Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
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: P1704729

Luminaire Tested: GSS-SB2A-AMB-U-T2LG

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: | P1704729 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 10/28/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB2A-AMB-U-T2LG |
| Description: | GALLEON SITE SLIM HIGH DENSITY LED ARRAYS 2SQUARE 68W 1590K FIXTURE w/ T2 LOW GLARE DISTRIBUTION |
| Light Source: | (52) 1590K CCT, 0 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4242.8 lumens |
| Efficiency: | N/A |
| Efficacy: | 62.4 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B1 - U0 - G1 |

| | |
|---|---|
| Input Watts (W): | 68 |
| 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 |

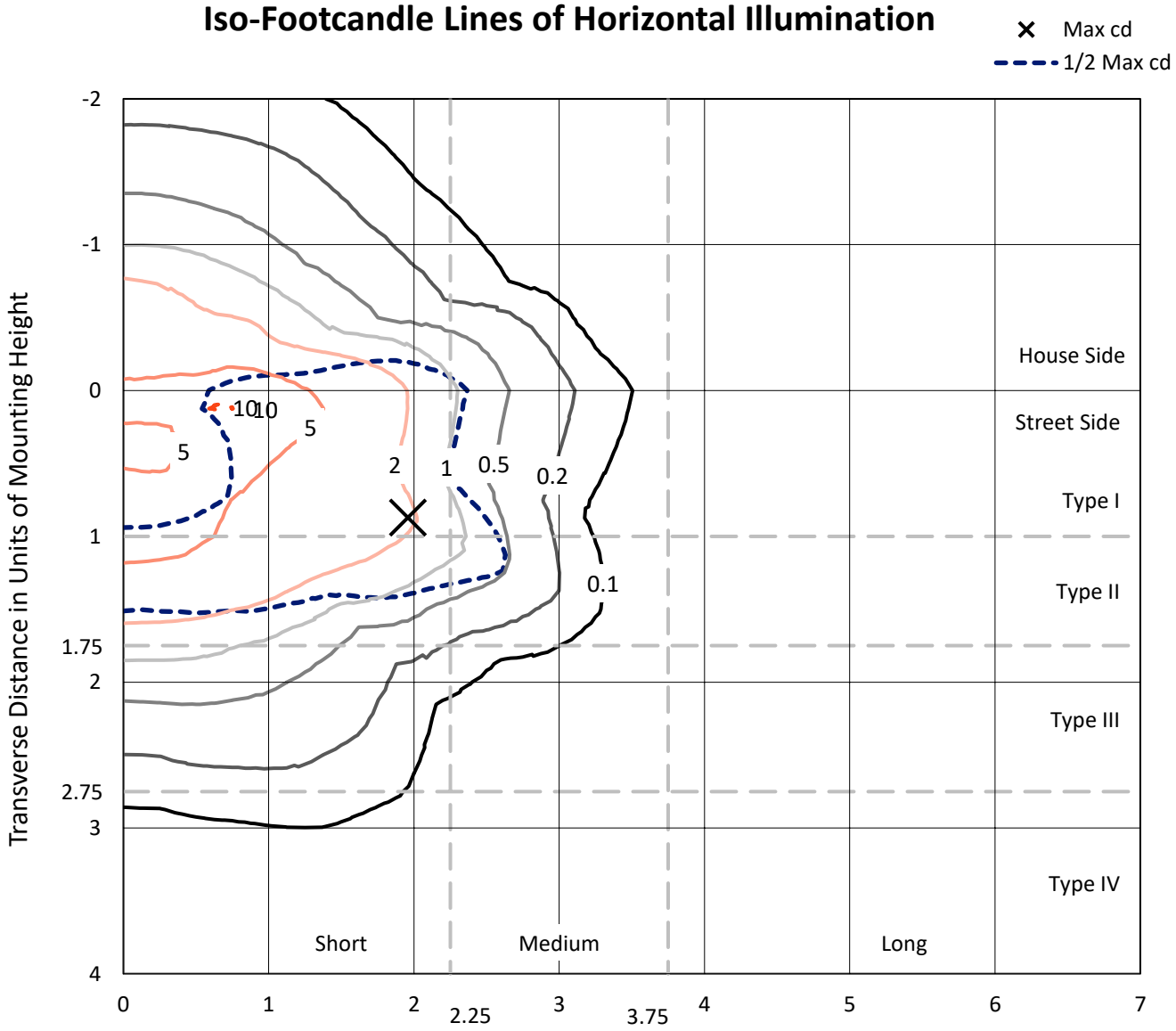


Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1704729
CATALOG NUMBER: GSS-SB2A-AMB-U-T2LG

