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: P1457259

Luminaire Tested: GLAN-SB8A-835-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: | P1457259 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 5/22/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | STREETWORKS |
| Catalog Number: | GLAN-SB8A-835-U-T4LG |
| Description: | GALLEON II AREA AND ROADWAY HIGH DENSITY LUMINAIRE 350mA 8xLight Square PACKAGE 80CRI 3500K FIXTURE w/ TYPE IV LOW GLARE |
| Light Source: | (208) 3500K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 32937.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 145.0 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B3 - U0 - G4 |

| | |
|---|---|
| Input Watts (W): | 227.1 |
| 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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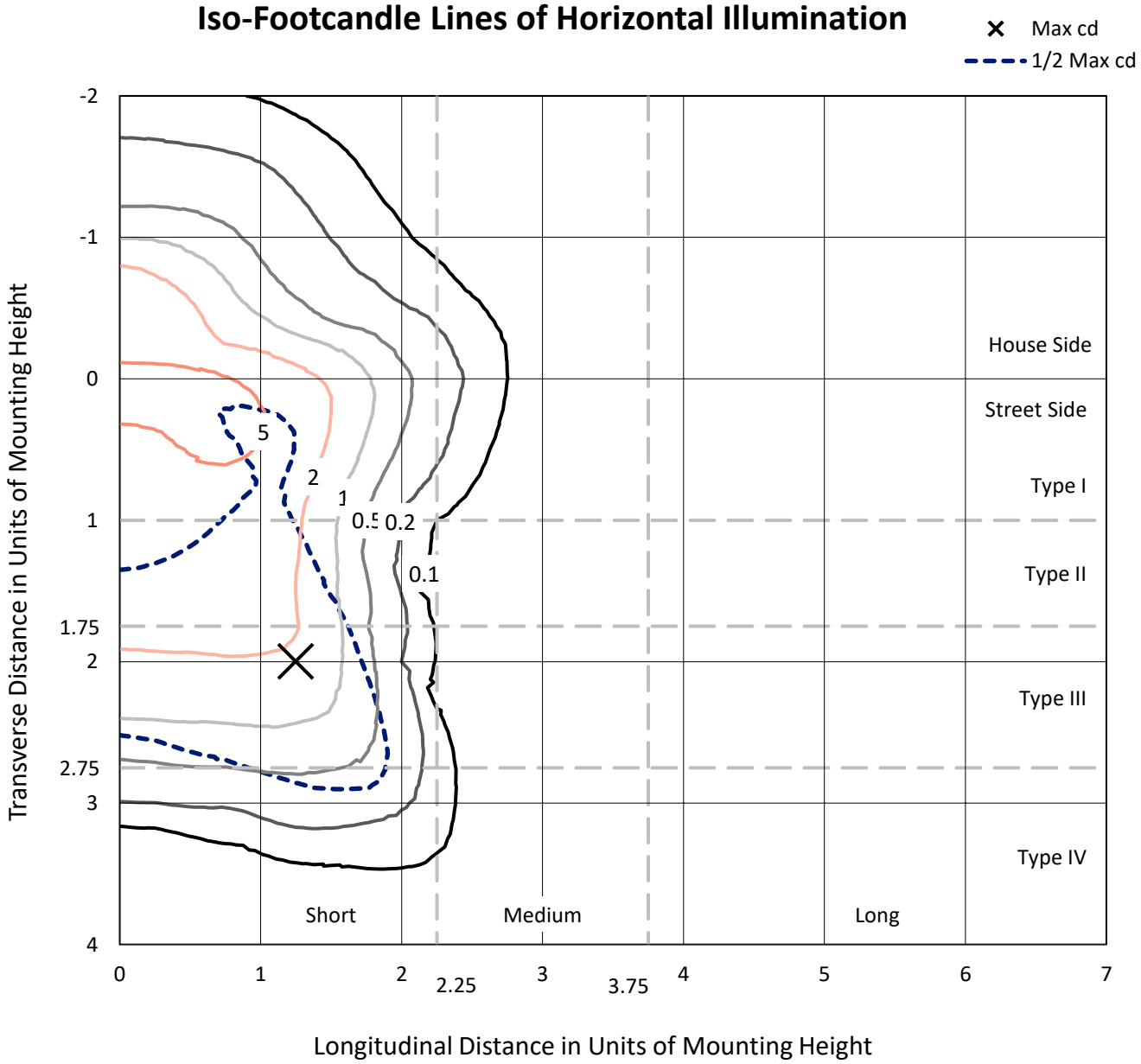
Scaled Data Report

REPORT NUMBER: P1457259
CATALOG NUMBER: GLAN-SB8A-835-U-T4LG

## Iso-Footcandle Lines of Horizontal Illumination




Based on 30 foot mounting height. Maximum calculated value = 9 fc
Type IV - Short - N/A

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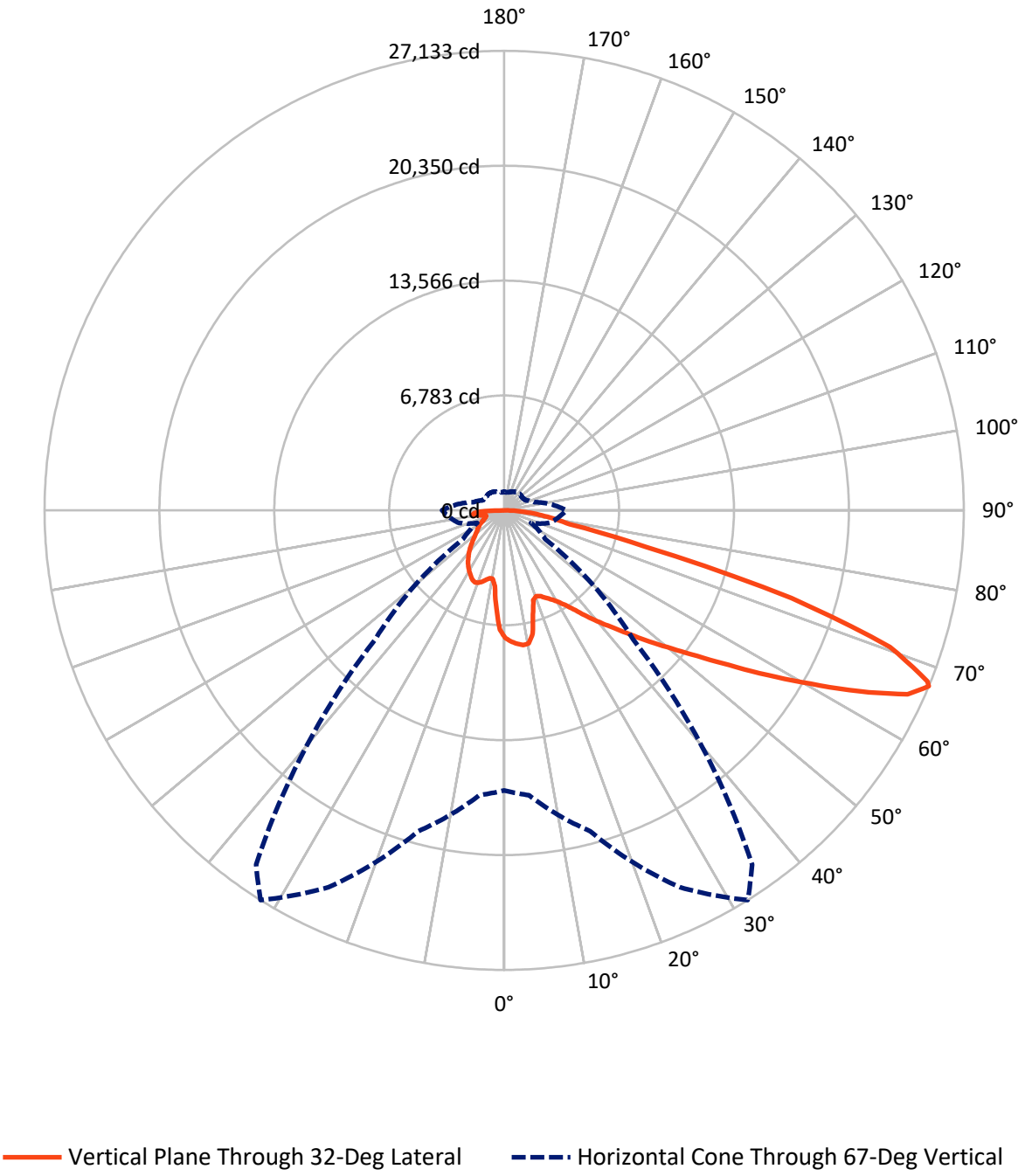
## Luminous Intensity Polar Plot



