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: McGRAW-EDISON

Report Number: P1704732

Luminaire Tested: GSS-SB5A-AMB-U-SL2-HSS

Issue Date: 10/28/2026

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: | P1704732 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 10/28/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB5A-AMB-U-SL2-HSS |
| Description: | GALLEON SITE SLIM HIGH DENSITY LED ARRAYS 5SQUARE 161W 1590K FIXTURE w/ T2 SPILL CONTROL DISTRIBUTION WITH HOUSE SIDE SHIELD |
| Light Source: | (130) 1590K CCT, 0 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 8205.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 51.1 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type II - Medium |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 160.6 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

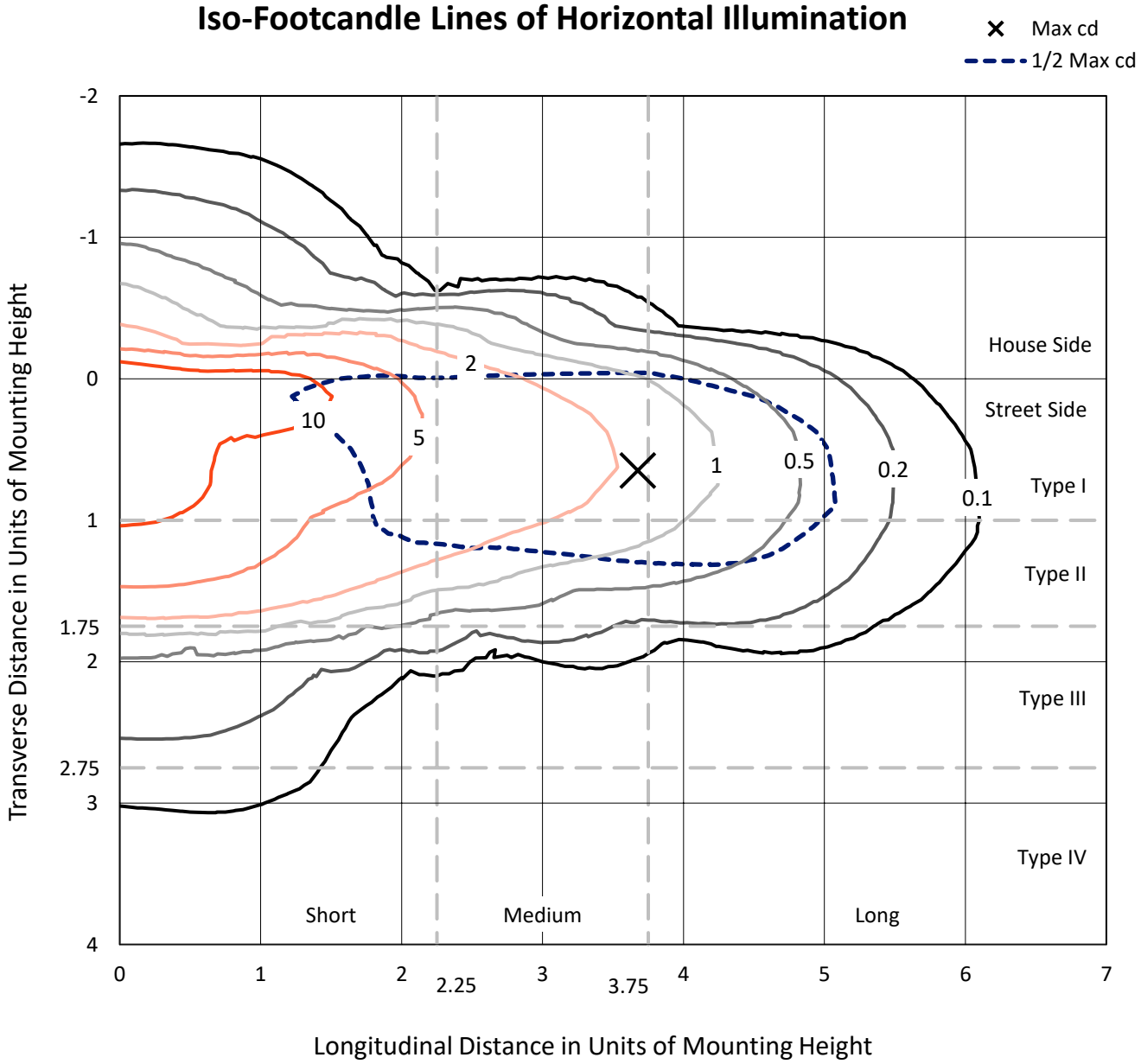


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REPORT NUMBER: P1704732
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## Iso-Footcandle Lines of Horizontal Illumination