## Iso-Footcandle Lines of Horizontal Illumination



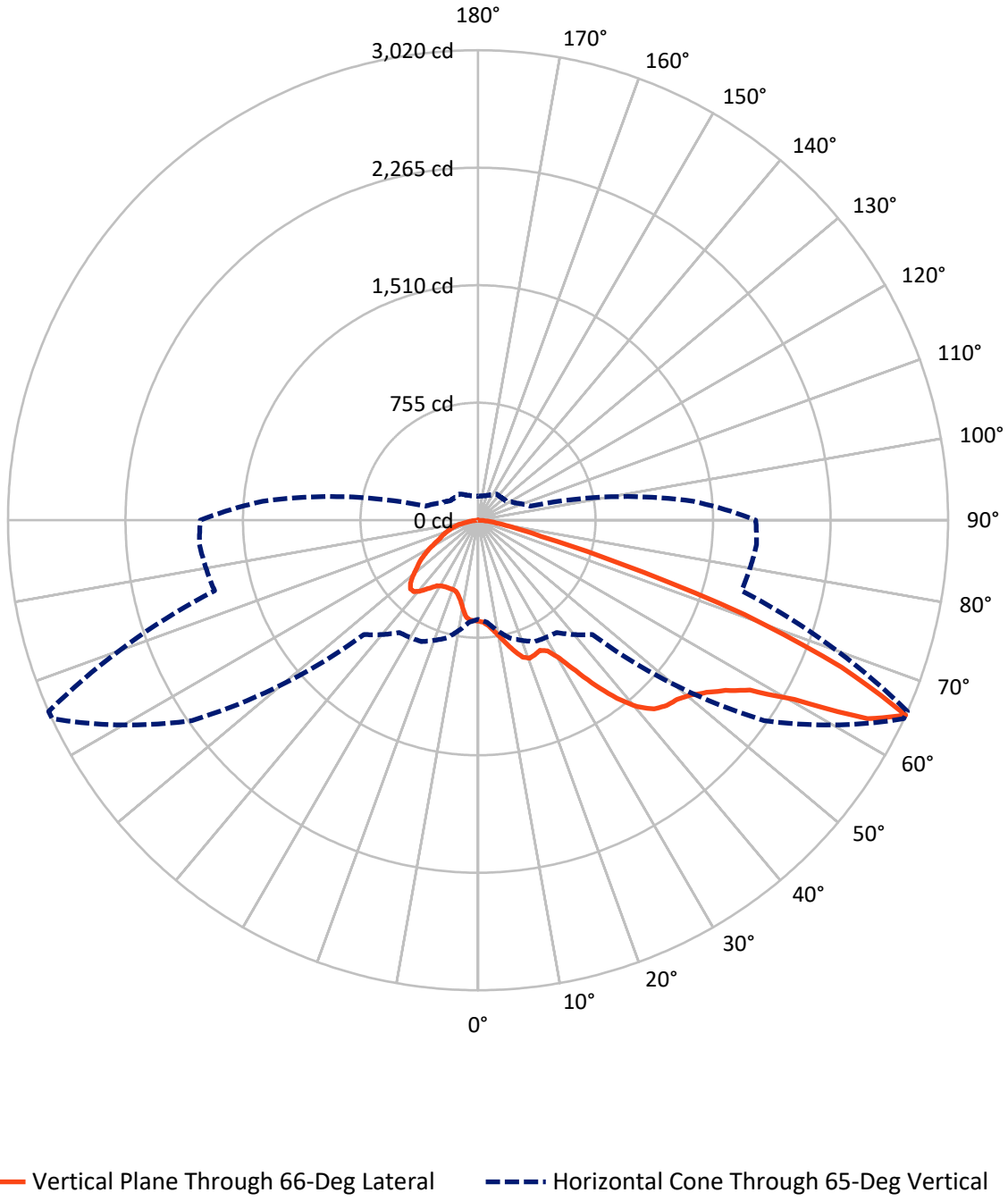

Based on 10 foot mounting height. Maximum calculated value = 10.1 fc
Type II - Short - N/A

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1704729
CATALOG NUMBER: GSS-SB2A-AMB-U-T2LG

## Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

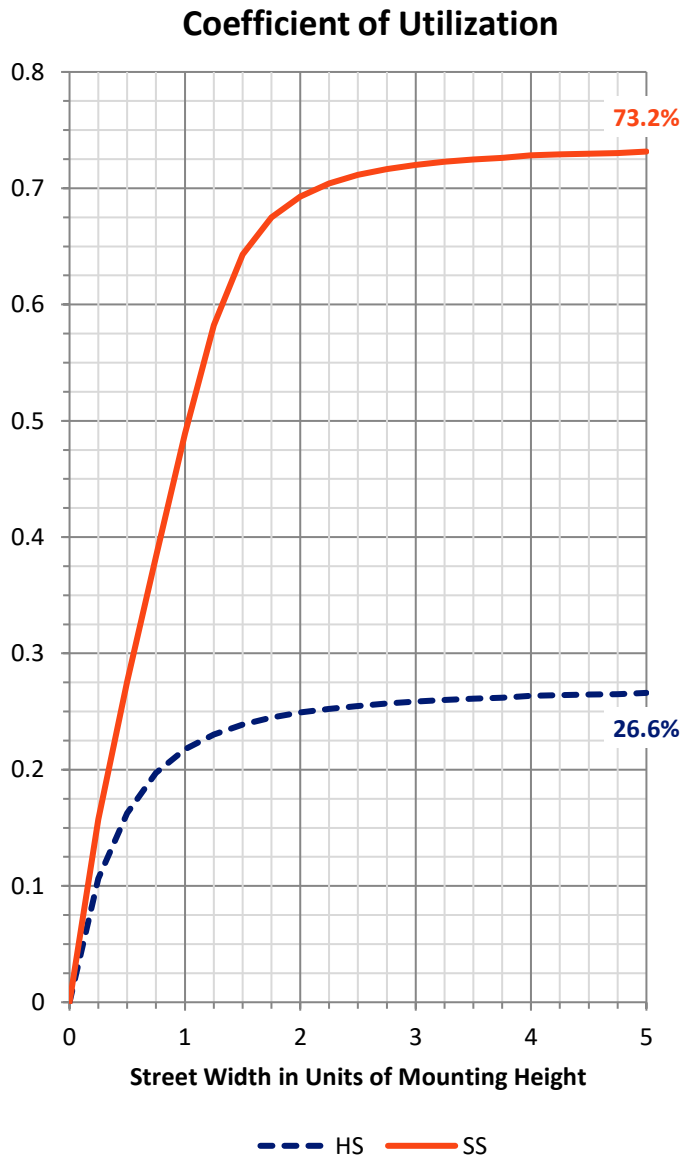
REPORT NUMBER: P1704729
CATALOG NUMBER: GSS-SB2A-AMB-U-T2LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1137.6 | 0.0 | 1137.6 |
| | % Fixture | 26.8 | 0.0 | 26.8 |
| **Street Side** | Lumens | 3105.2 | 0.0 | 3105.2 |
| | % Fixture | 73.2 | 0.0 | 73.2 |
| **Total** | Lumens | 4242.8 | 0.0 | 4242.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 59.4 | 1.4 |
| 10°-20° | 174.1 | 4.1 |
| 20°-30° | 322.4 | 7.6 |
| 30°-40° | 564.3 | 13.3 |
| 40°-50° | 870.7 | 20.5 |
| 50°-60° | 1085.9 | 25.6 |
| 60°-70° | 862.0 | 20.3 |
| 70°-80° | 266.5 | 6.3 |
| 80°-90° | 37.4 | 0.9 |
| 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° | 4242.8 | 100.0 |
| 0°-180° | 4242.8 | 100.0 |



