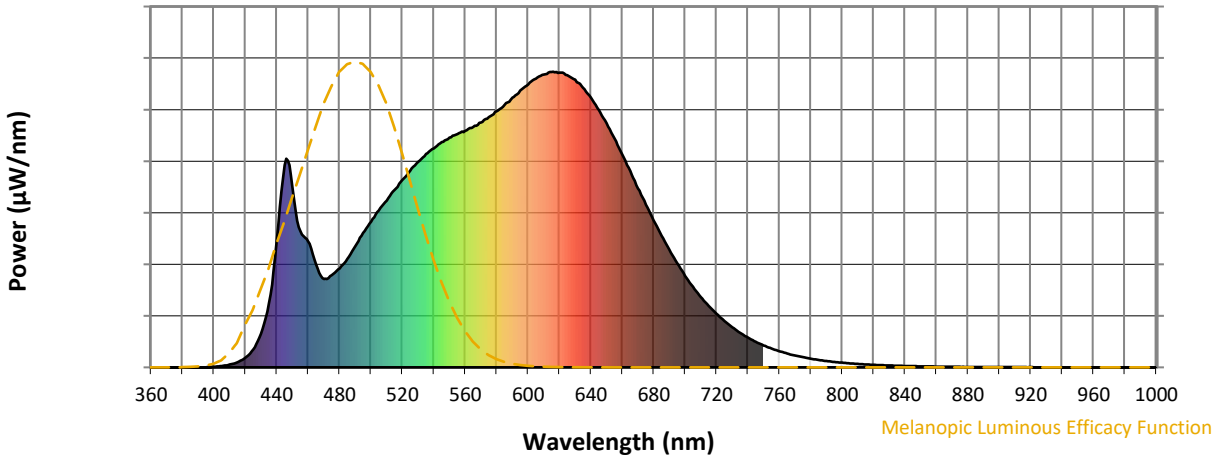
## Melanopic Flux vs. Wavelength




**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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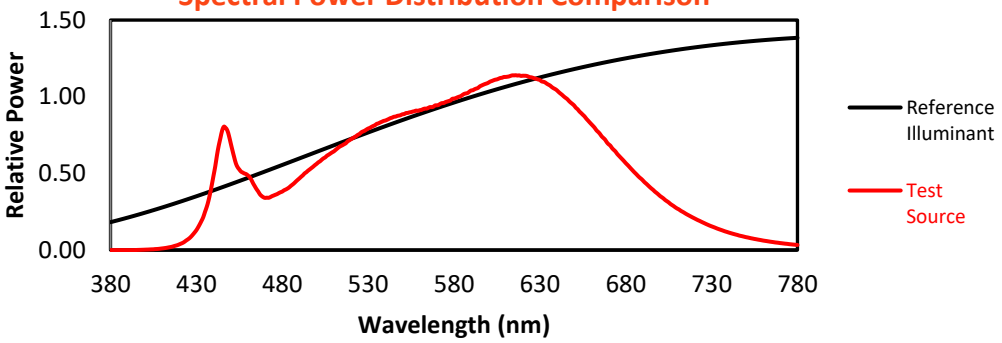
# TM-30-18