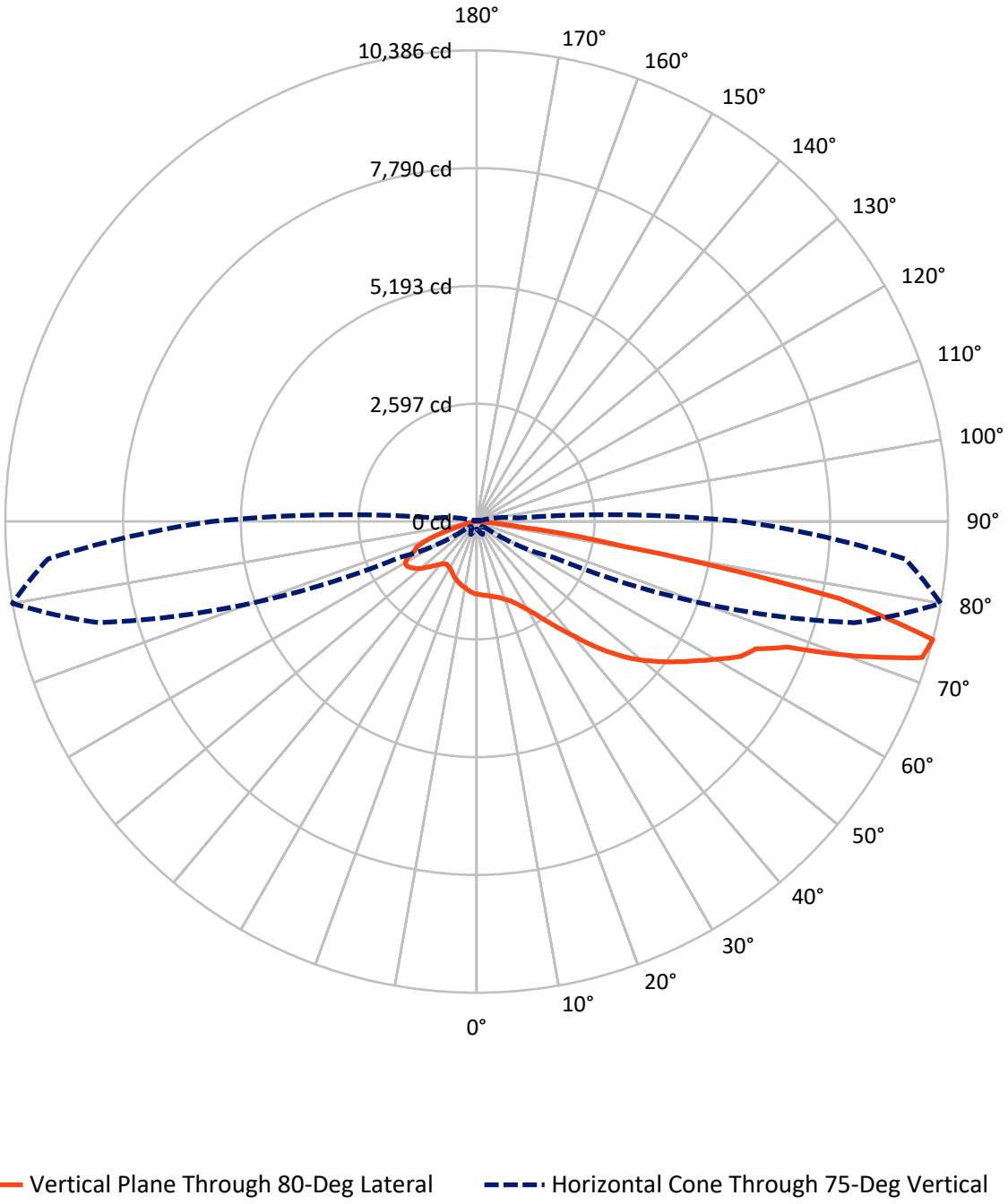

Based on 10 foot mounting height. Maximum calculated value = 16 fc
Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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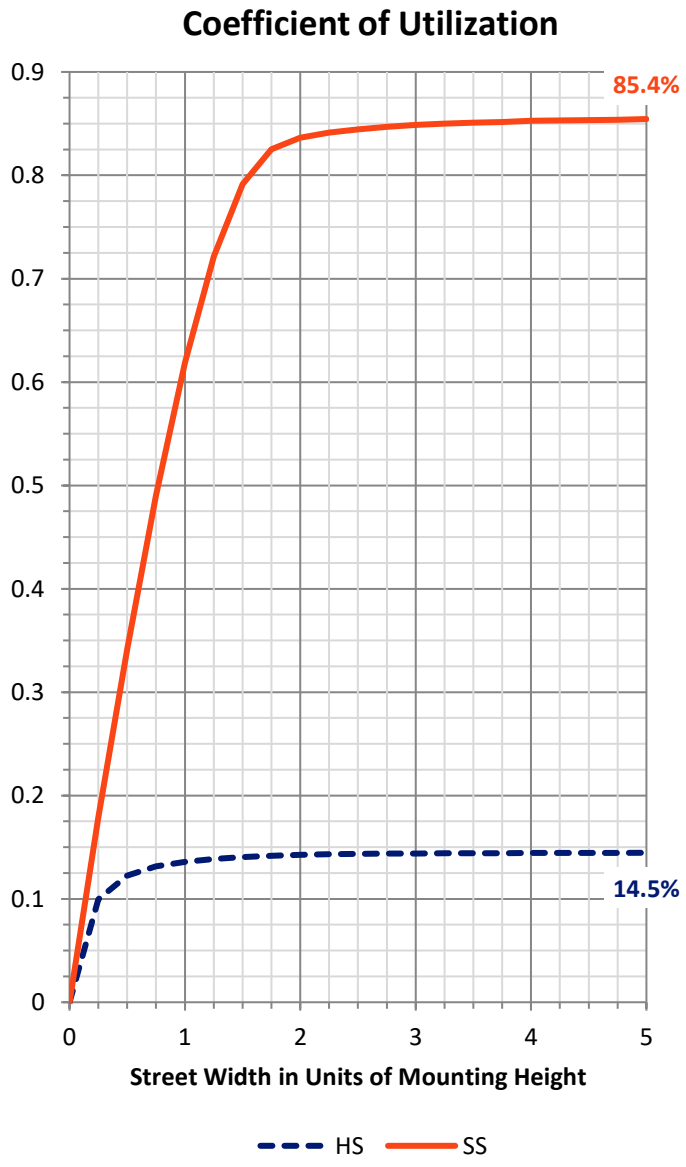
REPORT NUMBER: P1704732
CATALOG NUMBER: GSS-SB5A-AMB-U-SL2-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1195.5 | 0.0 | 1195.5 |
| | % Fixture | 14.6 | 0.0 | 14.6 |
| **Street Side** | Lumens | 7009.5 | 0.0 | 7009.5 |
| | % Fixture | 85.4 | 0.0 | 85.4 |
| **Total** | Lumens | 8205.1 | 0.0 | 8205.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 134.5 | 1.6 |
| 10°-20° | 308.6 | 3.8 |
| 20°-30° | 522.7 | 6.4 |
| 30°-40° | 861.0 | 10.5 |
| 40°-50° | 1358.4 | 16.6 |
| 50°-60° | 1873.2 | 22.8 |
| 60°-70° | 1815.0 | 22.1 |
| 70°-80° | 1240.1 | 15.1 |
| 80°-90° | 91.6 | 1.1 |
| 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° | 8205.1 | 100.0 |
| 0°-180° | 8205.1 | 100.0 |



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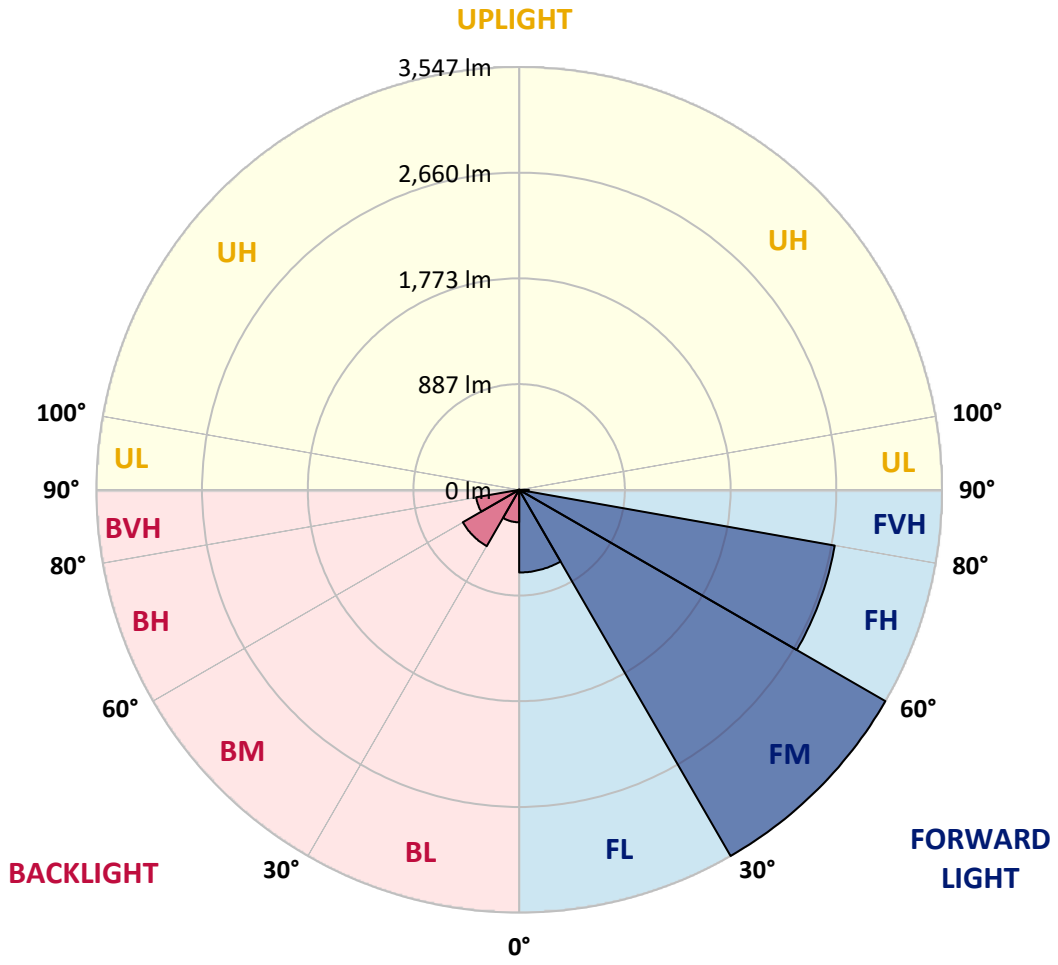
Scaled Data Report