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

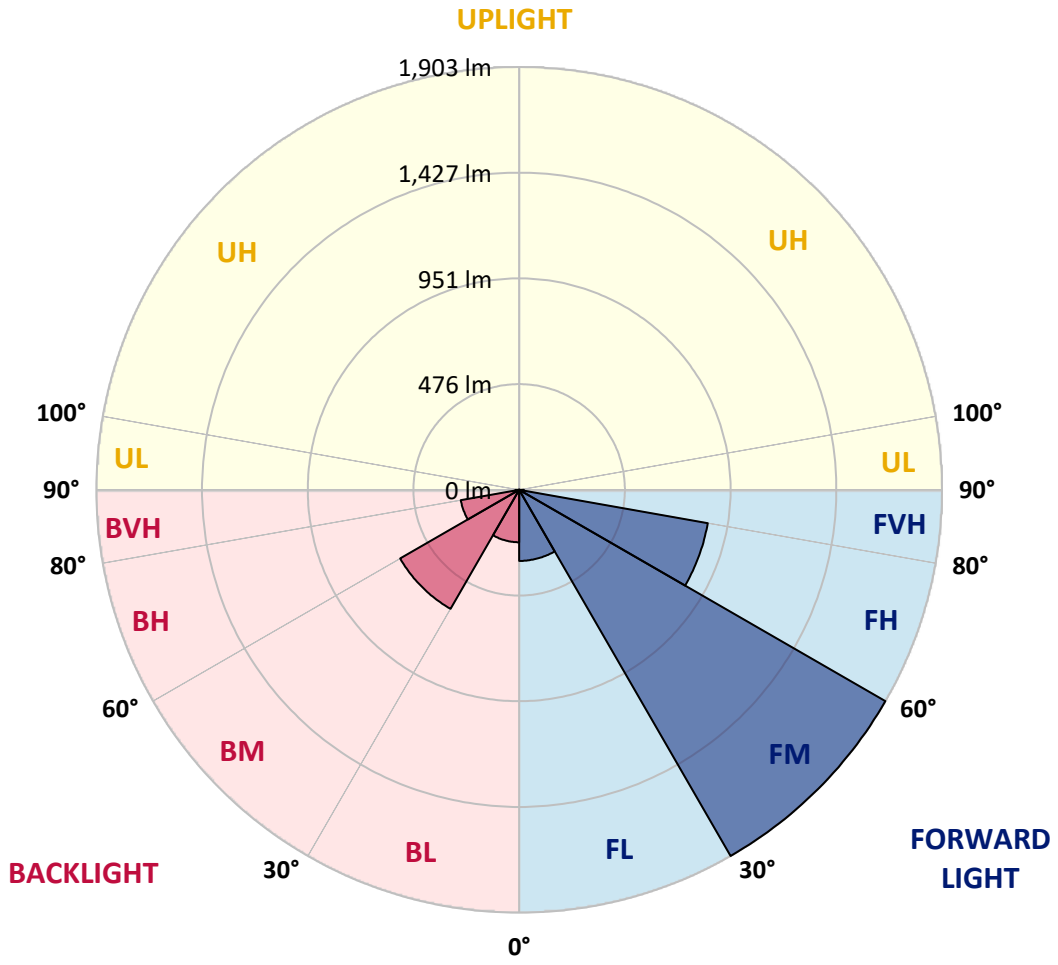
Scaled Data Report

REPORT NUMBER: P1704729
CATALOG NUMBER: GSS-SB2A-AMB-U-T2LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 319.9 | 7.5 | | | |
| FM | (30°-60°) | 1902.8 | 44.8 | | | |
| FH | (60°-80°) | 861.8 | 20.3 | | | G1/1800 |
| FVH | (80°-90°) | 20.6 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 236.0 | 5.6 | B1/500 | | |
| BM | (30°-60°) | 618.1 | 14.6 | B1/1000 | | |
| BH | (60°-80°) | 266.7 | 6.3 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 16.7 | 0.4 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G1**
Type II Short



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1704729
CATALOG NUMBER: GSS-SB2A-AMB-U-T2LG

