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

Cooper Lighting Solutions Photometric Lab
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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: P1501301

Luminaire Tested: GSS-SB1A-940-U-T3LG

Issue Date: 07/20/2026

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: | P1501301 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 7/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB1A-940-U-T3LG |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 1SQUARE 31W 90CRI 4000K FIXTURE w/ TYPE III LOW GLARE DISTRIBUTION FIXTURE |
| Light Source: | (26) 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3014.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 97.2 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type III - Short |
| BUG Rating: | B1 - U0 - G1 |

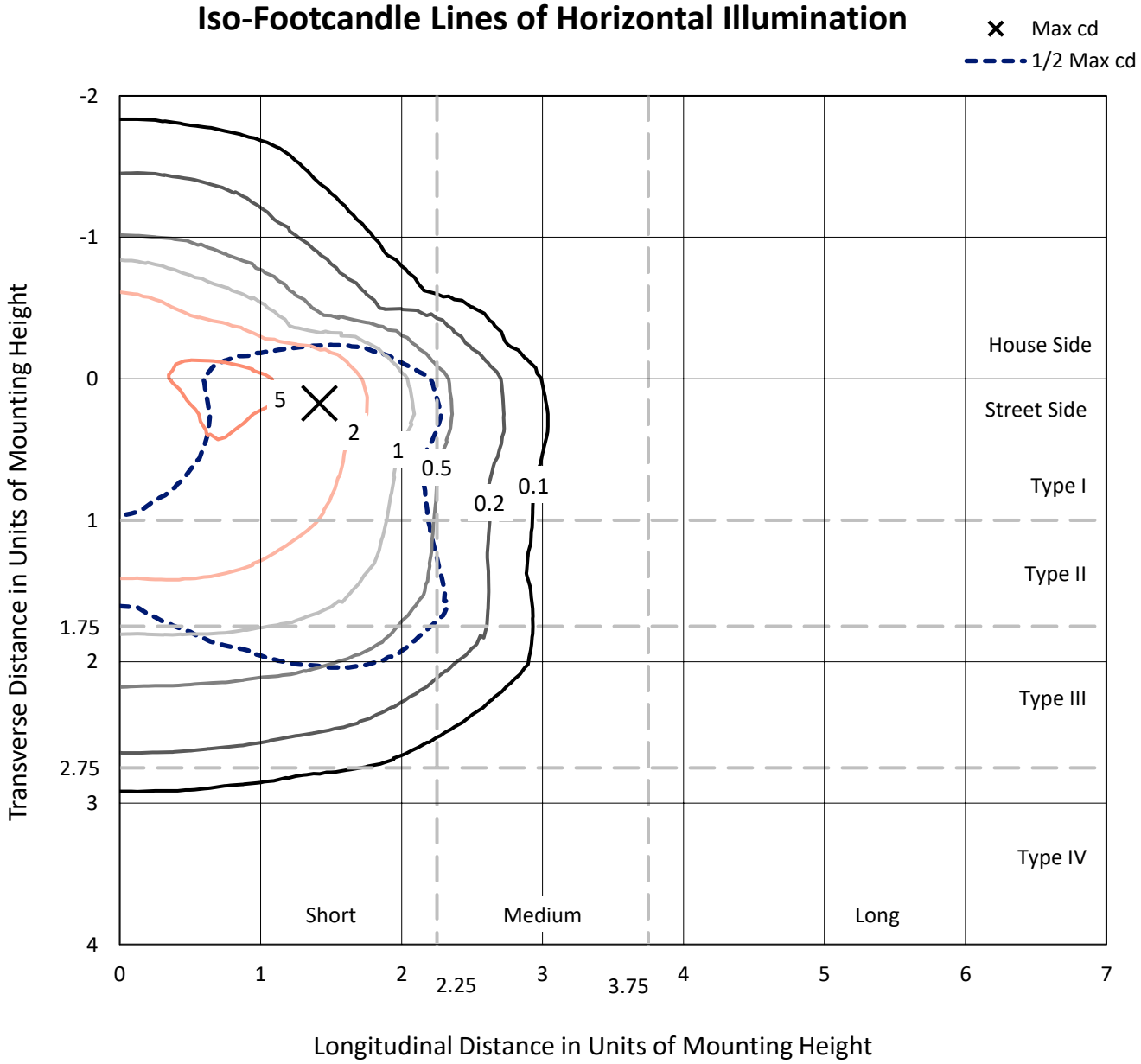
| | |
|---|---|
| Input Watts (W): | 31 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 6.4% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1501301
CATALOG NUMBER: GSS-SB1A-940-U-T3LG