REPORT NUMBER: P1704732
CATALOG NUMBER: GSS-SB5A-AMB-U-SL2-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 693.6 | 8.5 | | | |
| FM | (30°-60°) | 3546.9 | 43.2 | | | |
| FH | (60°-80°) | 2688.2 | 32.8 | | | G2/5000 |
| FVH | (80°-90°) | 80.9 | 1.0 | | | G1/100 |
| BL | (0°-30°) | 272.2 | 3.3 | B1/500 | | |
| BM | (30°-60°) | 545.7 | 6.7 | B1/1000 | | |
| BH | (60°-80°) | 366.8 | 4.5 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 10.8 | 0.1 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type II Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 80° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | *1599.7* | 1599.7 |
| 2.5° | 1688.8 | 1679.4 | 1674.7 | 1670.0 | 1674.7 | 1660.6 | 1660.6 | 1637.2 | 1627.8 | *1613.7* | 1609.0 |
| 5° | 1571.5 | 1562.1 | 1566.8 | 1585.6 | 1590.3 | 1613.7 | 1637.2 | 1665.3 | 1655.9 | *1632.5* | 1623.1 |
| 7.5° | 1421.4 | 1412.0 | 1426.1 | 1458.9 | 1501.1 | 1538.7 | 1576.2 | 1623.1 | 1670.0 | *1646.6* | 1623.1 |
| 10° | 1304.1 | 1304.1 | 1318.2 | 1337.0 | 1369.8 | 1444.8 | 1529.3 | 1590.3 | 1674.7 | *1674.7* | 1637.2 |
| 12.5° | 1285.3 | 1285.3 | 1276.0 | 1285.3 | 1308.8 | 1355.7 | 1458.9 | 1571.5 | 1670.0 | *1698.2* | 1655.9 |
| 15° | 1346.3 | 1337.0 | 1327.6 | 1313.5 | 1304.1 | 1327.6 | 1402.6 | 1566.8 | 1679.4 | *1731.0* | 1693.5 |
| 17.5° | 1458.9 | 1440.2 | 1426.1 | 1388.6 | 1355.7 | 1341.6 | 1388.6 | 1557.4 | 1707.5 | *1777.9* | 1735.7 |
| 20° | 1590.3 | 1576.2 | 1548.0 | 1487.1 | 1444.8 | 1393.2 | 1402.6 | 1538.7 | 1749.8 | *1834.2* | 1801.4 |
| 22.5° | 1740.4 | 1731.0 | 1698.2 | 1632.5 | 1543.4 | 1477.7 | 1444.8 | 1548.0 | 1806.1 | *1895.2* | 1876.4 |
| 25° | 1909.3 | 1899.9 | 1857.7 | 1787.3 | 1684.1 | 1585.6 | 1515.2 | 1576.2 | 1909.3 | *2003.1* | 1970.2 |
| 27.5° | 2059.4 | 2045.3 | 2003.1 | 1946.8 | 1834.2 | 1707.5 | 1609.0 | 1646.6 | 2017.2 | *2115.7* | 2082.8 |
| 30° | 2181.3 | 2181.3 | 2143.8 | 2087.5 | 1984.3 | 1824.8 | 1712.2 | 1735.7 | 2162.6 | *2270.5* | 2247.0 |
| 32.5° | 2331.5 | 2308.0 | 2279.9 | 2209.5 | 2111.0 | 1956.2 | 1834.2 | 1857.7 | 2326.8 | *2467.5* | 2439.3 |
| 35° | 2500.3 | 2491.0 | 2448.7 | 2350.2 | 2247.0 | 2082.8 | 1974.9 | 1998.4 | 2519.1 | *2725.5* | 2702.0 |
| 37.5° | 2612.9 | 2594.2 | 2566.0 | 2519.1 | 2373.7 | 2200.1 | 2092.2 | 2153.2 | 2734.9 | *3007.0* | 3011.7 |
| 40° | 2730.2 | 2711.4 | 2697.4 | 2664.5 | 2556.6 | 2317.4 | 2218.9 | 2331.5 | 2964.7 | *3330.7* | 3358.8 |
| 42.5° | 2852.2 | 2842.8 | 2833.4 | 2819.3 | 2725.5 | 2505.0 | 2359.6 | 2514.4 | 3222.8 | *3724.7* | 3795.1 |
| 45° | 2960.1 | 2946.0 | 2969.4 | 2974.1 | 2903.8 | 2725.5 | 2500.3 | 2692.7 | 3499.5 | *4109.4* | 4254.8 |
| 47.5° | 3058.6 | 3044.5 | 3086.7 | 3091.4 | 3058.6 | 2889.7 | 2664.5 | 2922.5 | 3799.8 | *4484.7* | 4719.2 |
| 50° | 3114.9 | 3114.9 | 3194.6 | 3213.4 | 3180.5 | 2988.2 | 2800.6 | 3110.2 | 4076.5 | *4817.7* | 5094.5 |
| 52.5° | 3058.6 | 3068.0 | 3199.3 | 3340.0 | 3330.7 | 3091.4 | 2946.0 | 3363.5 | 4376.8 | *5136.7* | 5460.4 |
| 55° | 3021.0 | 3016.3 | 3166.5 | 3429.2 | 3494.8 | 3232.1 | 3133.6 | 3612.1 | 4662.9 | *5451.0* | 5826.3 |
| 57.5° | 2444.0 | 2547.2 | 2824.0 | 3236.8 | 3635.6 | 3523.0 | 3396.3 | 3898.3 | 5024.1 | *5784.1* | 6117.1 |
| 60° | 1041.4 | 1121.2 | 1585.6 | 2612.9 | 3405.7 | 3870.1 | 3856.0 | 4297.0 | 5404.1 | *6150.0* | 6440.8 |
| 62.5° | 539.5 | 539.5 | 553.5 | 1144.6 | 2523.8 | 3804.4 | 4559.7 | 4977.2 | 5953.0 | *6544.0* | 6736.4 |
| 65° | 459.7 | 469.1 | 469.1 | 534.8 | 966.4 | 2809.9 | 4592.5 | 5807.5 | 6501.8 | *6764.5* | 6684.8 |
| 67.5° | 426.9 | 431.6 | 450.3 | 450.3 | 412.8 | 1093.0 | 3471.4 | 6211.0 | 7608.9 | *7388.4* | 6919.3 |
| 70° | 375.3 | 389.4 | 422.2 | 398.7 | 309.6 | 342.4 | 1604.3 | 5507.3 | 9091.3 | *8884.9* | 7787.2 |
| 72.5° | 295.5 | 309.6 | 370.6 | 365.9 | 243.9 | 220.5 | 469.1 | 3809.1 | 9494.7 | *10264.0* | 8730.1 |
| 75° | *168.9* | *173.6* | *225.2* | *309.6* | *192.3* | *159.5* | *215.8* | *1867.0* | *8617.5* | *10386.0* | *9480.6* |
| 77.5° | 117.3 | 122.0 | 164.2 | 215.8 | 131.3 | 112.6 | 140.7 | 591.1 | 6243.8 | *8176.5* | 7402.5 |
| 80° | 46.9 | 51.6 | 103.2 | 164.2 | 93.8 | 70.4 | 89.1 | 262.7 | 2476.9 | *3232.1* | 2988.2 |
| 82.5° | 18.8 | 23.5 | 61.0 | 84.4 | 61.0 | 46.9 | 51.6 | 122.0 | 609.8 | *947.6* | 492.6 |
| 85° | 14.1 | 9.4 | 28.1 | 42.2 | 32.8 | 23.5 | 28.1 | 56.3 | 117.3 | *140.7* | 89.1 |
| 87.5° | 0.0 | 0.0 | 4.7 | 4.7 | 4.7 | 4.7 | 9.4 | 18.8 | 23.5 | *28.1* | 28.1 |
| 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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REPORT NUMBER: P1704732
CATALOG NUMBER: GSS-SB5A-AMB-U-SL2-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 | 1599.7 |
| 2.5° | 1604.3 | 1595.0 | 1580.9 | 1557.4 | 1538.7 | 1538.7 | 1515.2 | 1505.8 | 1496.4 | 1501.1 | 1496.4 |
| 5° | 1599.7 | 1576.2 | 1534.0 | 1496.4 | 1426.1 | 1365.1 | 1322.9 | 1290.0 | 1261.9 | 1243.1 | 1257.2 |
| 7.5° | 1595.0 | 1557.4 | 1496.4 | 1379.2 | 1280.7 | 1177.5 | 1093.0 | 1013.3 | 961.7 | 938.2 | 952.3 |
| 10° | 1595.0 | 1543.4 | 1421.4 | 1261.9 | 1111.8 | 952.3 | 783.4 | 670.8 | 614.5 | 591.1 | 586.4 |
| 12.5° | 1604.3 | 1543.4 | 1369.8 | 1149.3 | 905.4 | 666.1 | 530.1 | 417.5 | 375.3 | 356.5 | 356.5 |
| 15° | 1623.1 | 1557.4 | 1299.4 | 1008.6 | 680.2 | 459.7 | 347.1 | 309.6 | 295.5 | 295.5 | 295.5 |
| 17.5° | 1651.3 | 1548.0 | 1233.7 | 825.6 | 487.9 | 337.8 | 295.5 | 281.5 | 272.1 | 272.1 | 272.1 |
| 20° | 1702.9 | 1548.0 | 1154.0 | 666.1 | 356.5 | 290.8 | 267.4 | 258.0 | 253.3 | 253.3 | 253.3 |
| 22.5° | 1759.1 | 1562.1 | 1064.9 | 501.9 | 295.5 | 262.7 | 243.9 | 234.6 | 229.9 | 229.9 | 234.6 |
| 25° | 1834.2 | 1590.3 | 933.5 | 375.3 | 267.4 | 239.2 | 220.5 | 211.1 | 211.1 | 211.1 | 215.8 |
| 27.5° | 1904.6 | 1618.4 | 825.6 | 309.6 | 239.2 | 211.1 | 197.0 | 192.3 | 192.3 | 197.0 | 197.0 |
| 30° | 2007.8 | 1655.9 | 713.0 | 267.4 | 220.5 | 197.0 | 183.0 | 178.3 | 183.0 | 187.6 | 187.6 |
| 32.5° | 2148.5 | 1731.0 | 605.1 | 248.6 | 206.4 | 183.0 | 173.6 | 168.9 | 173.6 | 178.3 | 183.0 |
| 35° | 2364.3 | 1810.7 | 492.6 | 234.6 | 192.3 | 173.6 | 164.2 | 159.5 | 164.2 | 168.9 | 168.9 |
| 37.5° | 2608.2 | 1914.0 | 422.2 | 225.2 | 187.6 | 168.9 | 159.5 | 154.8 | 154.8 | 154.8 | 154.8 |
| 40° | 2861.5 | 2040.6 | 389.4 | 220.5 | 178.3 | 164.2 | 150.1 | 140.7 | 140.7 | 145.4 | 145.4 |
| 42.5° | 3213.4 | 2190.7 | 375.3 | 215.8 | 178.3 | 159.5 | 140.7 | 131.3 | 131.3 | 136.0 | 136.0 |
| 45° | 3574.6 | 2383.1 | 365.9 | 211.1 | 173.6 | 150.1 | 131.3 | 122.0 | 122.0 | 126.7 | 126.7 |
| 47.5° | 3959.3 | 2584.8 | 365.9 | 206.4 | 168.9 | 140.7 | 126.7 | 117.3 | 112.6 | 112.6 | 117.3 |
| 50° | 4348.6 | 2795.9 | 384.7 | 197.0 | 159.5 | 136.0 | 122.0 | 107.9 | 107.9 | 103.2 | 103.2 |
| 52.5° | 4658.2 | 2960.1 | 403.4 | 183.0 | 154.8 | 131.3 | 117.3 | 103.2 | 98.5 | 93.8 | 93.8 |
| 55° | 4920.9 | 3096.1 | 417.5 | 173.6 | 150.1 | 122.0 | 112.6 | 98.5 | 89.1 | 89.1 | 84.4 |
| 57.5° | 5193.0 | 3227.4 | 408.1 | 159.5 | 136.0 | 117.3 | 103.2 | 93.8 | 84.4 | 79.7 | 79.7 |
| 60° | 5385.3 | 3283.7 | 365.9 | 145.4 | 126.7 | 107.9 | 98.5 | 84.4 | 75.1 | 70.4 | 65.7 |
| 62.5° | 5507.3 | 3185.2 | 295.5 | 131.3 | 112.6 | 103.2 | 93.8 | 79.7 | 65.7 | 56.3 | 56.3 |
| 65° | 5221.1 | 2833.4 | 197.0 | 112.6 | 103.2 | 93.8 | 79.7 | 65.7 | 51.6 | 42.2 | 42.2 |
| 67.5° | 5296.2 | 2720.8 | 150.1 | 98.5 | 89.1 | 75.1 | 65.7 | 56.3 | 42.2 | 32.8 | 32.8 |
| 70° | 5530.8 | 2218.9 | 107.9 | 84.4 | 75.1 | 61.0 | 51.6 | 46.9 | 37.5 | 28.1 | 28.1 |
| 72.5° | 5709.0 | 1538.7 | 84.4 | 70.4 | 61.0 | 42.2 | 37.5 | 37.5 | 28.1 | 18.8 | 18.8 |
| 75° | *5835.7* | *891.3* | *65.7* | *56.3* | *42.2* | *32.8* | *32.8* | *28.1* | *18.8* | *14.1* | *14.1* |
| 77.5° | 4085.9 | 403.4 | 51.6 | 42.2 | 28.1 | 23.5 | 18.8 | 14.1 | 14.1 | 4.7 | 4.7 |
| 80° | 1801.4 | 178.3 | 42.2 | 28.1 | 18.8 | 14.1 | 14.1 | 9.4 | 4.7 | 4.7 | 0.0 |
| 82.5° | 286.2 | 65.7 | 28.1 | 23.5 | 14.1 | 9.4 | 4.7 | 4.7 | 0.0 | 0.0 | 0.0 |
| 85° | 61.0 | 32.8 | 18.8 | 14.1 | 9.4 | 4.7 | 4.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 23.5 | 23.5 | 14.1 | 9.4 | 4.7 | 4.7 | 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: SP3-2509-541-1