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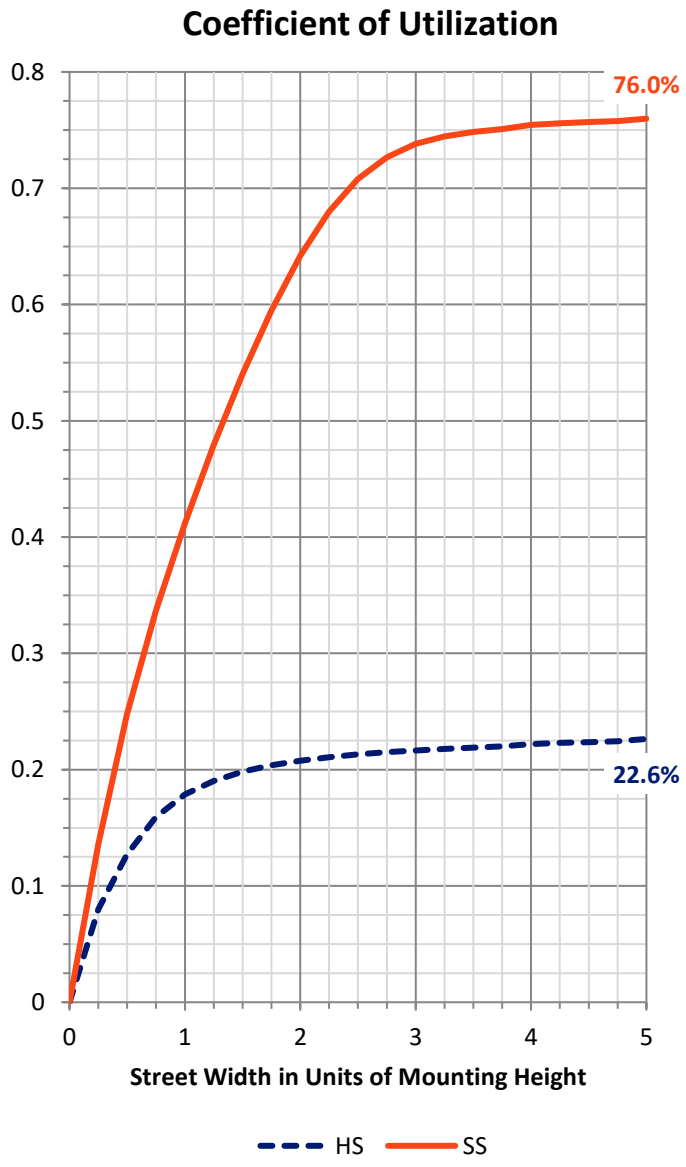
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 7797.8 | 0.0 | 7797.8 |
| | % Fixture | 23.7 | 0.0 | 23.7 |
| **Street Side** | Lumens | 25139.4 | 0.0 | 25139.4 |
| | % Fixture | 76.3 | 0.0 | 76.3 |
| **Total** | Lumens | 32937.2 | 0.0 | 32937.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 657.5 | 2.0 |
| 10°-20° | 1745.8 | 5.3 |
| 20°-30° | 2851.0 | 8.7 |
| 30°-40° | 4202.1 | 12.8 |
| 40°-50° | 5795.0 | 17.6 |
| 50°-60° | 7320.8 | 22.2 |
| 60°-70° | 7085.2 | 21.5 |
| 70°-80° | 2528.7 | 7.7 |
| 80°-90° | 750.9 | 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° | 32937.2 | 100.0 |
| 0°-180° | 32937.2 | 100.0 |