## Iso-Footcandle Lines of Horizontal Illumination



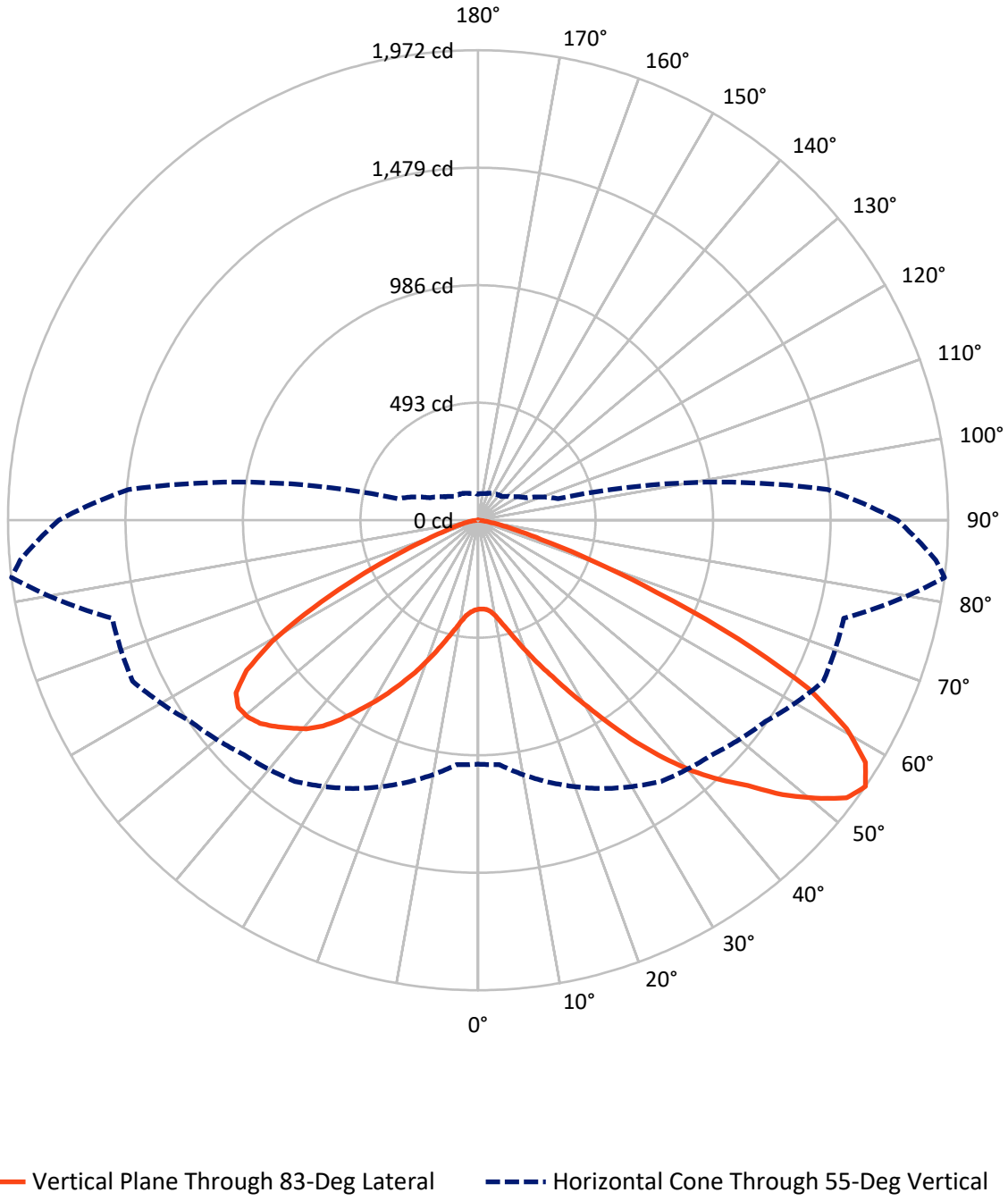

Based on 10 foot mounting height. Maximum calculated value = 6.3 fc
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