Test Date: 09/16/2025

Luminaire Tested: GALN-SA1A-AMB-U-T3BC

Data in this report applies to families of products including GALN-SA1A*

Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

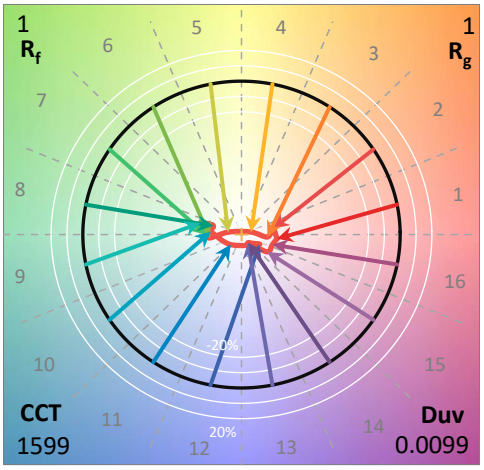
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP3-2509-541-1 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP3 - 3M SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/02/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GALN-SA1A-AMB-U-T3BC** |
| Description: | GALLEON AREA AND ROADWAY LUMINAIRE. (1) AMBER, 615MA LIGHTSQUARES TYPE III ROADWAY OPTICS WITH ANGLED BACKLIGHT CONTROL HEATSINK |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 1599 |
| CIE u': | 0.3452 |
| CIE v': | 0.5480 |
| Duv: | 0.0099 |
| CIE x: | 0.5859 |
| CIE y: | 0.4133 |
| CIE z: | 0.0008 |
| Peak Wavelength (nm): | 596 |
| Dominant Wavelength (nm): | 591 |
| Purity: | 99.94224 |
| Rf: | 1.2 |
| Rg: | 0.9 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | -22.7 | | | | |
| R1: | -36.4 | R9: | -395.3 | | |
| R2: | 50.8 | R10: | 26.0 | | |
| R3: | 18.3 | R11: | -97.2 | | |
| R4: | -69.1 | R12: | -14.1 | | |
| R5: | -41.9 | R13: | -17.6 | | |
| R6: | 38.5 | R14: | 46.4 | | |
| R7: | -6.7 | R15: | -69.4 | | |
| R8: | -135.4 | | | | |