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | *648.8* | 648.8 | 648.8 |
| 2.5° | 670.7 | 670.7 | 666.7 | 666.7 | 666.7 | 664.7 | 664.7 | 660.7 | *656.7* | 660.7 | 652.8 |
| 5° | 692.7 | 690.7 | 688.7 | 688.7 | 692.7 | 690.7 | 688.7 | 684.7 | *678.7* | 680.7 | 674.7 |
| 7.5° | 686.7 | 686.7 | 688.7 | 698.7 | 702.7 | 712.6 | 720.6 | 718.6 | *714.6* | 714.6 | 704.7 |
| 10° | 648.8 | 648.8 | 660.7 | 684.7 | 708.6 | 730.6 | 752.6 | 762.5 | *760.5* | 762.5 | 752.6 |
| 12.5° | 531.0 | 527.0 | 547.0 | 594.9 | 658.7 | 736.6 | 784.5 | 810.5 | *814.4* | 822.4 | 798.5 |
| 15° | 475.1 | 473.1 | 479.1 | 491.1 | 550.9 | 658.7 | 792.5 | 868.3 | *870.3* | 890.3 | 862.4 |
| 17.5° | 485.1 | 483.1 | 481.1 | 485.1 | 501.0 | 572.9 | 734.6 | 920.2 | *924.2* | 974.1 | 936.2 |
| 20° | 521.0 | 517.0 | 513.0 | 503.0 | 509.0 | 543.0 | 668.7 | 932.2 | *946.2* | 1066.0 | 1028.0 |
| 22.5° | 574.9 | 570.9 | 562.9 | 552.9 | 543.0 | 556.9 | 640.8 | 910.3 | *938.2* | 1175.8 | 1129.8 |
| 25° | 640.8 | 638.8 | 626.8 | 608.8 | 598.9 | 606.8 | 668.7 | 896.3 | *926.2* | 1291.5 | 1253.6 |
| 27.5° | 714.6 | 710.6 | 698.7 | 680.7 | 672.7 | 672.7 | 732.6 | 922.2 | *950.2* | 1403.3 | 1403.3 |
| 30° | 800.5 | 788.5 | 774.5 | 758.6 | 752.6 | 766.5 | 824.4 | 1012.1 | *1028.0* | 1521.1 | 1565.0 |
| 32.5° | 872.3 | 872.3 | 856.4 | 844.4 | 844.4 | 870.3 | 954.2 | 1133.8 | *1151.8* | 1630.9 | 1768.6 |
| 35° | 952.2 | 944.2 | 956.2 | 936.2 | 948.2 | 1000.1 | 1101.9 | 1275.6 | *1305.5* | 1728.7 | 1962.3 |
| 37.5° | 1064.0 | 1070.0 | 1034.0 | 1024.0 | 1062.0 | 1131.8 | 1247.6 | 1437.3 | *1451.2* | 1832.5 | 2141.9 |
| 40° | 1257.6 | 1243.6 | 1229.7 | 1161.8 | 1165.8 | 1263.6 | 1399.3 | 1561.0 | *1575.0* | 1886.4 | 2277.7 |
| 42.5° | 1427.3 | 1433.3 | 1397.3 | 1345.4 | 1295.5 | 1373.4 | 1503.1 | 1646.9 | *1658.8* | 1916.3 | 2349.5 |
| 45° | 1626.9 | 1620.9 | 1577.0 | 1537.1 | 1471.2 | 1467.2 | 1563.0 | 1682.8 | *1698.8* | 1930.3 | 2381.5 |
| 47.5° | 1802.6 | 1804.6 | 1776.6 | 1730.7 | 1662.8 | 1579.0 | 1598.9 | 1712.7 | *1720.7* | 1946.3 | 2399.4 |
| 50° | 1892.4 | 1888.4 | 1910.4 | 1922.3 | 1846.5 | 1730.7 | 1620.9 | 1752.7 | *1766.6* | 2006.2 | 2433.4 |
| 52.5° | 1838.5 | 1834.5 | 1888.4 | 1976.2 | 2008.2 | 1904.4 | 1696.8 | 1826.5 | *1838.5* | 2082.0 | 2481.3 |
| 55° | 1636.9 | 1634.9 | 1744.7 | 1908.4 | 2036.1 | 2104.0 | 1844.5 | 1914.3 | *1930.3* | 2145.9 | 2499.2 |
| 57.5° | 1399.3 | 1381.4 | 1493.1 | 1702.7 | 1942.3 | 2121.9 | 2121.9 | 2060.1 | *2060.1* | 2245.7 | 2511.2 |
| 60° | 1060.0 | 1066.0 | 1191.7 | 1343.4 | 1702.7 | 1960.3 | 2379.5 | 2327.6 | *2337.5* | 2215.8 | 2399.4 |
| 62.5° | 850.4 | 858.4 | 954.2 | 1008.1 | 1227.7 | 1652.8 | 2395.4 | 2894.5 | *2808.6* | 2082.0 | 2229.7 |
| 65° | *636.8* | *658.7* | *782.5* | *860.4* | *880.3* | *1038.0* | *2243.7* | *3018.2* | *3020.2* | *1752.7* | *1796.6* |
| 67.5° | 419.2 | 425.2 | 600.9 | 724.6 | 724.6 | 598.9 | 1521.1 | 2535.2 | *2519.2* | 1283.5 | 1345.4 |
| 70° | 303.4 | 315.4 | 425.2 | 584.9 | 586.9 | 407.2 | 658.7 | 1858.5 | *1816.5* | 888.3 | 942.2 |
| 72.5° | 209.6 | 215.6 | 299.4 | 449.1 | 481.1 | 295.4 | 363.3 | 954.2 | *944.2* | 427.2 | 572.9 |
| 75° | 143.7 | 151.7 | 199.6 | 301.4 | 363.3 | 217.6 | 271.5 | 429.2 | *419.2* | 247.5 | 349.3 |
| 77.5° | 99.8 | 101.8 | 133.7 | 201.6 | 235.6 | 159.7 | 217.6 | 257.5 | *259.5* | 179.7 | 191.6 |
| 80° | 75.9 | 81.8 | 97.8 | 123.8 | 161.7 | 105.8 | 135.7 | 145.7 | *135.7* | 107.8 | 95.8 |
| 82.5° | 43.9 | 45.9 | 55.9 | 61.9 | 95.8 | 53.9 | 59.9 | 89.8 | *89.8* | 69.9 | 53.9 |
| 85° | 16.0 | 18.0 | 22.0 | 24.0 | 35.9 | 18.0 | 20.0 | 37.9 | *39.9* | 35.9 | 16.0 |
| 87.5° | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 2.0 | 2.0 | 4.0 | *4.0* | 4.0 | 4.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1704729
CATALOG NUMBER: GSS-SB2A-AMB-U-T2LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 | 648.8 |
| 2.5° | 650.8 | 652.8 | 648.8 | 644.8 | 644.8 | 638.8 | 636.8 | 634.8 | 632.8 | 632.8 | 630.8 |
| 5° | 668.7 | 666.7 | 658.7 | 642.8 | 622.8 | 580.9 | 543.0 | 503.0 | 487.1 | 477.1 | 475.1 |
| 7.5° | 698.7 | 688.7 | 672.7 | 620.8 | 537.0 | 465.1 | 427.2 | 409.2 | 403.2 | 403.2 | 405.2 |
| 10° | 736.6 | 728.6 | 684.7 | 566.9 | 461.1 | 419.2 | 417.2 | 425.2 | 433.2 | 435.2 | 435.2 |
| 12.5° | 782.5 | 766.5 | 682.7 | 515.0 | 433.2 | 433.2 | 449.1 | 461.1 | 469.1 | 475.1 | 471.1 |
| 15° | 846.4 | 822.4 | 674.7 | 481.1 | 439.2 | 459.1 | 475.1 | 493.1 | 499.0 | 505.0 | 503.0 |
| 17.5° | 910.3 | 872.3 | 660.7 | 459.1 | 455.1 | 479.1 | 497.1 | 515.0 | 521.0 | 525.0 | 525.0 |
| 20° | 990.1 | 924.2 | 636.8 | 455.1 | 469.1 | 493.1 | 513.0 | 525.0 | 533.0 | 537.0 | 535.0 |
| 22.5° | 1077.9 | 986.1 | 614.8 | 459.1 | 477.1 | 497.1 | 513.0 | 525.0 | 537.0 | 541.0 | 543.0 |
| 25° | 1185.7 | 1056.0 | 582.9 | 463.1 | 473.1 | 487.1 | 505.0 | 519.0 | 531.0 | 541.0 | 541.0 |
| 27.5° | 1297.5 | 1127.8 | 570.9 | 467.1 | 459.1 | 469.1 | 489.1 | 505.0 | 523.0 | 535.0 | 539.0 |
| 30° | 1443.2 | 1219.7 | 576.9 | 475.1 | 445.1 | 447.1 | 463.1 | 485.1 | 505.0 | 519.0 | 523.0 |
| 32.5° | 1618.9 | 1321.5 | 596.9 | 485.1 | 431.2 | 425.2 | 439.2 | 457.1 | 475.1 | 485.1 | 491.1 |
| 35° | 1786.6 | 1437.3 | 644.8 | 511.0 | 431.2 | 413.2 | 417.2 | 425.2 | 433.2 | 437.2 | 445.1 |
| 37.5° | 1932.3 | 1519.1 | 682.7 | 541.0 | 447.1 | 407.2 | 397.2 | 397.2 | 395.2 | 393.2 | 399.2 |
| 40° | 2030.1 | 1577.0 | 702.7 | 578.9 | 471.1 | 405.2 | 377.3 | 369.3 | 357.3 | 347.3 | 351.3 |
| 42.5° | 2072.0 | 1593.0 | 708.6 | 606.8 | 481.1 | 397.2 | 359.3 | 339.4 | 321.4 | 313.4 | 315.4 |
| 45° | 2090.0 | 1559.0 | 694.7 | 610.8 | 477.1 | 383.3 | 341.3 | 319.4 | 297.4 | 283.5 | 279.5 |
| 47.5° | 2082.0 | 1527.1 | 668.7 | 584.9 | 453.1 | 367.3 | 323.4 | 293.4 | 277.5 | 269.5 | 267.5 |
| 50° | 2108.0 | 1501.1 | 652.8 | 537.0 | 409.2 | 341.3 | 301.4 | 271.5 | 267.5 | 253.5 | 249.5 |
| 52.5° | 2145.9 | 1533.1 | 628.8 | 485.1 | 367.3 | 315.4 | 281.5 | 257.5 | 245.5 | 241.5 | 241.5 |
| 55° | 2203.8 | 1591.0 | 602.8 | 445.1 | 327.4 | 285.5 | 265.5 | 247.5 | 237.5 | 233.6 | 229.6 |
| 57.5° | 2289.6 | 1658.8 | 562.9 | 395.2 | 289.4 | 265.5 | 253.5 | 231.6 | 217.6 | 213.6 | 209.6 |
| 60° | 2281.6 | 1690.8 | 501.0 | 347.3 | 261.5 | 245.5 | 237.5 | 215.6 | 201.6 | 193.6 | 189.6 |
| 62.5° | 2183.8 | 1632.9 | 421.2 | 297.4 | 239.5 | 227.6 | 219.6 | 199.6 | 177.7 | 167.7 | 165.7 |
| 65° | *1784.6* | *1389.3* | *347.3* | *261.5* | *217.6* | *207.6* | *205.6* | *177.7* | *161.7* | *155.7* | *153.7* |
| 67.5° | 1429.3 | 1181.7 | 297.4 | 239.5 | 193.6 | 189.6 | 183.6 | 167.7 | 165.7 | 159.7 | 159.7 |
| 70° | 1038.0 | 798.5 | 255.5 | 209.6 | 173.7 | 165.7 | 185.6 | 181.7 | 169.7 | 159.7 | 157.7 |
| 72.5° | 640.8 | 419.2 | 225.6 | 183.6 | 147.7 | 153.7 | 187.6 | 173.7 | 151.7 | 141.7 | 135.7 |
| 75° | 391.3 | 265.5 | 193.6 | 157.7 | 119.8 | 129.8 | 167.7 | 149.7 | 125.8 | 117.8 | 113.8 |
| 77.5° | 193.6 | 183.6 | 149.7 | 127.8 | 91.8 | 105.8 | 145.7 | 123.8 | 101.8 | 135.7 | 115.8 |
| 80° | 97.8 | 103.8 | 97.8 | 73.9 | 63.9 | 77.9 | 107.8 | 95.8 | 75.9 | 97.8 | 67.9 |
| 82.5° | 45.9 | 59.9 | 65.9 | 51.9 | 35.9 | 43.9 | 69.9 | 55.9 | 49.9 | 47.9 | 45.9 |
| 85° | 14.0 | 22.0 | 27.9 | 24.0 | 14.0 | 16.0 | 31.9 | 27.9 | 33.9 | 27.9 | 27.9 |
| 87.5° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 4.0 | 2.0 | 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