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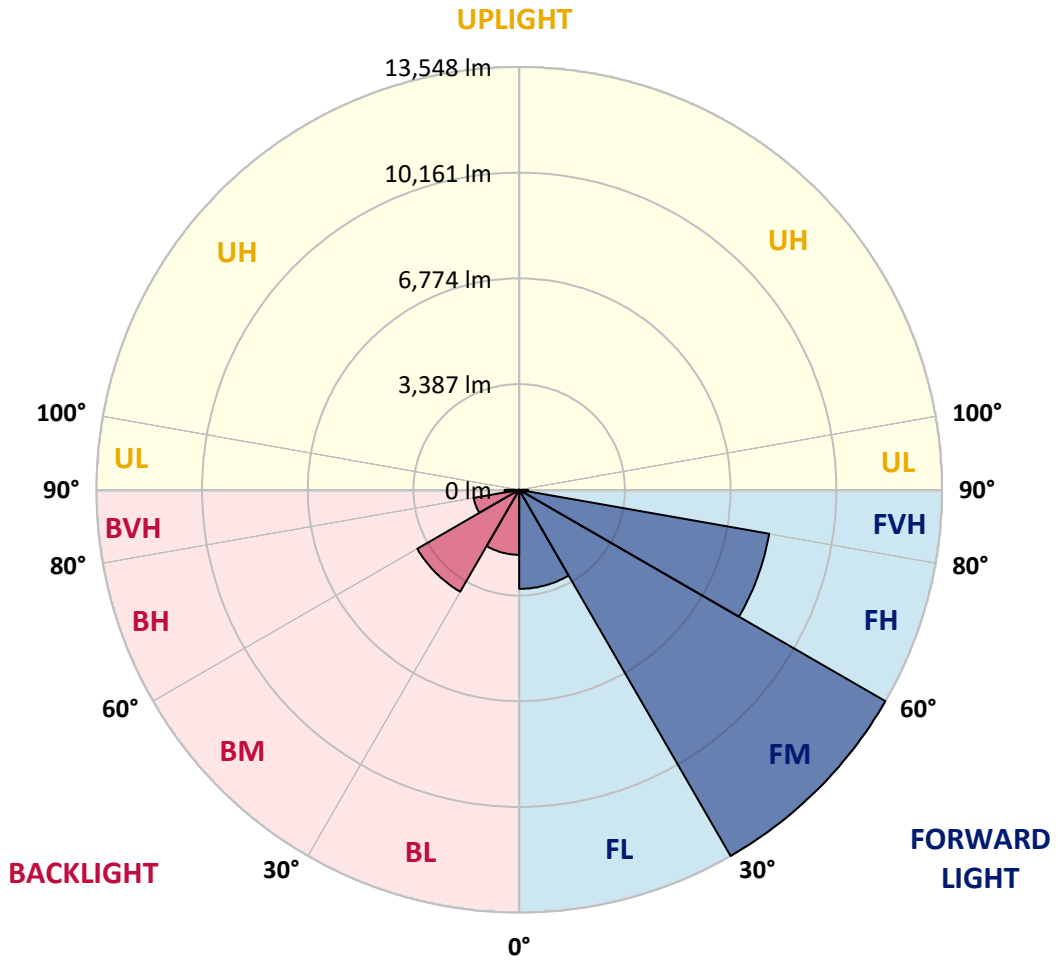
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 3173.6 | 9.6 | | | |
| FM | (30°-60°) | 13548.1 | 41.1 | | | |
| FH | (60°-80°) | 8134.8 | 24.7 | | | G4/12000 |
| FVH | (80°-90°) | 283.0 | 0.9 | | | G3/500 |
| BL | (0°-30°) | 2080.8 | 6.3 | B3/2500 | | |
| BM | (30°-60°) | 3769.9 | 11.4 | B3/5000 | | |
| BH | (60°-80°) | 1479.1 | 4.5 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 468.0 | 1.4 | | | G3/500 |
| 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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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 |
| 2.5° | 7810.7 | 7788.8 | 7766.8 | 7781.5 | 7752.2 | 7744.9 | 7708.3 | 7693.7 | 7649.8 | 7642.5 | 7562.1 |
| 5° | 7971.6 | 7927.7 | 7920.4 | 7935.0 | 7905.8 | 7905.8 | 7876.5 | 7854.6 | 7788.8 | 7752.2 | 7635.2 |
| 7.5° | 7971.6 | 7964.3 | 7978.9 | 8030.1 | 8037.4 | 8037.4 | 8037.4 | 8044.7 | 7978.9 | 7927.7 | 7744.9 |
| 10° | 7518.2 | 7445.0 | 7605.9 | 7861.9 | 7986.2 | 8059.4 | 8191.0 | 8271.4 | 8220.3 | 8183.7 | 7935.0 |
| 12.5° | 6165.2 | 6172.5 | 6428.5 | 6977.0 | 7474.3 | 7686.4 | 8234.9 | 8527.4 | 8549.4 | 8490.9 | 8176.4 |
| 15° | 5229.1 | 5265.6 | 5397.3 | 5792.2 | 6362.7 | 6677.1 | 7978.9 | 8754.1 | 8929.7 | 8871.1 | 8468.9 |
| 17.5° | 4943.9 | 4965.8 | 5024.3 | 5251.0 | 5572.8 | 5828.8 | 7284.1 | 8900.4 | 9390.4 | 9317.3 | 8798.0 |
| 20° | 4900.0 | 4914.6 | 4987.7 | 5177.9 | 5397.3 | 5543.6 | 6574.7 | 8783.4 | 9821.9 | 9792.6 | 9097.9 |
| 22.5° | 4907.3 | 4921.9 | 5017.0 | 5280.3 | 5507.0 | 5631.3 | 6348.0 | 8512.8 | 10275.3 | 10304.6 | 9405.0 |
| 25° | 4921.9 | 4929.2 | 5075.5 | 5426.5 | 5711.8 | 5865.3 | 6494.3 | 8271.4 | 10655.6 | 10904.3 | 9741.4 |
| 27.5° | 5002.4 | 5024.3 | 5221.8 | 5616.7 | 5953.1 | 6128.6 | 6838.0 | 8351.9 | 11072.5 | 11584.4 | 10143.7 |
| 30° | 5221.8 | 5236.4 | 5477.7 | 5887.3 | 6253.0 | 6435.8 | 7247.6 | 8673.7 | 11584.4 | 12286.5 | 10538.6 |
| 32.5° | 5565.5 | 5580.1 | 5858.0 | 6282.2 | 6677.1 | 6896.5 | 7781.5 | 9288.0 | 12154.9 | 13025.2 | 10933.5 |
| 35° | 6040.9 | 6048.2 | 6362.7 | 6816.1 | 7232.9 | 7481.6 | 8403.1 | 9982.8 | 12747.2 | 13654.1 | 11226.1 |
| 37.5° | 6604.0 | 6655.2 | 6977.0 | 7452.3 | 7942.3 | 8169.1 | 9134.4 | 10794.6 | 13273.8 | 14188.0 | 11394.3 |
| 40° | 7379.2 | 7393.8 | 7708.3 | 8169.1 | 8688.3 | 8907.7 | 9865.8 | 11562.5 | 13851.6 | 14502.5 | 11547.9 |
| 42.5° | 8176.4 | 8300.7 | 8564.0 | 9075.9 | 9463.5 | 9639.1 | 10699.5 | 12264.6 | 14312.3 | 14517.1 | 11482.0 |
| 45° | 9244.1 | 9339.2 | 9602.5 | 10055.9 | 10443.5 | 10648.3 | 11599.0 | 12908.1 | 14546.3 | 14392.8 | 11335.8 |
| 47.5° | 10465.5 | 10524.0 | 10736.1 | 11145.6 | 11577.1 | 11723.4 | 12535.2 | 13273.8 | 14634.1 | 14305.0 | 11269.9 |
| 50° | 11906.2 | 11906.2 | 12059.8 | 12410.8 | 12805.8 | 13010.5 | 13398.1 | 13493.2 | 14890.1 | 14151.4 | 11438.1 |
| 52.5° | 13120.2 | 13178.7 | 13383.5 | 13880.8 | 14275.7 | 14509.8 | 14071.0 | 13829.6 | 14370.8 | 13295.8 | 11489.3 |
| 55° | 14283.1 | 14348.9 | 14809.6 | 15431.3 | 16104.1 | 16360.1 | 14912.0 | 13661.4 | 12622.9 | 12045.2 | 11138.3 |
| 57.5° | 15394.7 | 15533.7 | 16111.4 | 17325.4 | 18342.0 | 18320.1 | 15979.8 | 12154.9 | 10304.6 | 10662.9 | 10370.4 |
| 60° | 16945.1 | 17091.4 | 18012.9 | 19541.4 | 20784.7 | 20265.4 | 15994.4 | 10114.4 | 8030.1 | 8512.8 | 8929.7 |
| 62.5° | 18239.6 | 18488.3 | 19841.2 | 22386.3 | 23527.2 | 22715.4 | 14670.7 | 7744.9 | 5331.5 | 5938.5 | 6903.8 |
| 65° | 18122.6 | 18451.7 | 20550.6 | 24477.9 | 26182.0 | 25428.7 | 12732.6 | 4900.0 | 2749.8 | 4058.9 | 4834.2 |
| 67° | 16528.3 | 16886.6 | 19607.2 | 24551.1 | 27132.7 | 25523.7 | 10750.7 | 2961.9 | 1747.9 | 2815.7 | 3356.8 |
| 67.5° | 15614.1 | 16140.7 | 19139.2 | 24412.1 | 26957.2 | 25121.5 | 9858.5 | 2479.2 | 1645.5 | 2618.2 | 3057.0 |
| 70° | 9602.5 | 10450.8 | 14363.5 | 21581.8 | 24163.5 | 21026.0 | 5477.7 | 1404.2 | 1338.4 | 1755.2 | 2113.6 |
| 72.5° | 2888.8 | 3144.8 | 5543.6 | 13844.3 | 17735.0 | 15584.8 | 2464.6 | 1082.4 | 1199.4 | 1411.5 | 1630.9 |
| 75° | 1404.2 | 1499.2 | 2289.1 | 5660.6 | 8637.1 | 8593.2 | 1374.9 | 928.8 | 1111.6 | 1184.8 | 1287.2 |
| 77.5° | 899.5 | 958.1 | 1426.1 | 3166.7 | 3956.5 | 3525.1 | 994.6 | 811.8 | 987.3 | 972.7 | 958.1 |
| 80° | 563.1 | 592.4 | 914.2 | 1835.7 | 2918.0 | 2435.4 | 731.3 | 665.5 | 848.4 | 753.3 | 680.1 |
| 82.5° | 365.7 | 402.2 | 585.1 | 1118.9 | 2084.3 | 1813.7 | 482.7 | 475.4 | 702.1 | 599.7 | 526.6 |
| 85° | 241.3 | 270.6 | 373.0 | 658.2 | 1236.0 | 1294.5 | 314.5 | 329.1 | 541.2 | 453.4 | 402.2 |
| 87.5° | 87.8 | 109.7 | 190.1 | 292.5 | 577.8 | 716.7 | 131.6 | 124.3 | 263.3 | 212.1 | 168.2 |
| 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: P1457259
CATALOG NUMBER: GLAN-SB8A-835-U-T4LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 | 7525.5 |
| 2.5° | 7547.4 | 7525.5 | 7423.1 | 7335.3 | 7269.5 | 7181.8 | 7086.7 | 6977.0 | 6903.8 | 6918.5 | 6896.5 |
| 5° | 7584.0 | 7525.5 | 7328.0 | 7028.2 | 6735.6 | 6370.0 | 5901.9 | 5624.0 | 5411.9 | 5302.2 | 5331.5 |
| 7.5° | 7664.4 | 7562.1 | 7145.2 | 6538.2 | 5777.6 | 5031.6 | 4570.9 | 4307.6 | 4183.3 | 4132.1 | 4124.8 |
| 10° | 7803.4 | 7627.9 | 6911.2 | 5777.6 | 4783.0 | 4278.3 | 4110.1 | 4037.0 | 4022.4 | 4022.4 | 4015.1 |
| 12.5° | 7971.6 | 7693.7 | 6516.2 | 5038.9 | 4307.6 | 4124.8 | 4095.5 | 4102.8 | 4124.8 | 4146.7 | 4110.1 |
| 15° | 8176.4 | 7722.9 | 6026.2 | 4592.8 | 4212.5 | 4168.6 | 4212.5 | 4263.7 | 4300.3 | 4329.5 | 4293.0 |
| 17.5° | 8381.2 | 7693.7 | 5565.5 | 4380.7 | 4227.1 | 4285.6 | 4373.4 | 4453.9 | 4475.8 | 4519.7 | 4490.4 |
| 20° | 8527.4 | 7591.3 | 5170.6 | 4300.3 | 4263.7 | 4395.4 | 4505.1 | 4592.8 | 4636.7 | 4665.9 | 4636.7 |
| 22.5° | 8637.1 | 7459.7 | 4885.3 | 4219.8 | 4263.7 | 4424.6 | 4556.2 | 4658.6 | 4709.8 | 4739.1 | 4702.5 |
| 25° | 8732.2 | 7276.8 | 4665.9 | 4102.8 | 4175.9 | 4329.5 | 4475.8 | 4578.2 | 4651.3 | 4695.2 | 4673.3 |
| 27.5° | 8849.2 | 7130.6 | 4461.2 | 3927.3 | 3993.1 | 4139.4 | 4293.0 | 4417.3 | 4556.2 | 4629.4 | 4614.8 |
| 30° | 8980.8 | 7057.4 | 4263.7 | 3737.1 | 3781.0 | 3927.3 | 4110.1 | 4278.3 | 4468.5 | 4563.6 | 4563.6 |
| 32.5° | 9134.4 | 7006.2 | 4080.9 | 3554.3 | 3590.9 | 3751.8 | 3927.3 | 4080.9 | 4285.6 | 4439.2 | 4431.9 |
| 35° | 9200.3 | 6947.7 | 3934.6 | 3386.1 | 3459.2 | 3590.9 | 3729.8 | 3832.2 | 4044.3 | 4227.1 | 4241.8 |
| 37.5° | 9266.1 | 6925.8 | 3861.5 | 3254.5 | 3313.0 | 3415.4 | 3488.5 | 3539.7 | 3737.1 | 3927.3 | 3934.6 |
| 40° | 9346.5 | 7028.2 | 3912.7 | 3166.7 | 3115.5 | 3217.9 | 3254.5 | 3283.7 | 3386.1 | 3510.4 | 3510.4 |
| 42.5° | 9295.3 | 7101.3 | 4029.7 | 3086.3 | 2874.2 | 2991.2 | 3005.8 | 2998.5 | 3005.8 | 3013.1 | 3005.8 |
| 45° | 9163.7 | 7028.2 | 4029.7 | 2961.9 | 2618.2 | 2742.5 | 2735.2 | 2698.6 | 2640.1 | 2486.6 | 2464.6 |
| 47.5° | 9134.4 | 6984.3 | 3876.1 | 2757.1 | 2362.2 | 2464.6 | 2479.2 | 2406.1 | 2237.9 | 2077.0 | 2025.8 |
| 50° | 9258.8 | 7064.7 | 3634.8 | 2508.5 | 2142.8 | 2230.6 | 2267.2 | 2142.8 | 1952.7 | 1784.5 | 1755.2 |
| 52.5° | 9441.6 | 7167.1 | 3283.7 | 2237.9 | 1960.0 | 2047.8 | 2091.6 | 1952.7 | 1755.2 | 1623.6 | 1608.9 |
| 55° | 9419.7 | 7167.1 | 2888.8 | 1989.2 | 1821.0 | 1886.9 | 1960.0 | 1813.7 | 1660.1 | 1587.0 | 1579.7 |
| 57.5° | 8944.3 | 6896.5 | 2596.3 | 1813.7 | 1689.4 | 1747.9 | 1843.0 | 1704.0 | 1557.8 | 1572.4 | 1594.3 |
| 60° | 8015.5 | 6194.4 | 2376.9 | 1696.7 | 1572.4 | 1630.9 | 1733.3 | 1572.4 | 1382.2 | 1331.0 | 1331.0 |
| 62.5° | 6604.0 | 5104.7 | 2201.3 | 1579.7 | 1462.7 | 1535.8 | 1587.0 | 1374.9 | 1250.6 | 1192.1 | 1192.1 |
| 65° | 4951.2 | 3949.2 | 2018.5 | 1484.6 | 1367.6 | 1448.1 | 1389.5 | 1287.2 | 1162.8 | 1118.9 | 1126.3 |
| 67° | *3671.3* | *3064.3* | *1864.9* | *1404.2* | *1309.1* | *1345.7* | *1301.8* | *1228.7* | *1104.3* | *1067.8* | *1104.3* |
| 67.5° | 3298.3 | 2910.7 | 1828.3 | 1382.2 | 1294.5 | 1323.7 | 1279.8 | 1221.3 | 1089.7 | 1053.1 | 1089.7 |
| 70° | 2267.2 | 2237.9 | 1630.9 | 1279.8 | 1214.0 | 1184.8 | 1206.7 | 1133.6 | 1023.9 | 1009.2 | 1045.8 |
| 72.5° | 1726.0 | 1784.5 | 1462.7 | 1192.1 | 1126.3 | 1089.7 | 1140.9 | 1067.8 | 958.1 | 980.0 | 1016.6 |
| 75° | 1353.0 | 1440.7 | 1309.1 | 1067.8 | 1023.9 | 1031.2 | 1133.6 | 1104.3 | 1016.6 | 1038.5 | 1045.8 |
| 77.5° | 1001.9 | 1162.8 | 1118.9 | 928.8 | 892.2 | 994.6 | 1279.8 | 1367.6 | 1214.0 | 1177.5 | 1126.3 |
| 80° | 731.3 | 833.7 | 943.4 | 767.9 | 746.0 | 958.1 | 1579.7 | 1747.9 | 1499.2 | 1353.0 | 1316.4 |
| 82.5° | 541.2 | 585.1 | 775.2 | 614.3 | 541.2 | 855.7 | 1755.2 | 2055.1 | 1784.5 | 1506.6 | 1462.7 |
| 85° | 387.6 | 453.4 | 614.3 | 453.4 | 358.4 | 702.1 | 1718.6 | 2011.2 | 1769.8 | 1426.1 | 1389.5 |
| 87.5° | 139.0 | 197.5 | 263.3 | 204.8 | 182.8 | 482.7 | 1418.8 | 1448.1 | 1104.3 | 504.6 | 511.9 |
| 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: SP1-2407-184-10