## Test Conditions

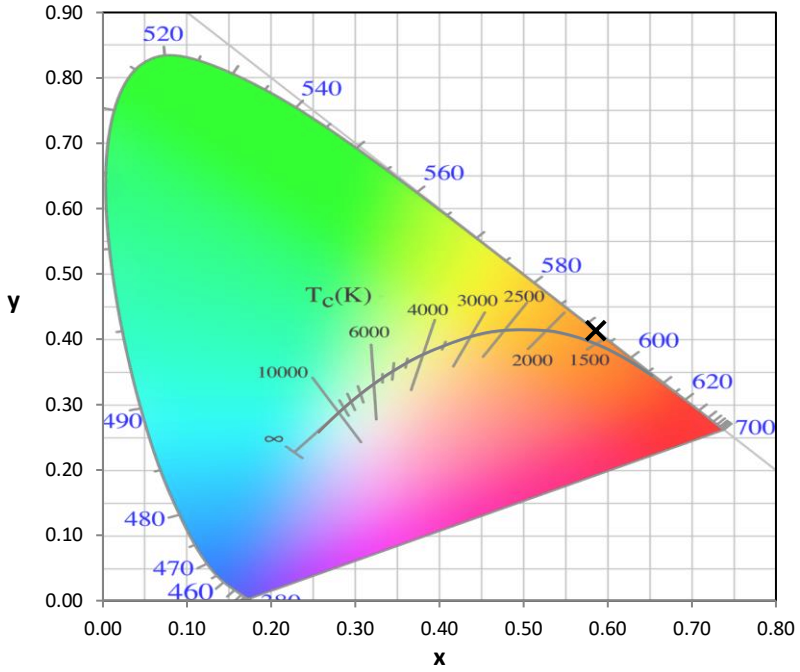
| | |
|---|---|
| Stabilization Time: | 64M |
| Operation Time: | 2H 4M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP3-2509-541-1

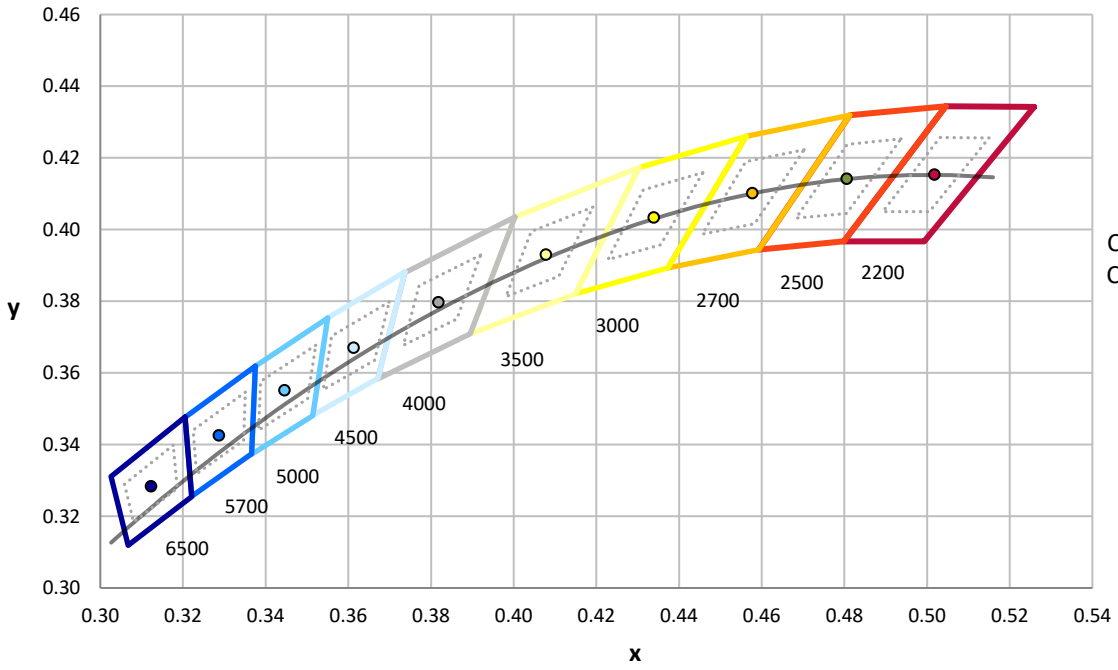
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 7/1/2025 | 1/1/2026 |
| Power Meter | XITRON INXT2011006 | 1/20/2025 | 1/20/2026 |
| AC Power Source | CHROMA 61604 IN6064A | 10/22/2024 | 10/22/2025 |
| DC Power Source | EYSIGHT N5770A IN0534 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | TANDD IN4036E | 10/22/2024 | 10/22/2025 |
| | | | |