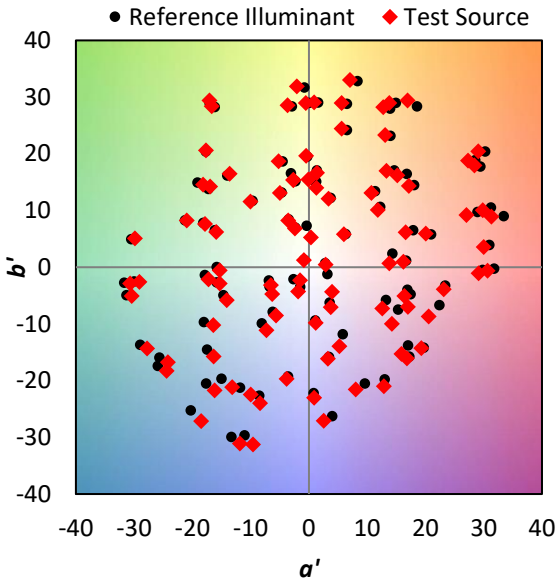
## Summary

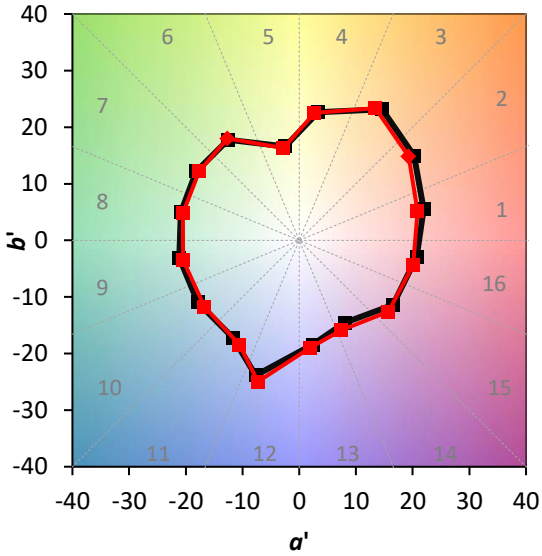
$R_f$ = 92.3
$R_g$ = 98.5
CIE $R_a$ = 92.2
$R_9$ = 59.8

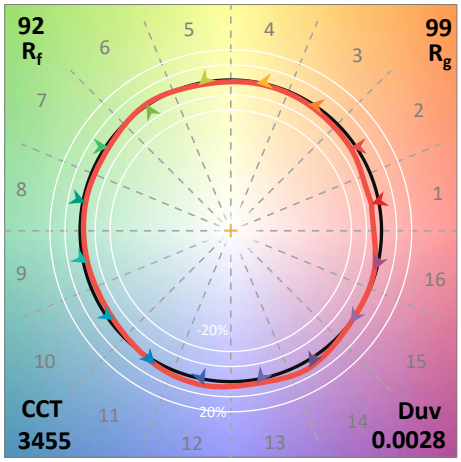
## Spectral Power Distribution Comparison

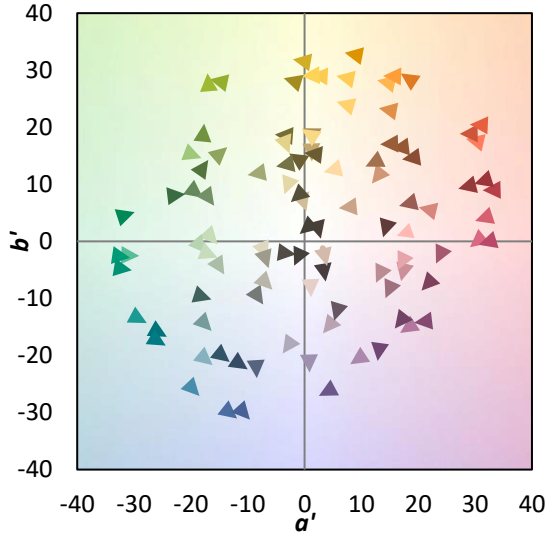



## Color Vector Graphics



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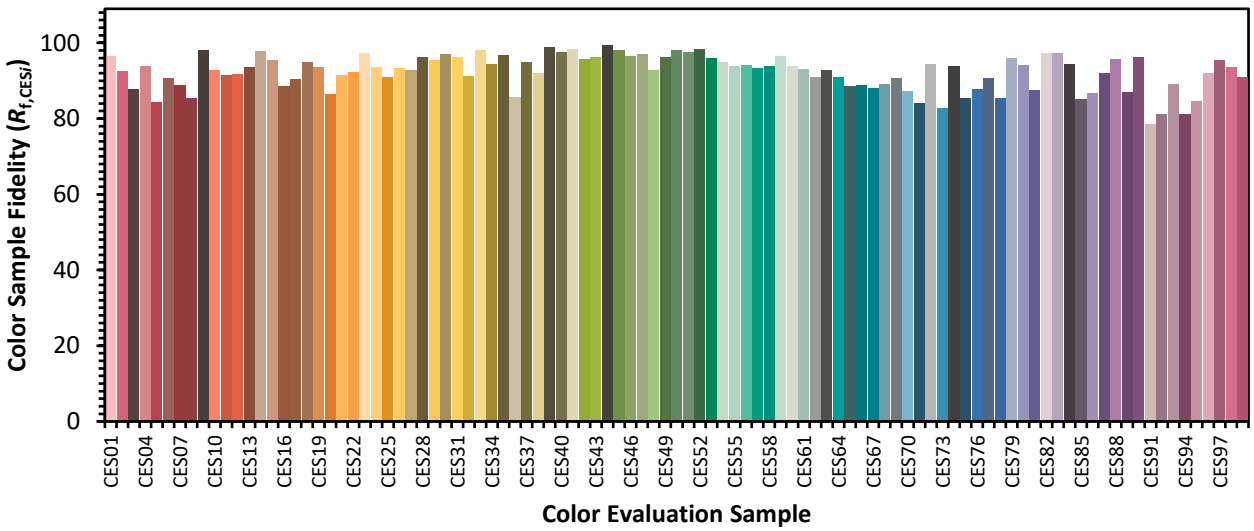
# TM-30-18