Test Date: 10/11/2024

Luminaire Tested: GSS-SB1A-835-U-5WQ

Data in this report applies to families of products including GSS-SB1A-835-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

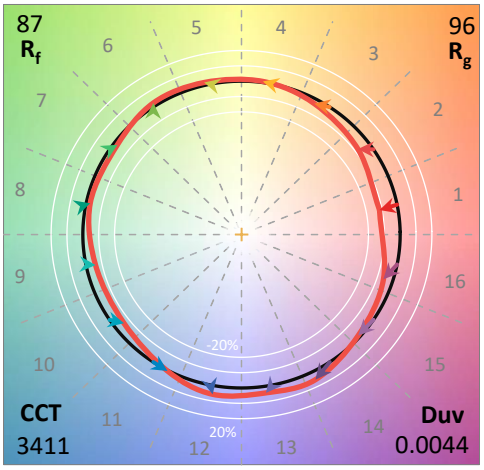
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-10 |
| 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-835-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI 3500K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3411 |
| CIE u': | 0.2360 |
| CIE v': | 0.5189 |
| Duv: | 0.0044 |
| CIE x: | 0.4154 |
| CIE y: | 0.4059 |
| CIE z: | 0.1787 |
| Peak Wavelength (nm): | 601 |
| Dominant Wavelength (nm): | 579 |
| Purity: | 46.51914 |
| Rf: | 86.6 |
| Rg: | 95.9 |

| | |
|---|---|
| CRI (Ra): | 83.5 |
| R1: | 81.1 |
| R2: | 88.9 |
| R3: | 97.2 |
| R4: | 83.8 |
| R5: | 81.7 |
| R6: | 86.9 |
| R7: | 86.1 |
| R8: | 62.2 |
| R9: | 6.3 |
| R10: | 75.4 |
| R11: | 84.1 |
| R12: | 69.7 |
| R13: | 82.8 |
| R14: | 98.5 |
| R15: | 72.6 |