REPORT NUMBER: SP3-2509-541-1

## CIE 1931 Chromaticity Diagram




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

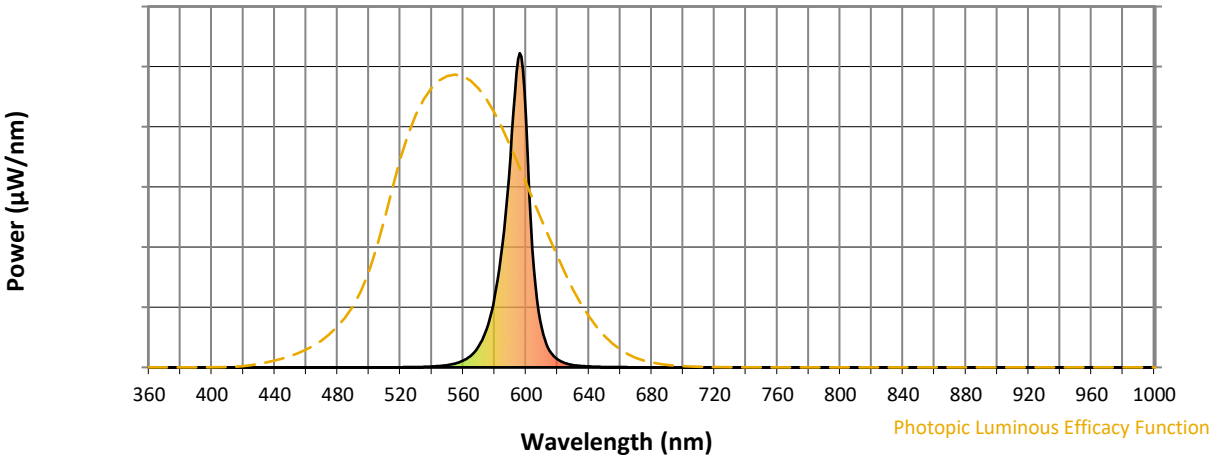



CCT = 1599K
CIE x = 0.5859
CIE y = 0.4133
Duv = 0.0099

Point lies outside the range

REPORT NUMBER: SP3-2509-541-1

## Photopic Flux vs. Wavelength

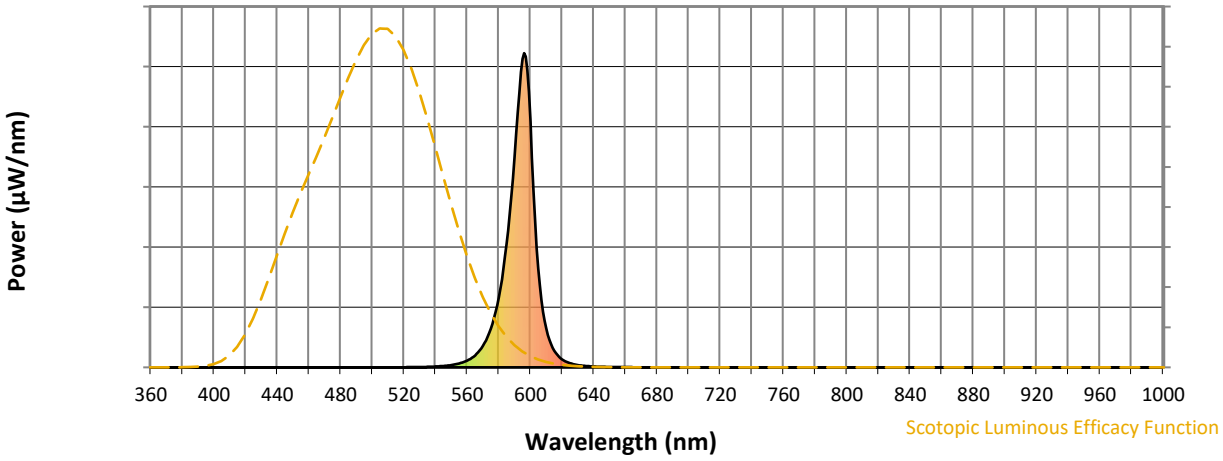



## Photopic Lumens: NR

| 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 | 0 | NR | 620 | 26 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 8 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 4 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 1 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 1 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 2 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 3 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 12 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 22 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 38 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 68 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 123 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 223 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 392 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 669 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 982 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 783 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 315 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 124 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 53 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP3-2509-541-1

## Scotopic Flux vs. Wavelength

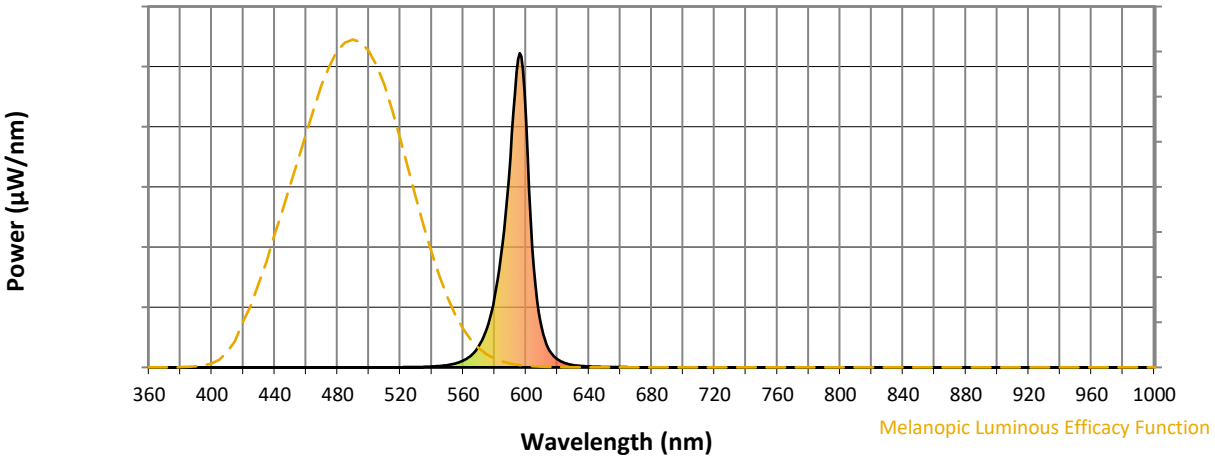



**Scotopic Lumens: NR** **S/P: 0.23**

| 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 | 0 | NR | 620 | 26 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 8 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 4 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 1 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 1 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 2 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 3 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 12 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 22 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 38 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 68 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 123 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 223 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 392 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 669 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 982 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 783 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 315 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 124 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 53 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP3-2509-541-1

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 0.13**

| 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 | 0 | NR | 620 | 26 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 8 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 4 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 3 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 2 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 1 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 1 | NR | 655 | 1 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 1 | NR | 660 | 1 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 2 | NR | 665 | 1 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 3 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 4 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 7 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 12 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 22 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 38 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 68 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 123 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 223 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 392 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 669 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 982 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 783 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 315 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 124 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 53 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

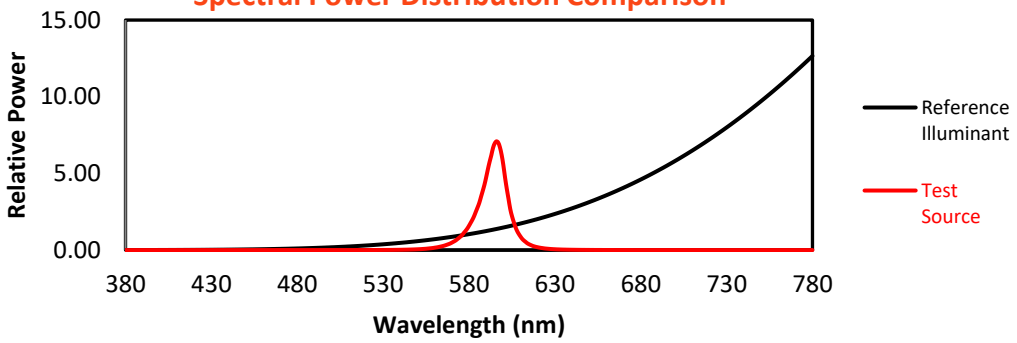
REPORT NUMBER: SP3-2509-541-1

# TM-30-18

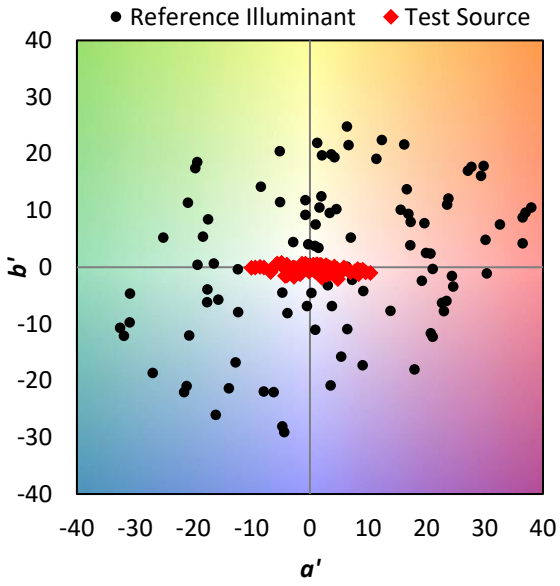
## Summary

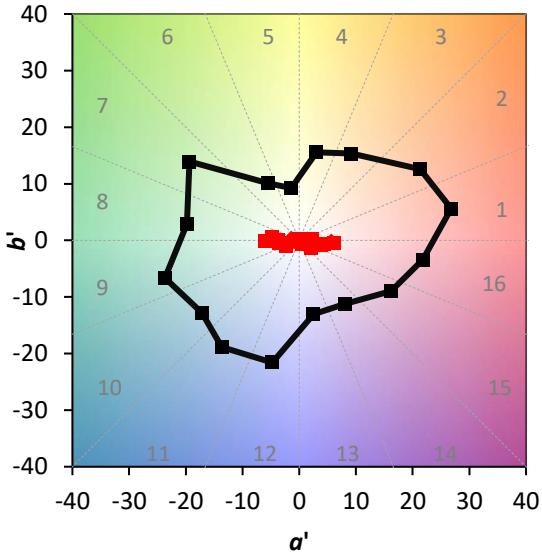
$R_f$ = 1.2
$R_g$ = 0.9
CIE $R_a$ = -22.7
$R_9$ = -395.3