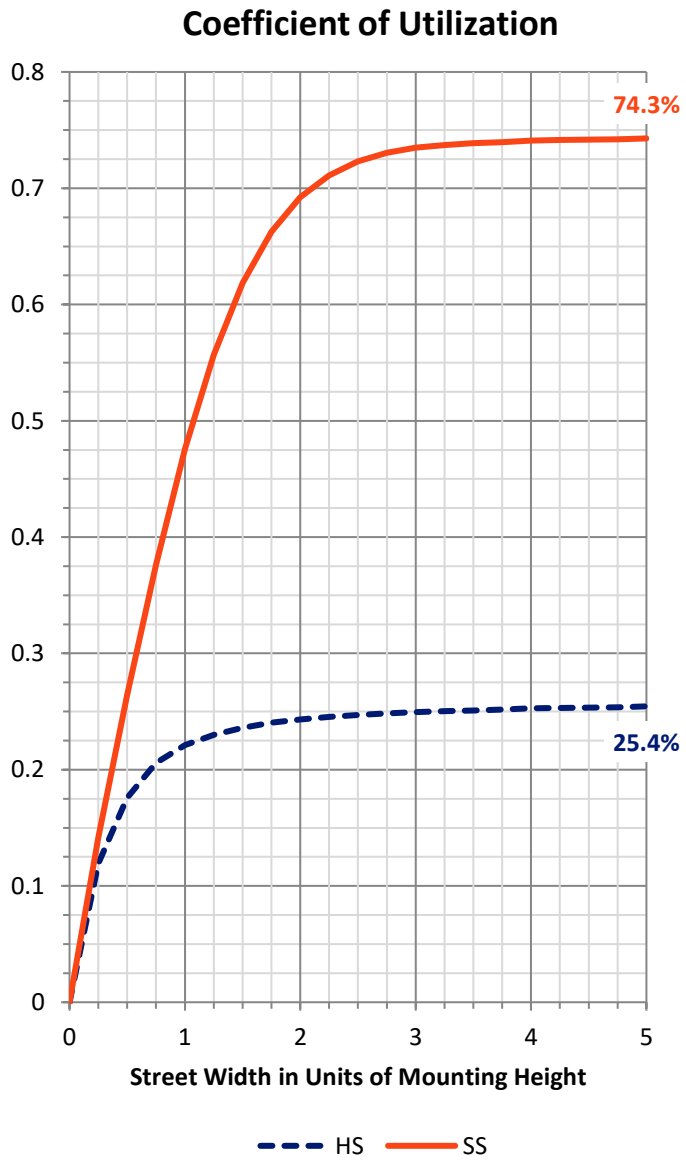
REPORT NUMBER: P1501301
CATALOG NUMBER: GSS-SB1A-940-U-T3LG

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 773.6 | 0.0 | 773.6 |
| | % Fixture | 25.7 | 0.0 | 25.7 |
| **Street Side** | Lumens | 2240.9 | 0.0 | 2240.9 |
| | % Fixture | 74.3 | 0.0 | 74.3 |
| **Total** | Lumens | 3014.5 | 0.0 | 3014.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 36.1 | 1.2 |
| 10°-20° | 117.5 | 3.9 |
| 20°-30° | 235.2 | 7.8 |
| 30°-40° | 418.4 | 13.9 |
| 40°-50° | 630.5 | 20.9 |
| 50°-60° | 768.3 | 25.5 |
| 60°-70° | 621.3 | 20.6 |
| 70°-80° | 170.2 | 5.6 |
| 80°-90° | 17.3 | 0.6 |
| 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° | 3014.5 | 100.0 |
| 0°-180° | 3014.5 | 100.0 |



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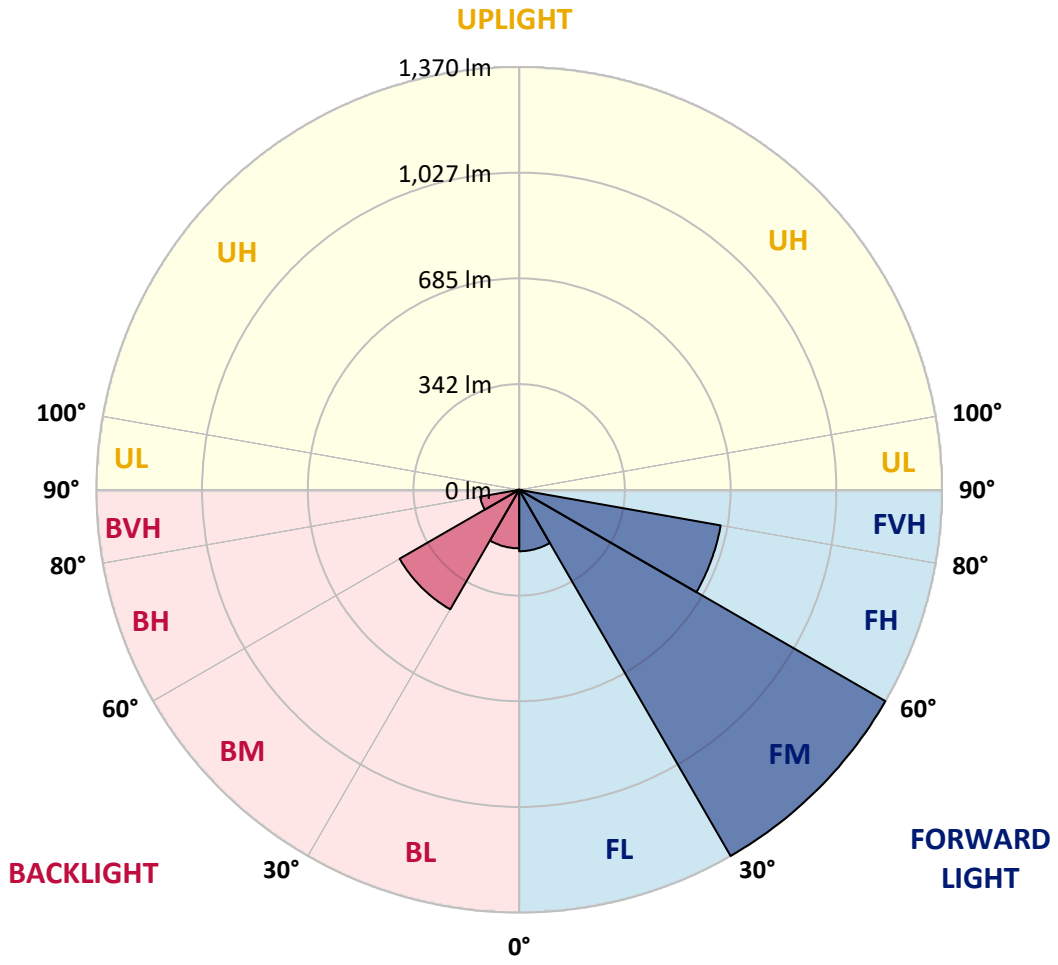
Scaled Data Report