## Test Conditions

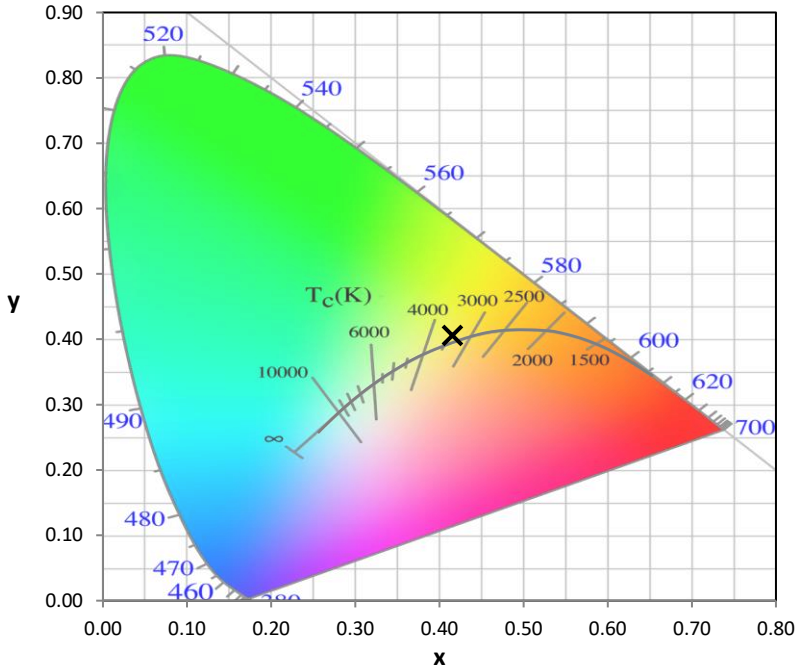
| | |
|---|---|
| Stabilization Time: | 35M |
| Operation Time: | 1H 35M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-10

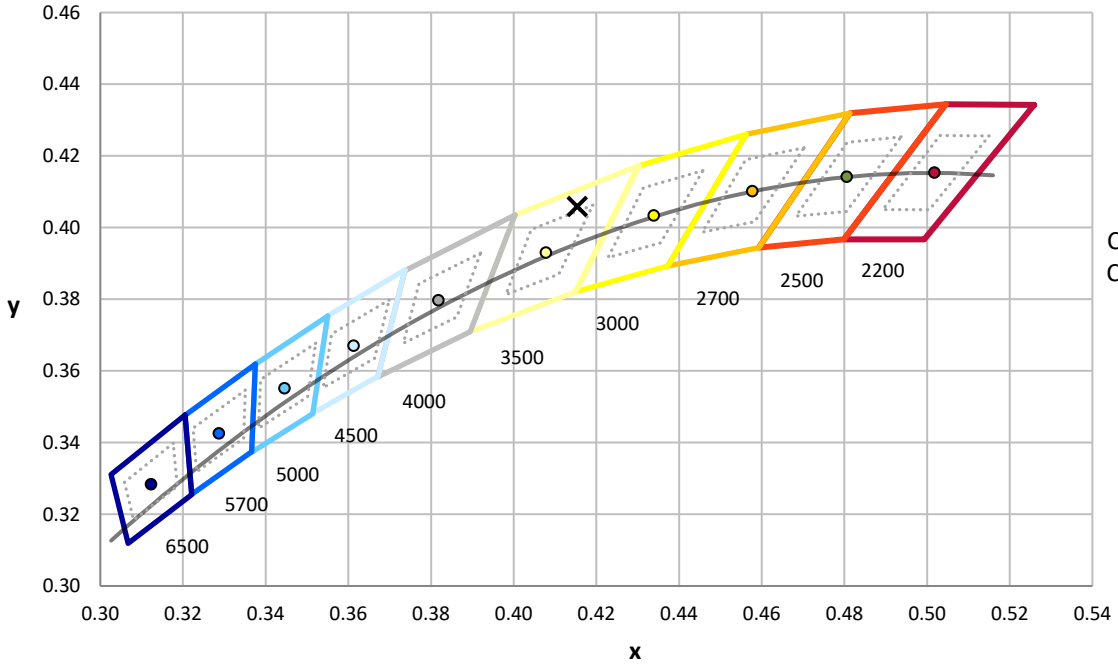
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2407-184-10