# 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

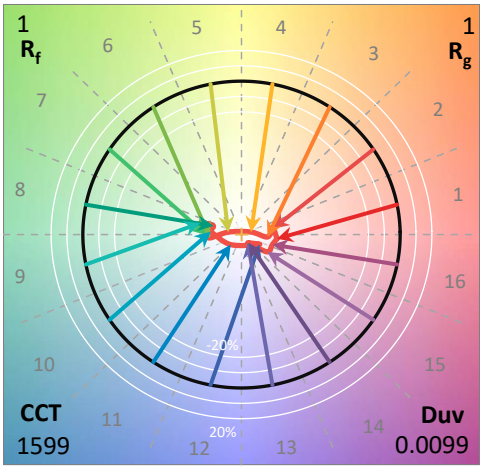
## Test Information

| | |
|---|---|
| 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

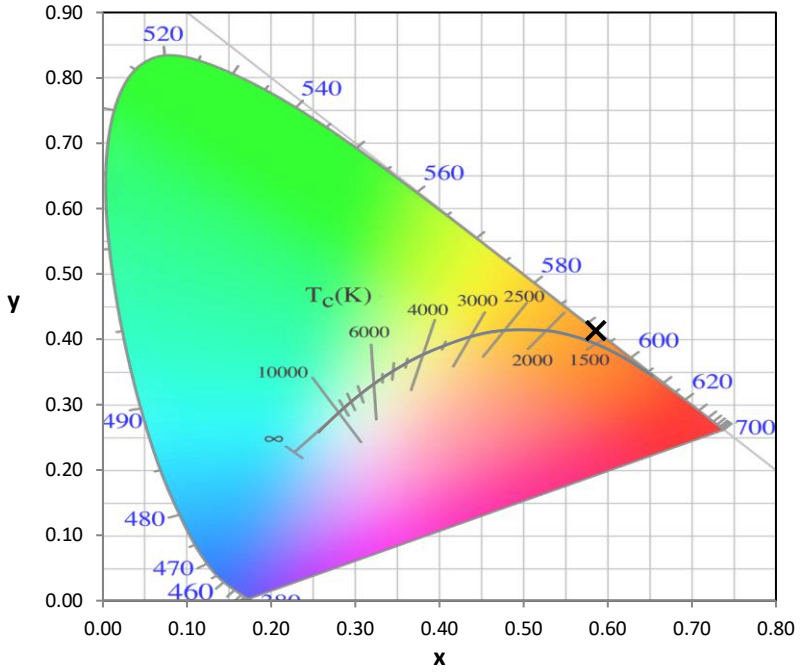
| | |
|---|---|
| Stabilization Time: | 64M |
| Operation Time: | 2H 4M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP3-2509-541-1

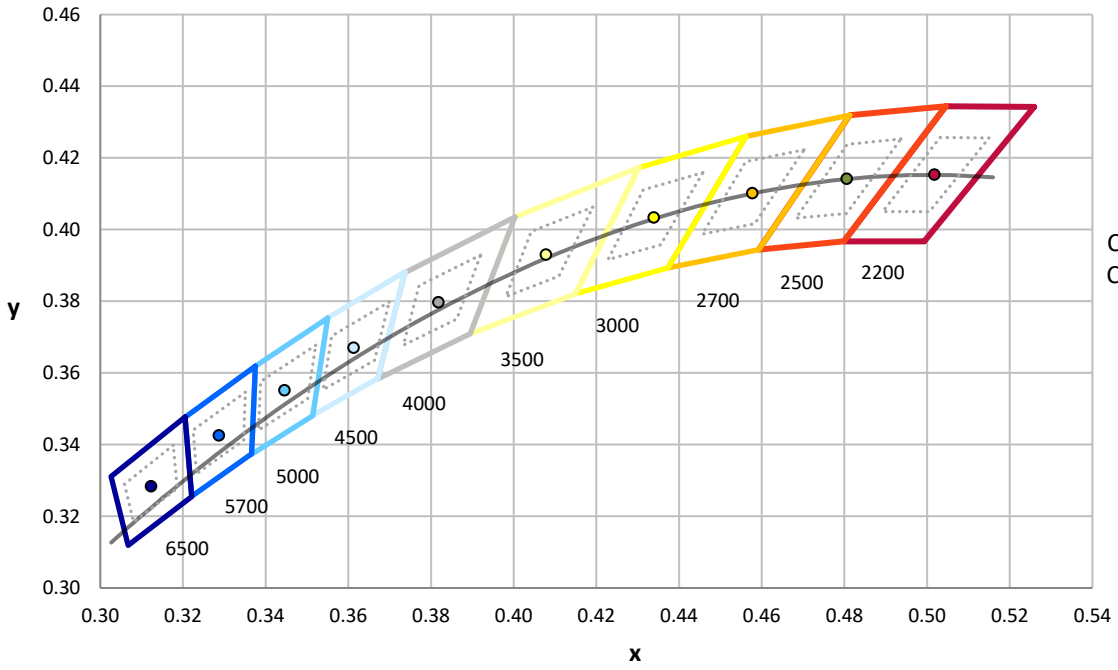
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 7/1/2025 | 1/1/2026 |
| Power Meter | XITRON INXT2011006 | 1/20/2025 | 1/20/2026 |
| AC Power Source | CHROMA 61604 IN6064A | 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