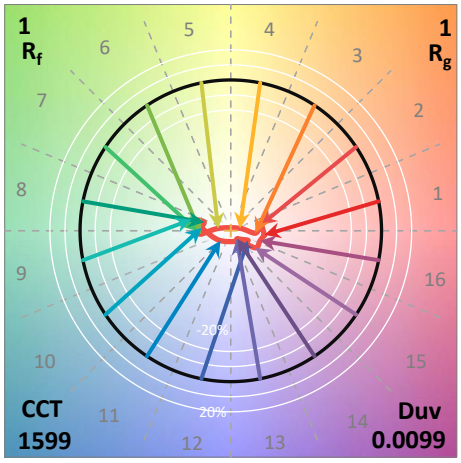
## Spectral Power Distribution Comparison

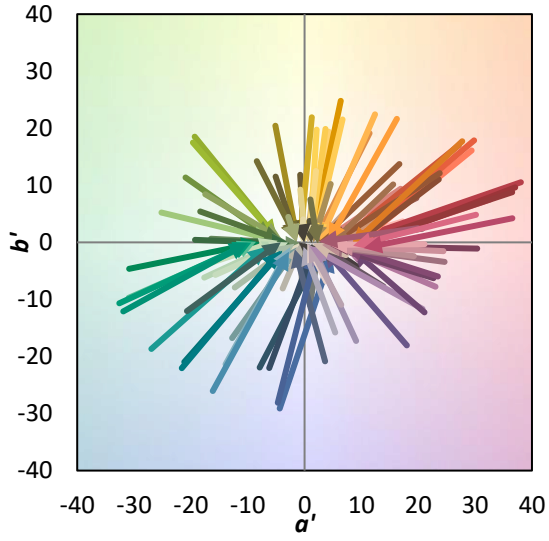



## Color Vector Graphics



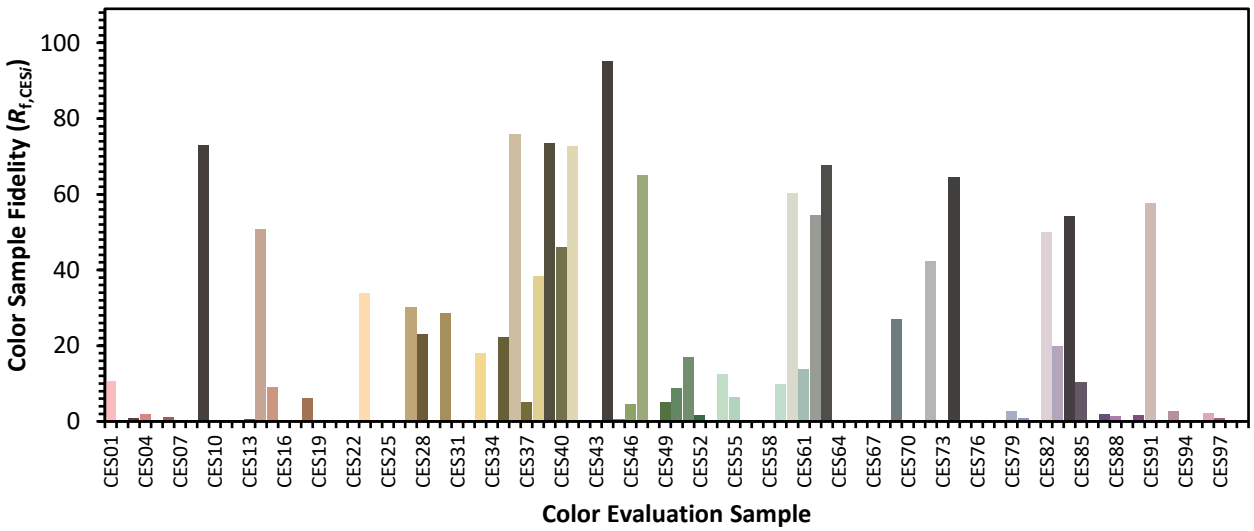



REPORT NUMBER: SP3-2509-541-1

# TM-30-18

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

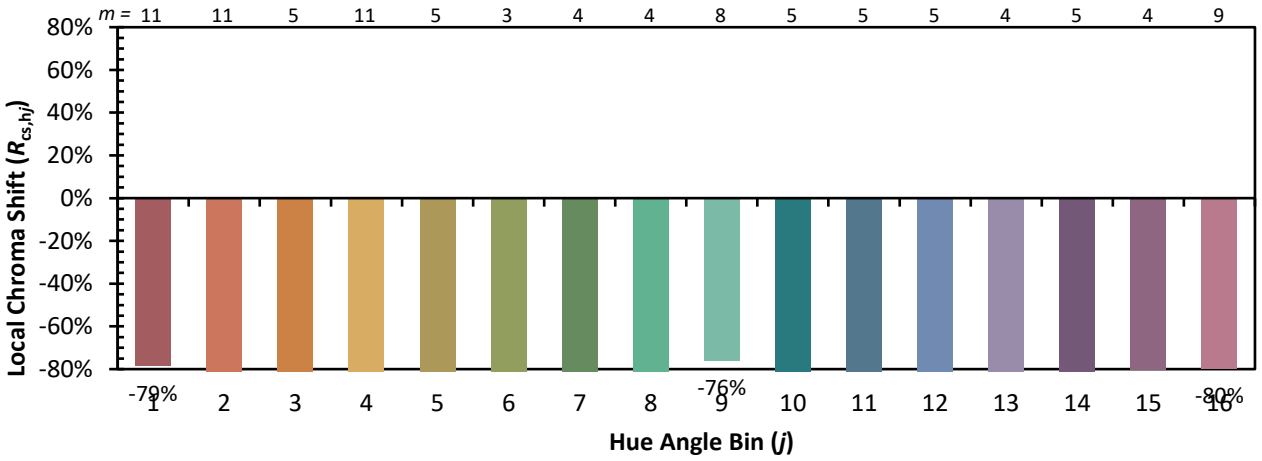
| | | | |
|---|---|---|---|
| CES01 = 90 | CES26 = 0 | CES51 = 17 | CES76 = 0 |
| CES02 = 69 | CES27 = 30 | CES52 = 2 | CES77 = 0 |
| CES03 = 30 | CES28 = 23 | CES53 = 0 | CES78 = 0 |
| CES04 = 77 | CES29 = 0 | CES54 = 12 | CES79 = 3 |
| CES05 = 51 | CES30 = 29 | CES55 = 6 | CES80 = 1 |
| CES06 = 56 | CES31 = 0 | CES56 = 0 | CES81 = 0 |
| CES07 = 40 | CES32 = 0 | CES57 = 0 | CES82 = 50 |
| CES08 = 38 | CES33 = 18 | CES58 = 0 | CES83 = 20 |
| CES09 = 29 | CES34 = 0 | CES59 = 10 | CES84 = 54 |
| CES10 = 87 | CES35 = 22 | CES60 = 60 | CES85 = 10 |
| CES11 = 70 | CES36 = 76 | CES61 = 14 | CES86 = 0 |
| CES12 = 75 | CES37 = 5 | CES62 = 55 | CES87 = 2 |
| CES13 = 46 | CES38 = 38 | CES63 = 68 | CES88 = 1 |
| CES14 = 76 | CES39 = 73 | CES64 = 0 | CES89 = 0 |
| CES15 = 74 | CES40 = 46 | CES65 = 0 | CES90 = 2 |
| CES16 = 49 | CES41 = 73 | CES66 = 0 | CES91 = 58 |
| CES17 = 56 | CES42 = 0 | CES67 = 0 | CES92 = 0 |
| CES18 = 59 | CES43 = 0 | CES68 = 0 | CES93 = 3 |
| CES19 = 80 | CES44 = 95 | CES69 = 27 | CES94 = 0 |
| CES20 = 71 | CES45 = 1 | CES70 = 0 | CES95 = 0 |
| CES21 = 94 | CES46 = 5 | CES71 = 0 | CES96 = 2 |
| CES22 = 86 | CES47 = 65 | CES72 = 42 | CES97 = 1 |
| CES23 = 94 | CES48 = 0 | CES73 = 0 | CES98 = 0 |
| CES24 = 95 | CES49 = 5 | CES74 = 65 | CES99 = 0 |
| CES25 = 79 | CES50 = 9 | CES75 = 0 | |