## CIE 1931 Chromaticity Diagram




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

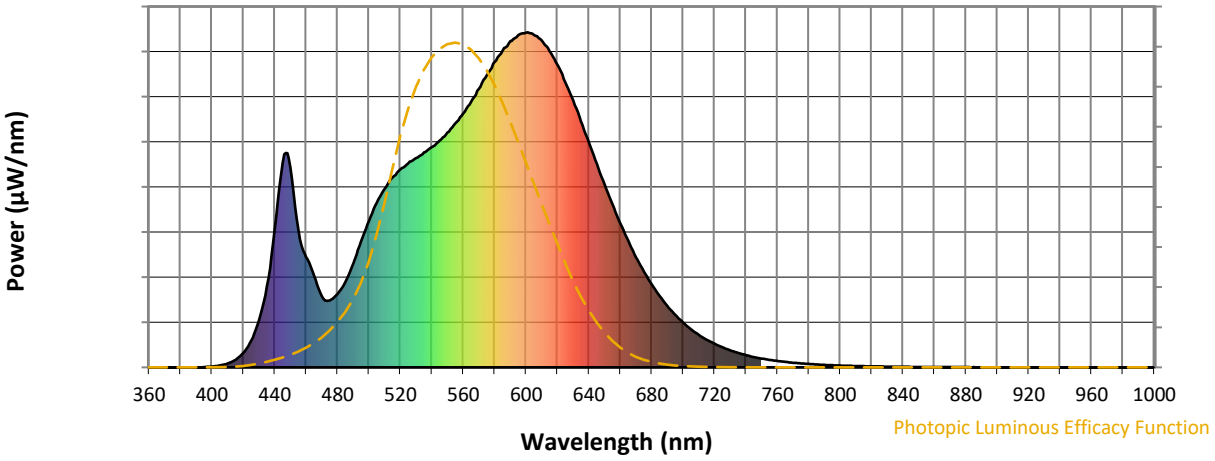



CCT = 3411K
CIE x = 0.4154
CIE y = 0.4059
Duv = 0.0044

Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2407-184-10

## Photopic Flux vs. Wavelength

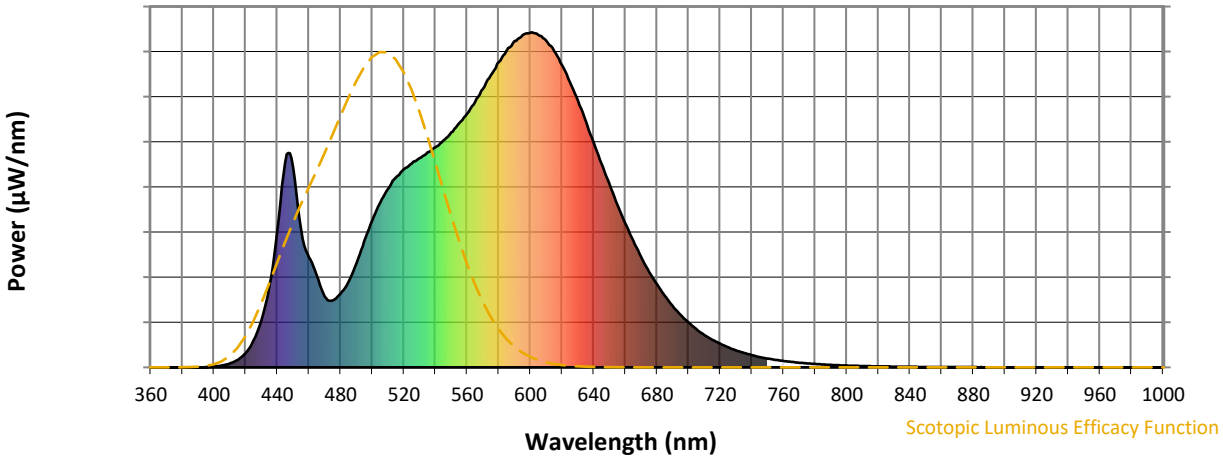



## Photopic Lumens: NR

| 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 | 311 | NR | 620 | 903 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 376 | NR | 625 | 851 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 438 | NR | 630 | 797 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 491 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 533 | NR | 640 | 672 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 566 | NR | 645 | 607 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 592 | NR | 650 | 546 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 608 | NR | 655 | 487 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 625 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 642 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 657 | NR | 670 | 329 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 22 | NR | 545 | 677 | NR | 675 | 286 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 43 | NR | 550 | 701 | NR | 680 | 248 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 80 | NR | 555 | 728 | NR | 685 | 213 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 140 | NR | 560 | 757 | NR | 690 | 184 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 243 | NR | 565 | 793 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 412 | NR | 570 | 831 | NR | 700 | 134 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 610 | NR | 575 | 872 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 597 | NR | 580 | 911 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 412 | NR | 585 | 944 | NR | 715 | 83 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 330 | NR | 590 | 974 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 274 | NR | 595 | 992 | NR | 725 | 60 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 211 | NR | 600 | 999 | NR | 730 | 51 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 200 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 220 | NR | 610 | 975 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 255 | NR | 615 | 944 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-184-10

## Scotopic Flux vs. Wavelength

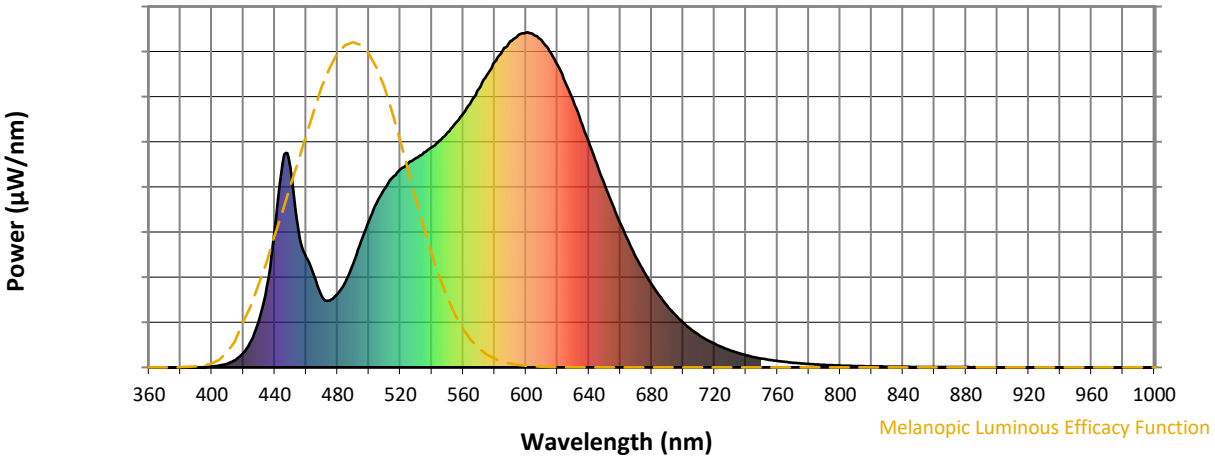



**Scotopic Lumens: NR** **S/P: 1.48**

| 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 | 311 | NR | 620 | 903 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 376 | NR | 625 | 851 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 438 | NR | 630 | 797 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 491 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 533 | NR | 640 | 672 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 566 | NR | 645 | 607 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 592 | NR | 650 | 546 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 608 | NR | 655 | 487 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 625 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 642 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 657 | NR | 670 | 329 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 22 | NR | 545 | 677 | NR | 675 | 286 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 43 | NR | 550 | 701 | NR | 680 | 248 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 80 | NR | 555 | 728 | NR | 685 | 213 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 140 | NR | 560 | 757 | NR | 690 | 184 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 243 | NR | 565 | 793 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 412 | NR | 570 | 831 | NR | 700 | 134 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 610 | NR | 575 | 872 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 597 | NR | 580 | 911 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 412 | NR | 585 | 944 | NR | 715 | 83 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 330 | NR | 590 | 974 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 274 | NR | 595 | 992 | NR | 725 | 60 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 211 | NR | 600 | 999 | NR | 730 | 51 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 200 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 220 | NR | 610 | 975 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 255 | NR | 615 | 944 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-184-10

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.88**

| 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 | 311 | NR | 620 | 903 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 376 | NR | 625 | 851 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 438 | NR | 630 | 797 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 491 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 533 | NR | 640 | 672 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 566 | NR | 645 | 607 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 592 | NR | 650 | 546 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 608 | NR | 655 | 487 | NR | 785 | 9 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 625 | NR | 660 | 429 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 642 | NR | 665 | 378 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 657 | NR | 670 | 329 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 22 | NR | 545 | 677 | NR | 675 | 286 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 43 | NR | 550 | 701 | NR | 680 | 248 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 80 | NR | 555 | 728 | NR | 685 | 213 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 140 | NR | 560 | 757 | NR | 690 | 184 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 243 | NR | 565 | 793 | NR | 695 | 156 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 412 | NR | 570 | 831 | NR | 700 | 134 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 610 | NR | 575 | 872 | NR | 705 | 114 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 597 | NR | 580 | 911 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 412 | NR | 585 | 944 | NR | 715 | 83 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 330 | NR | 590 | 974 | NR | 720 | 70 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 274 | NR | 595 | 992 | NR | 725 | 60 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 211 | NR | 600 | 999 | NR | 730 | 51 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 200 | NR | 605 | 992 | NR | 735 | 43 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 220 | NR | 610 | 975 | NR | 740 | 36 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 255 | NR | 615 | 944 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

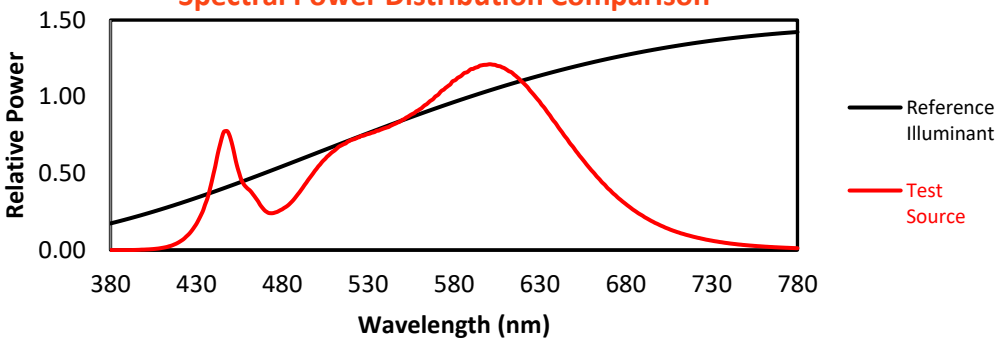
REPORT NUMBER: SP1-2407-184-10

# TM-30-18

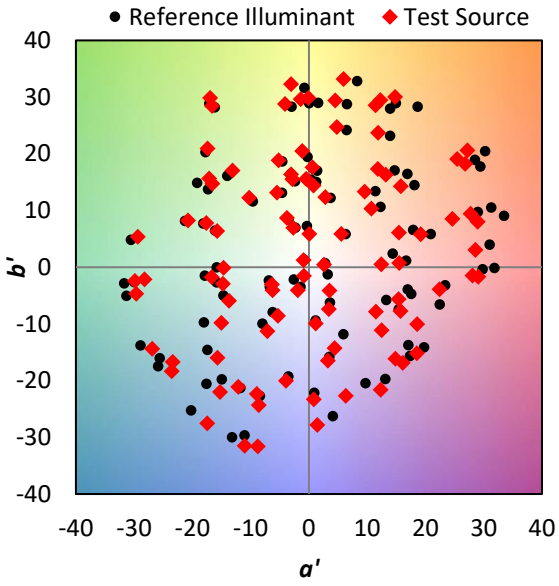
## Summary

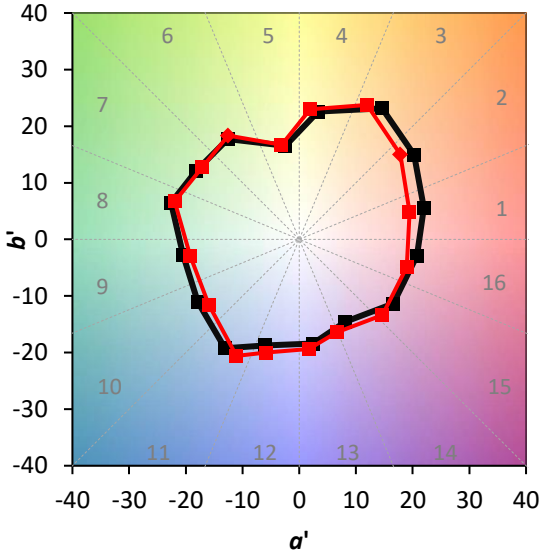
$R_f$ = 86.6
$R_g$ = 95.9
CIE $R_a$ = 83.5
$R_9$ = 6.3