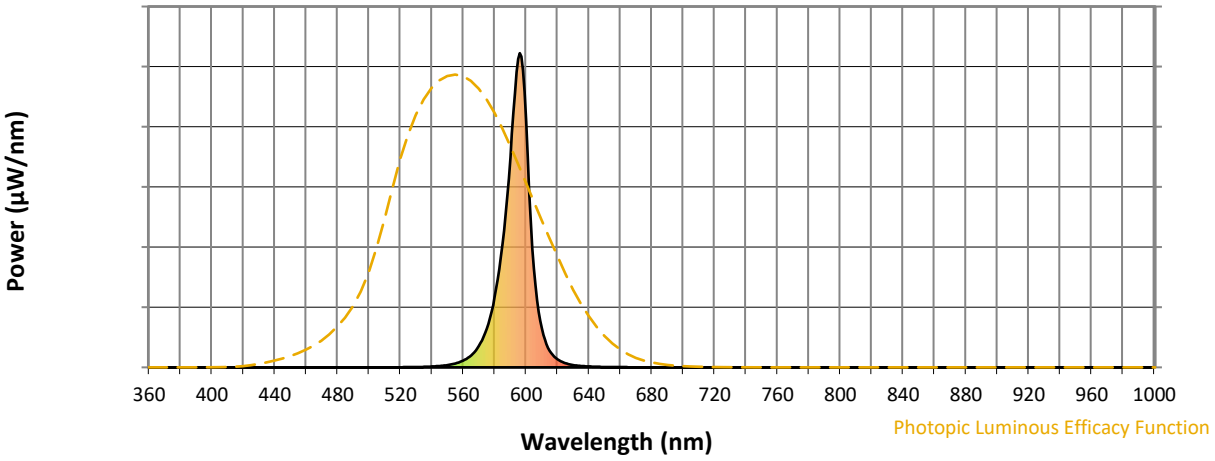



CCT = 1599K
CIE x = 0.5859
CIE y = 0.4133
Duv = 0.0099

Point lies outside the range

REPORT NUMBER: SP3-2509-541-1

## Photopic Flux vs. Wavelength

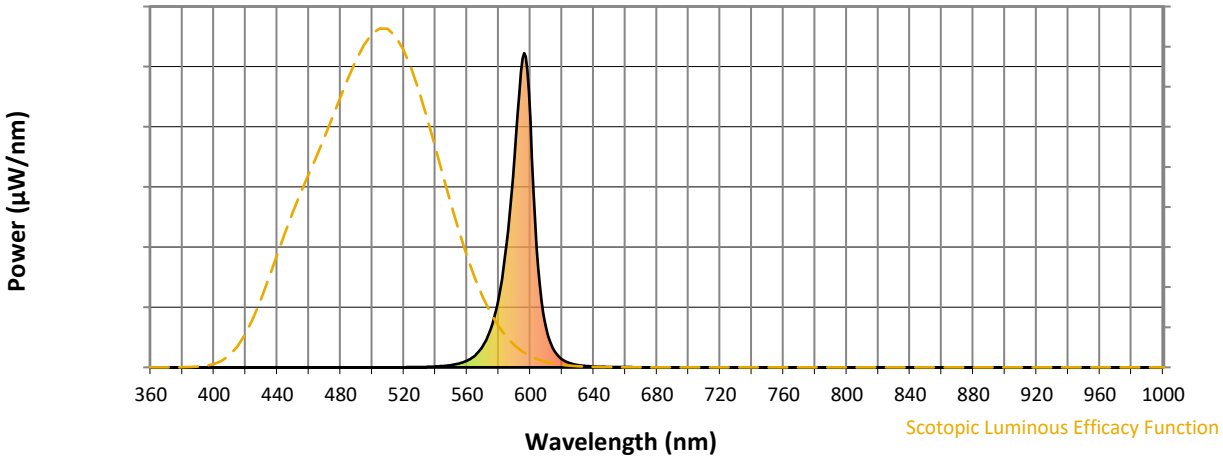



## Photopic Lumens: NR

| 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

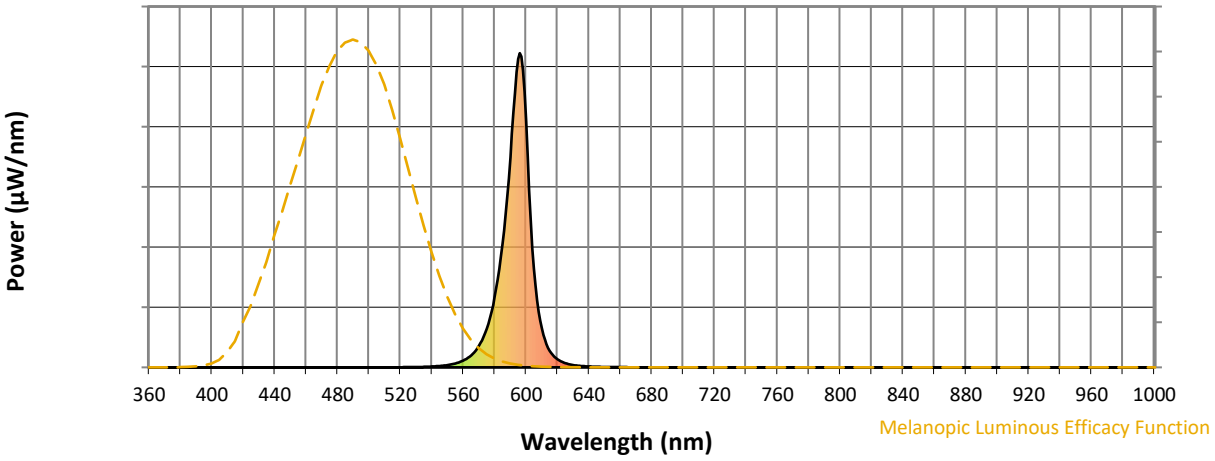



**Scotopic Lumens: NR** **S/P: 0.23**

| 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 | | | |

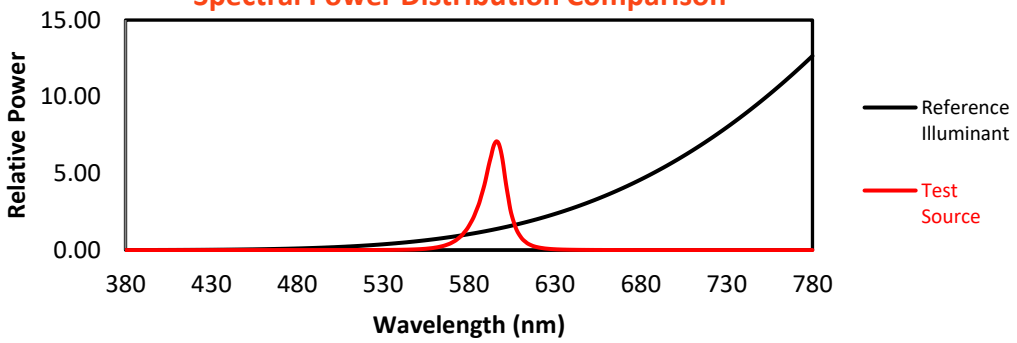
REPORT NUMBER: SP3-2509-541-1

# TM-30-18

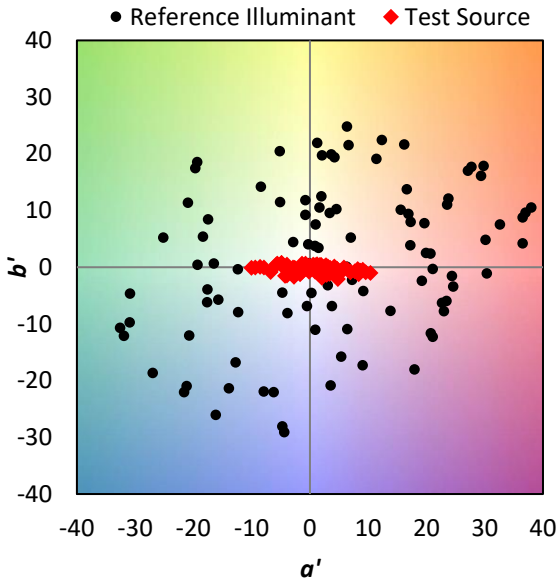
## Summary

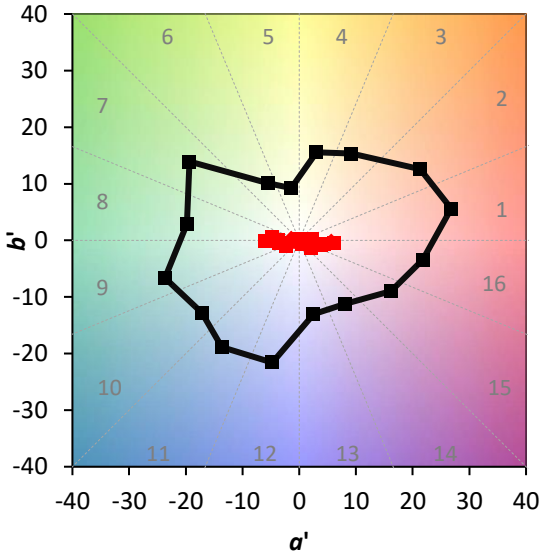
$R_f$ = 1.2
$R_g$ = 0.9
CIE $R_a$ = -22.7
$R_9$ = -395.3