**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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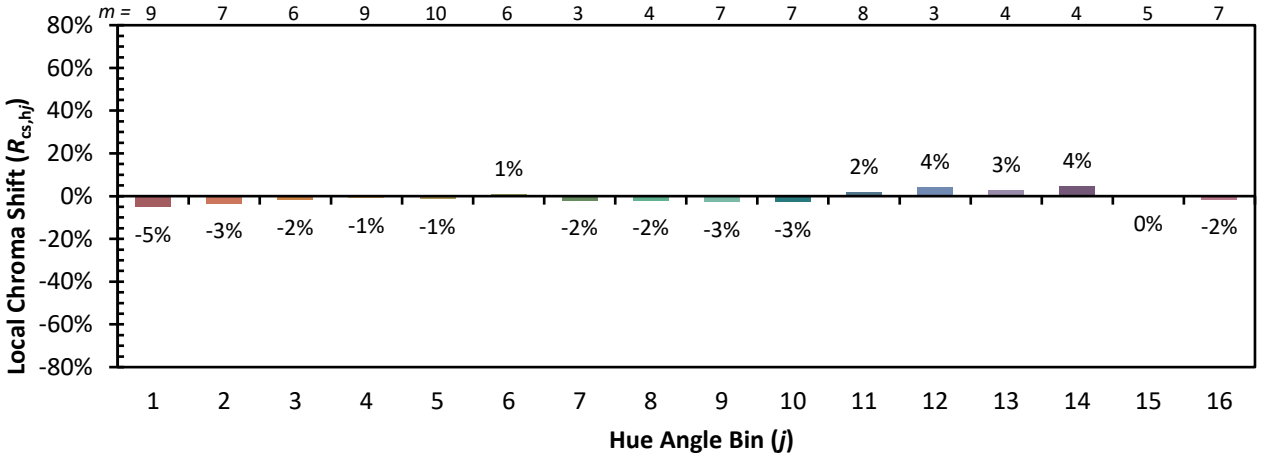
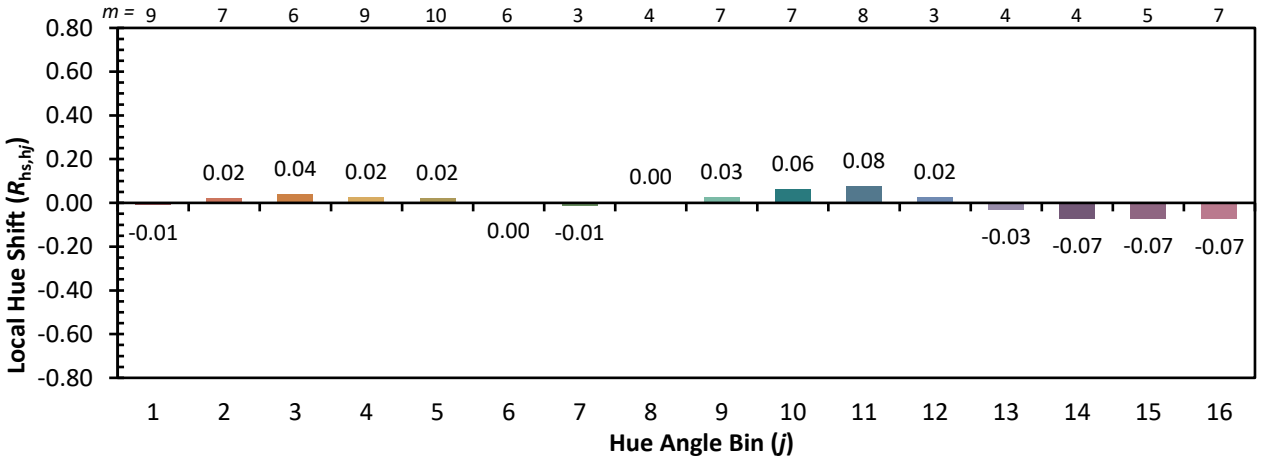
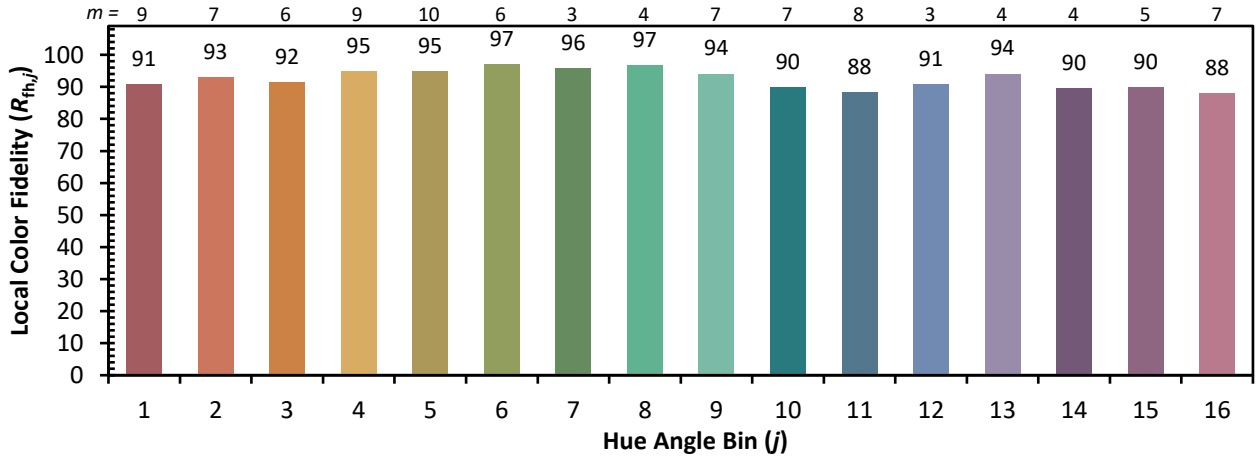