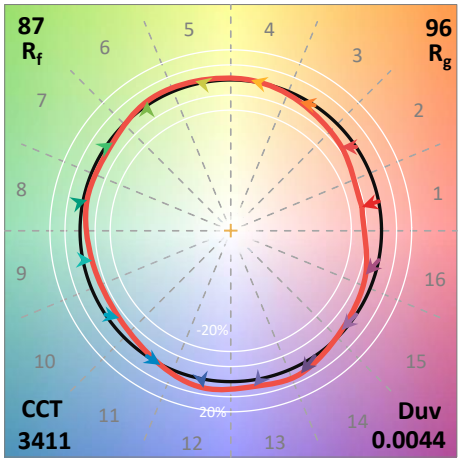
## Spectral Power Distribution Comparison

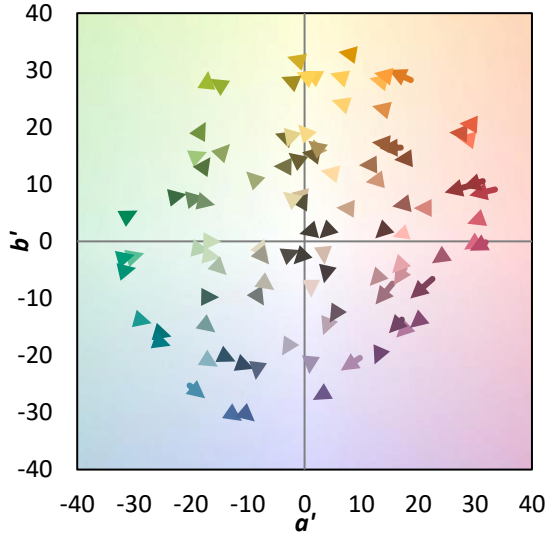



## Color Vector Graphics



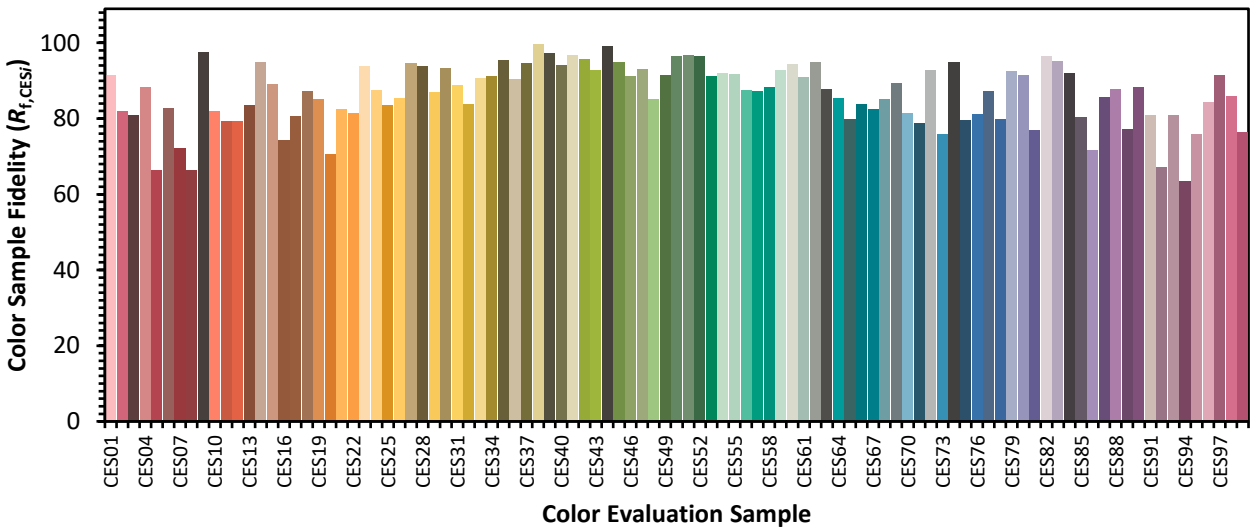



REPORT NUMBER: SP1-2407-184-10

# TM-30-18

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

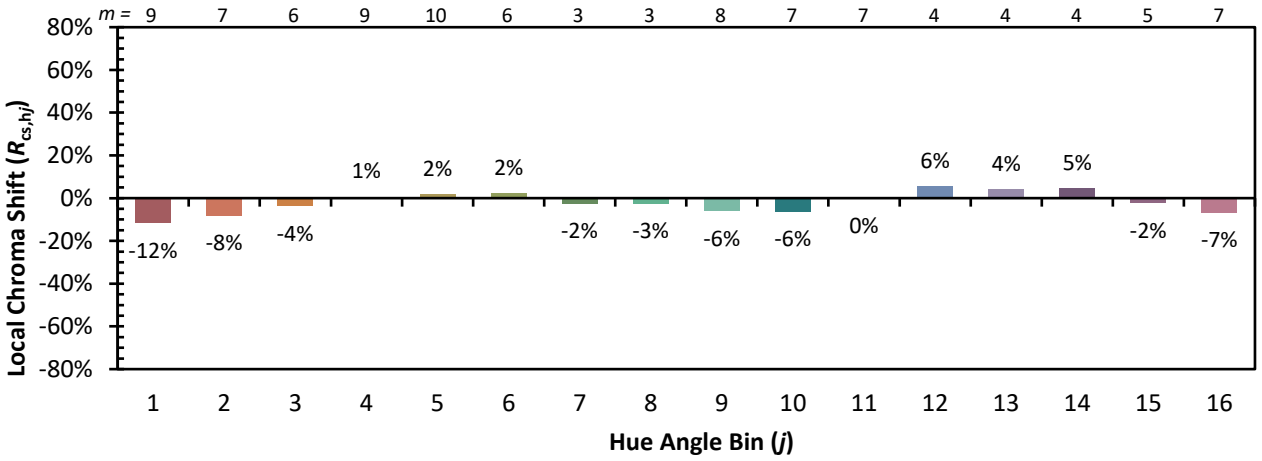
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 85 | CES51 = 97 | CES76 = 81 |
| CES02 = 62 | CES27 = 95 | CES52 = 96 | CES77 = 87 |
| CES03 = 31 | CES28 = 94 | CES53 = 91 | CES78 = 80 |
| CES04 = 70 | CES29 = 87 | CES54 = 92 | CES79 = 93 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 91 |
| CES06 = 51 | CES31 = 89 | CES56 = 88 | CES81 = 77 |
| CES07 = 41 | CES32 = 84 | CES57 = 87 | CES82 = 96 |
| CES08 = 40 | CES33 = 91 | CES58 = 88 | CES83 = 95 |
| CES09 = 29 | CES34 = 91 | CES59 = 93 | CES84 = 92 |
| CES10 = 75 | CES35 = 95 | CES60 = 94 | CES85 = 80 |
| CES11 = 58 | CES36 = 90 | CES61 = 91 | CES86 = 72 |
| CES12 = 64 | CES37 = 95 | CES62 = 95 | CES87 = 86 |
| CES13 = 43 | CES38 = 100 | CES63 = 88 | CES88 = 88 |
| CES14 = 74 | CES39 = 97 | CES64 = 85 | CES89 = 77 |
| CES15 = 71 | CES40 = 94 | CES65 = 80 | CES90 = 88 |
| CES16 = 47 | CES41 = 97 | CES66 = 84 | CES91 = 81 |
| CES17 = 49 | CES42 = 96 | CES67 = 82 | CES92 = 67 |
| CES18 = 56 | CES43 = 93 | CES68 = 85 | CES93 = 81 |
| CES19 = 72 | CES44 = 99 | CES69 = 89 | CES94 = 63 |
| CES20 = 66 | CES45 = 95 | CES70 = 81 | CES95 = 76 |
| CES21 = 86 | CES46 = 91 | CES71 = 79 | CES96 = 84 |
| CES22 = 78 | CES47 = 93 | CES72 = 93 | CES97 = 92 |
| CES23 = 91 | CES48 = 85 | CES73 = 76 | CES98 = 86 |
| CES24 = 90 | CES49 = 92 | CES74 = 95 | CES99 = 77 |
| CES25 = 72 | CES50 = 96 | CES75 = 80 | |