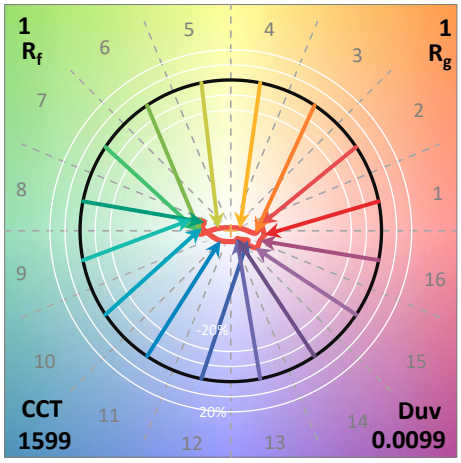
## Spectral Power Distribution Comparison

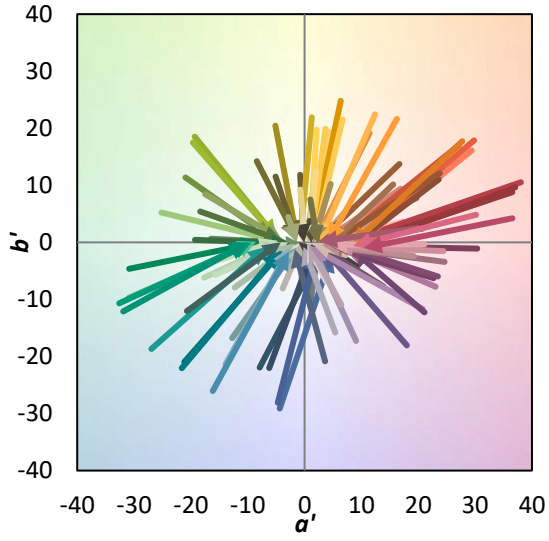



## Color Vector Graphics



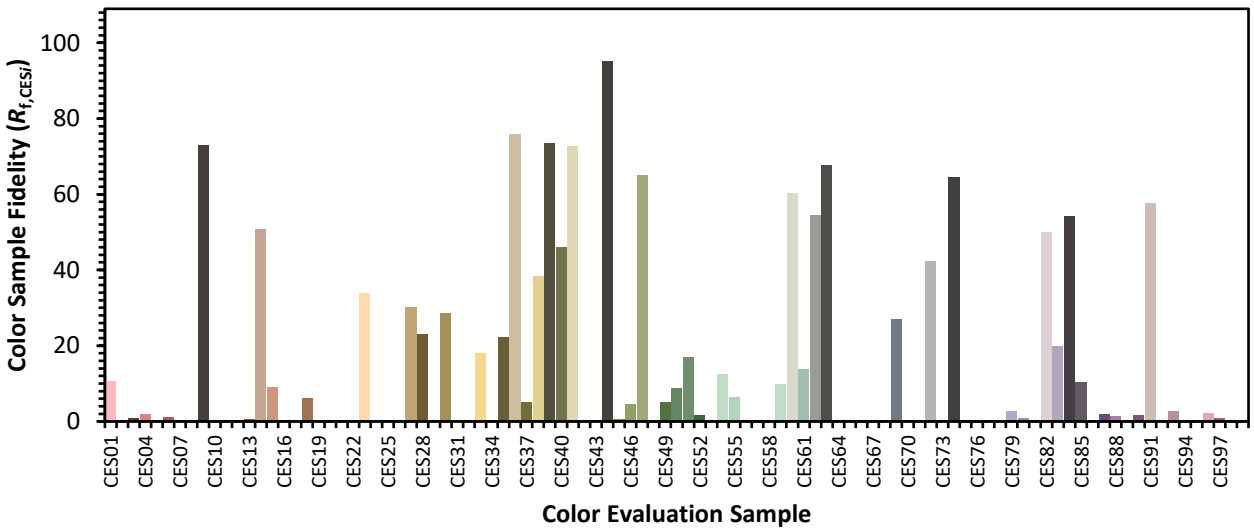



REPORT NUMBER: SP3-2509-541-1

# TM-30-18

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

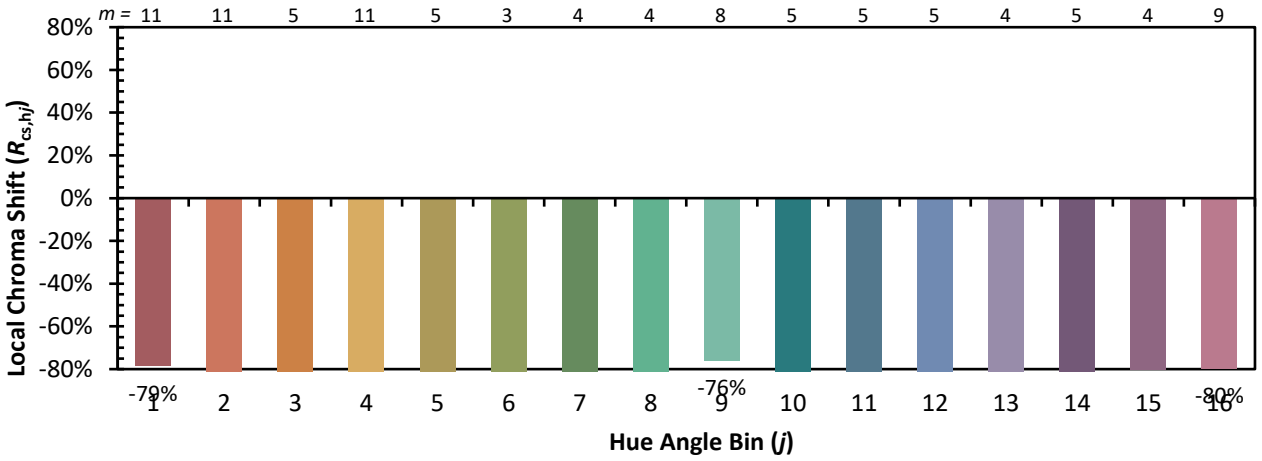
| | | | |
|---|---|---|---|
| CES01 = 90 | CES26 = 0 | CES51 = 17 | CES76 = 0 |
| CES02 = 69 | CES27 = 30 | CES52 = 2 | CES77 = 0 |
| CES03 = 30 | CES28 = 23 | CES53 = 0 | CES78 = 0 |
| CES04 = 77 | CES29 = 0 | CES54 = 12 | CES79 = 3 |
| CES05 = 51 | CES30 = 29 | CES55 = 6 | CES80 = 1 |
| CES06 = 56 | 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 | |