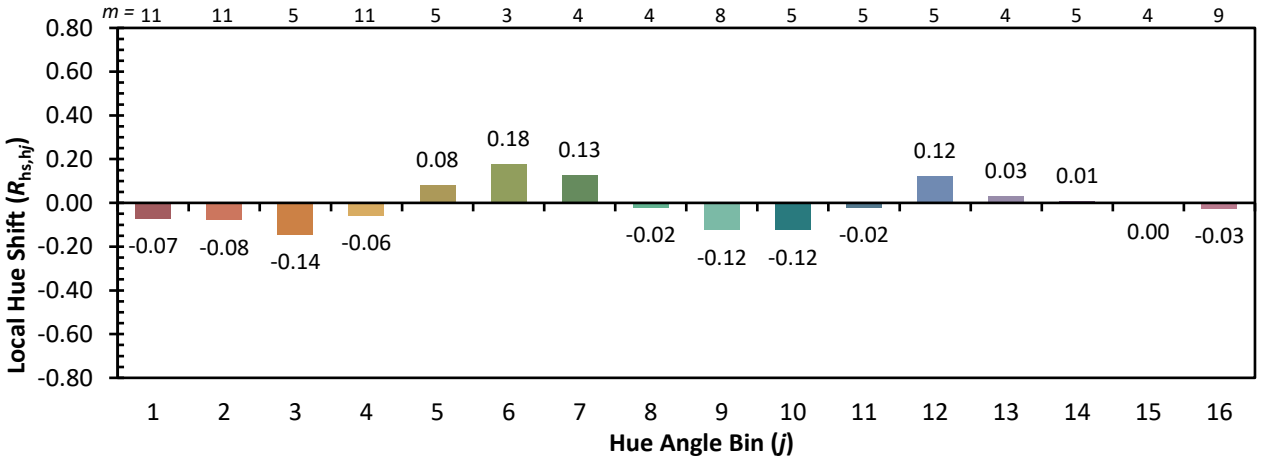


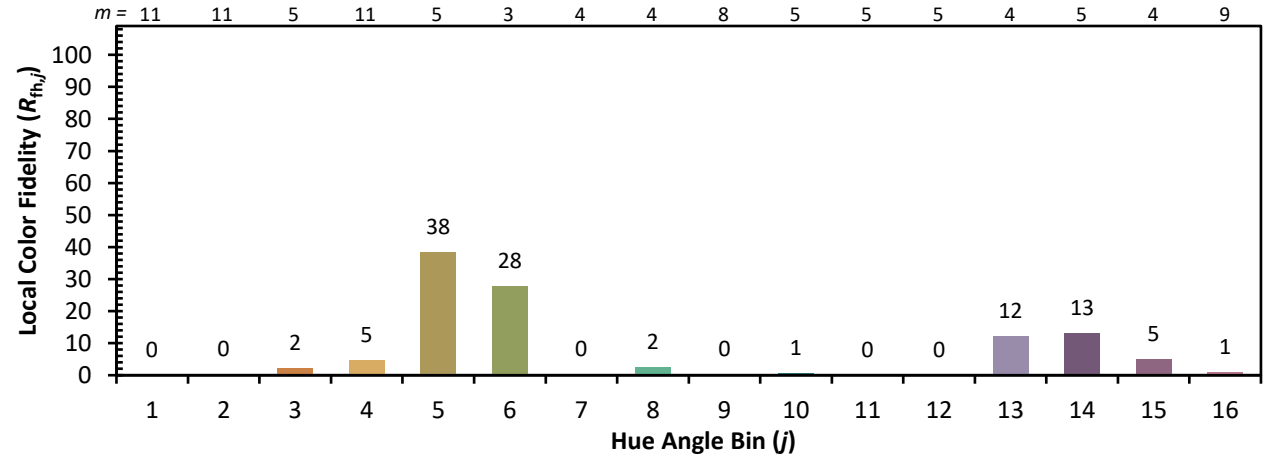
REPORT NUMBER: SP3-2509-541-1

# TM-30-18

## Color Rendition by Hue-Angle Bin



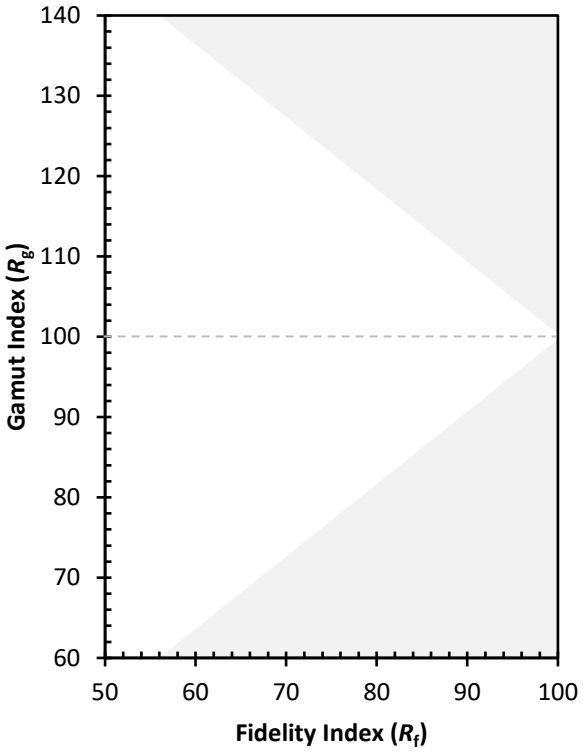



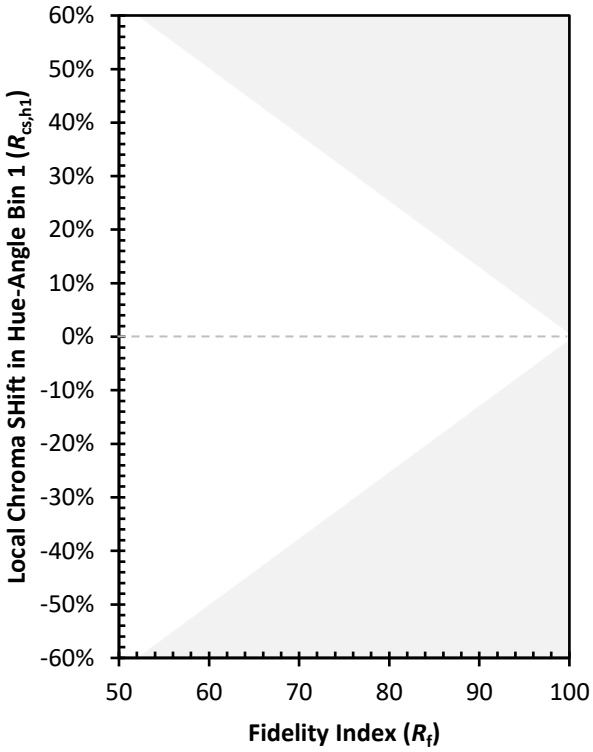



REPORT NUMBER: SP3-2509-541-1

# TM-30-18

## Measure Comparisons




(END OF REPORT)