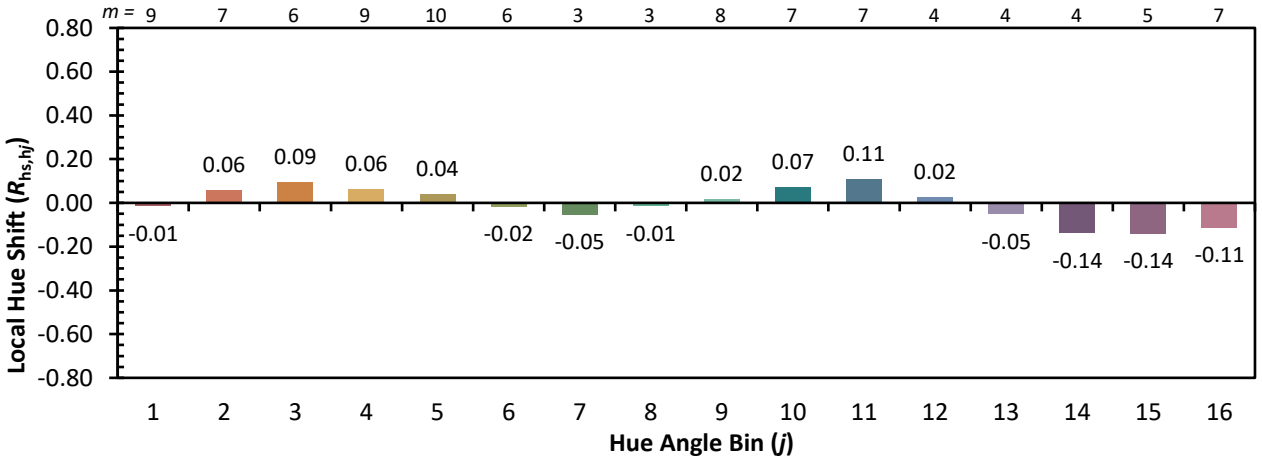


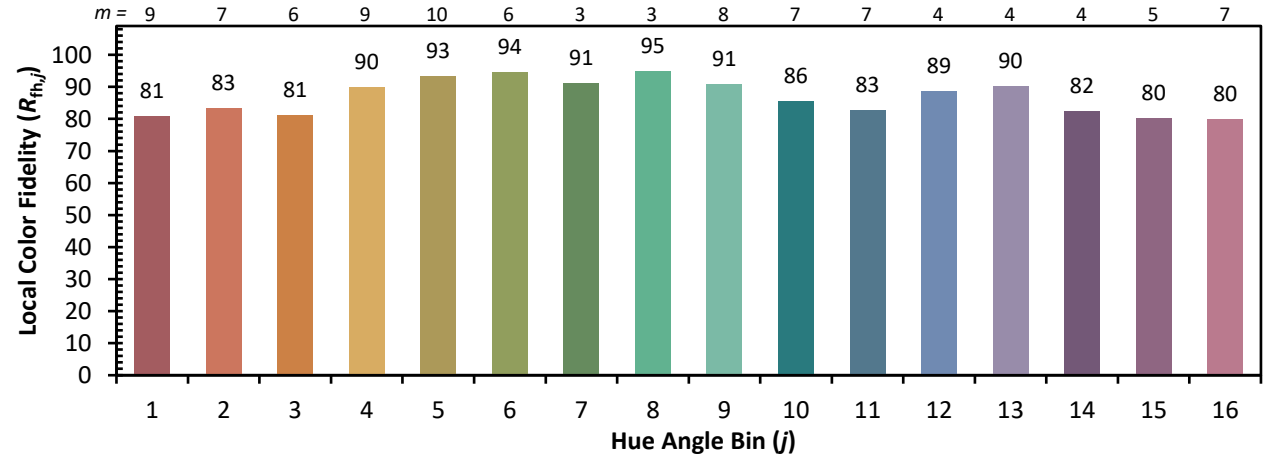
REPORT NUMBER: SP1-2407-184-10

# TM-30-18

## Color Rendition by Hue-Angle Bin



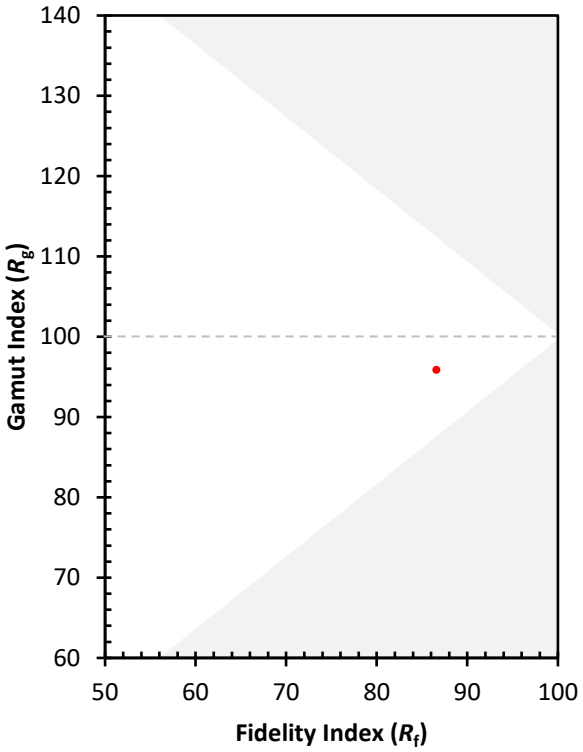



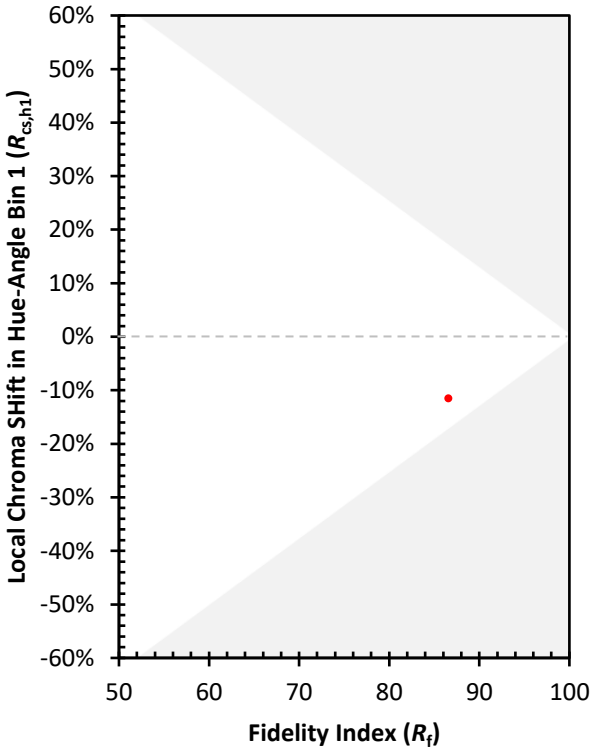



REPORT NUMBER: SP1-2407-184-10

# TM-30-18

## Measure Comparisons




(END OF REPORT)