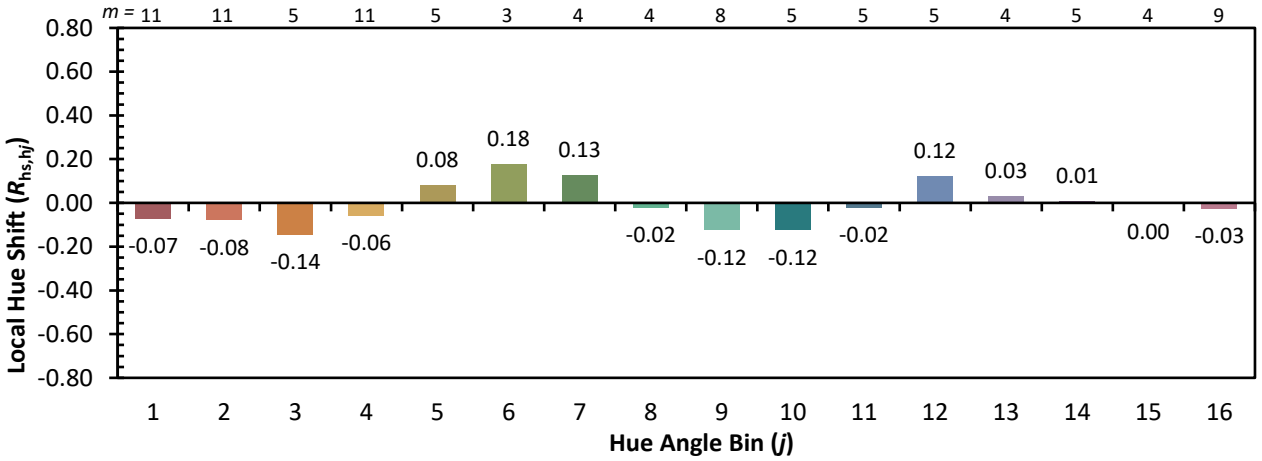


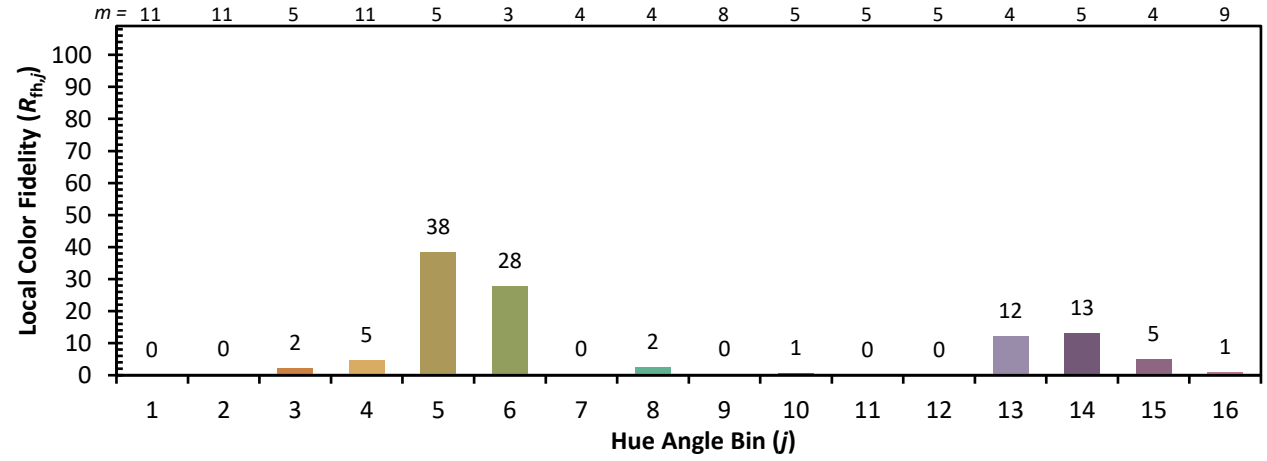
REPORT NUMBER: SP3-2509-541-1

# TM-30-18

## Color Rendition by Hue-Angle Bin



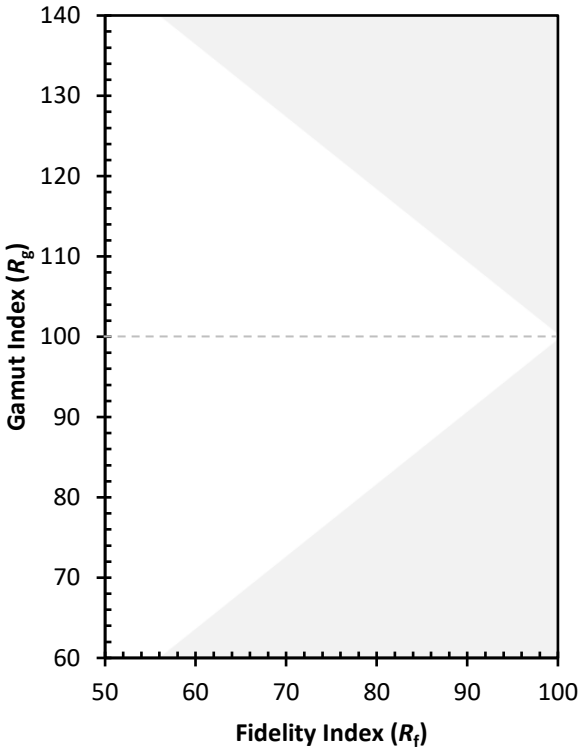



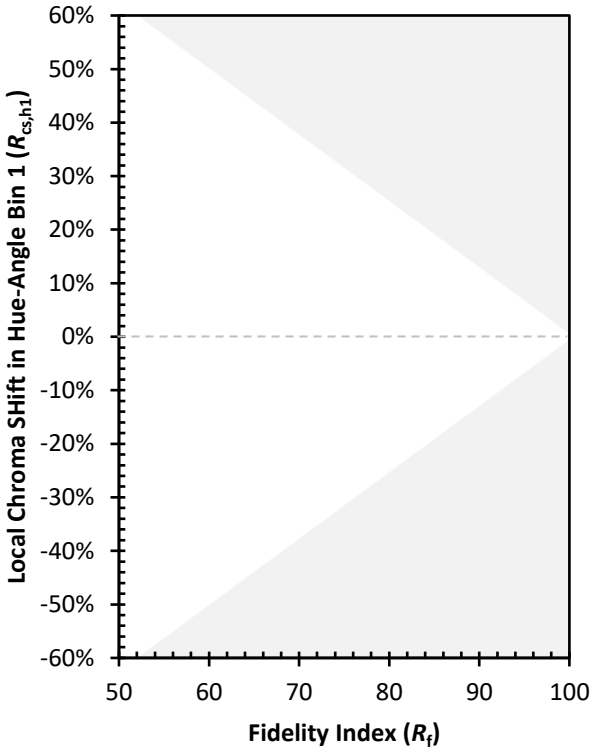



REPORT NUMBER: SP3-2509-541-1

# TM-30-18

## Measure Comparisons




(END OF REPORT)