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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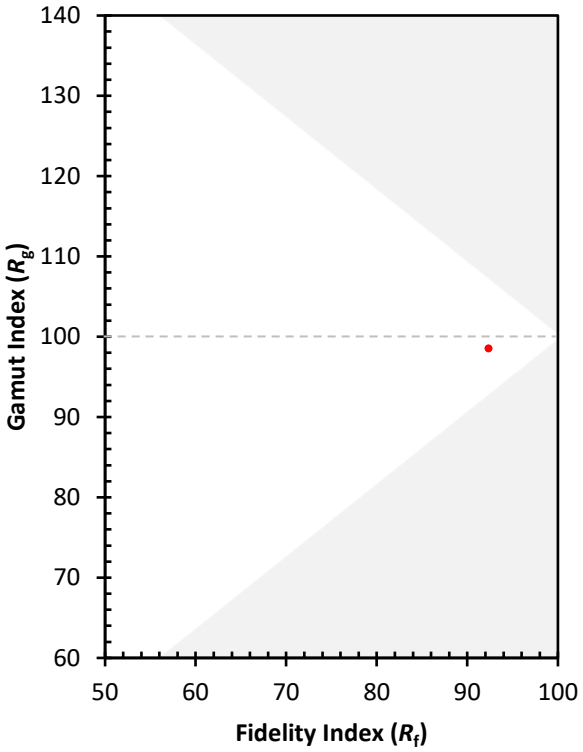
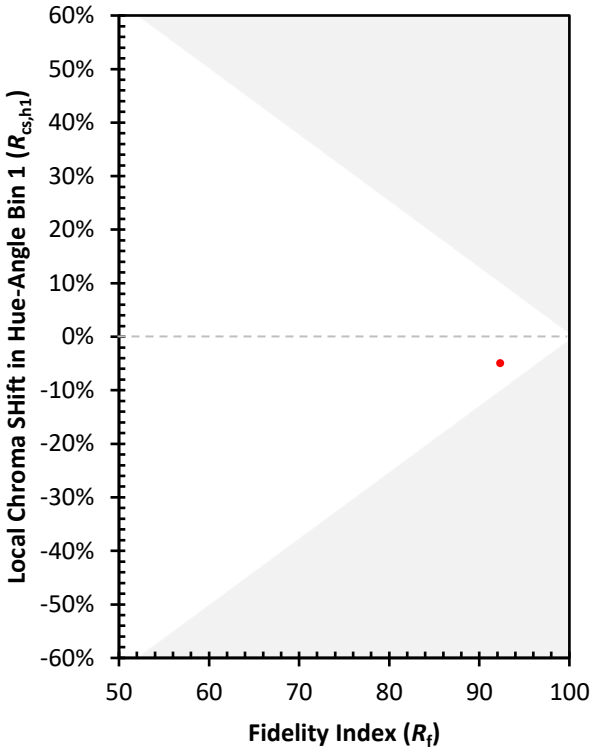
## Measure Comparisons




(END OF REPORT)