REPORT NUMBER: P1501301
CATALOG NUMBER: GSS-SB1A-940-U-T3LG

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 199.0 | 6.6 | | | |
| FM | (30°-60°) | 1369.9 | 45.4 | | | |
| FH | (60°-80°) | 663.0 | 22.0 | | | G1/1800 |
| FVH | (80°-90°) | 9.0 | 0.3 | | | G0/10 |
| BL | (0°-30°) | 189.6 | 6.3 | B1/500 | | |
| BM | (30°-60°) | 447.2 | 14.8 | B1/1000 | | |
| BH | (60°-80°) | 128.4 | 4.3 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 8.3 | 0.3 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 83° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | *373.2* | 373.2 |
| 2.5° | 362.4 | 361.8 | 361.1 | 360.4 | 361.8 | 363.8 | 365.8 | 367.1 | 370.5 | *373.2* | 371.8 |
| 5° | 333.6 | 332.3 | 333.6 | 339.0 | 343.7 | 351.7 | 359.8 | 365.1 | 372.5 | *375.8* | 377.2 |
| 7.5° | 308.2 | 306.8 | 308.2 | 314.9 | 322.9 | 335.6 | 352.4 | 365.8 | 379.2 | *387.2* | 388.6 |
| 10° | 308.2 | 308.9 | 308.9 | 311.5 | 315.6 | 328.3 | 348.4 | 373.8 | 397.3 | *408.7* | 411.4 |
| 12.5° | 318.2 | 318.2 | 318.2 | 321.6 | 324.3 | 334.3 | 357.1 | 388.6 | 426.1 | *442.8* | 444.9 |
| 15° | 331.6 | 331.0 | 333.0 | 335.0 | 339.7 | 349.7 | 372.5 | 410.0 | 457.6 | *483.0* | 485.7 |
| 17.5° | 350.4 | 349.0 | 351.1 | 355.7 | 362.4 | 373.8 | 396.6 | 439.5 | 501.1 | *533.3* | 537.3 |
| 20° | 371.2 | 370.5 | 374.5 | 381.9 | 391.3 | 405.3 | 431.5 | 475.0 | 550.7 | *591.6* | 598.9 |
| 22.5° | 395.9 | 394.6 | 402.0 | 415.4 | 428.1 | 444.2 | 475.7 | 521.2 | 607.7 | *656.6* | 663.9 |
| 25° | 424.1 | 424.1 | 434.1 | 450.2 | 469.6 | 498.4 | 529.9 | 580.2 | 674.6 | *726.9* | 738.3 |
| 27.5° | 470.3 | 473.7 | 477.7 | 494.4 | 521.9 | 560.8 | 594.3 | 651.2 | 747.7 | *813.3* | 817.3 |
| 30° | 545.3 | 544.0 | 550.7 | 562.1 | 584.9 | 625.7 | 676.0 | 737.0 | 840.1 | *909.1* | 919.2 |
| 32.5° | 613.0 | 615.0 | 624.4 | 645.8 | 673.3 | 708.1 | 768.4 | 843.5 | 940.6 | *1020.3* | 1025.0 |
| 35° | 681.3 | 682.7 | 700.8 | 732.9 | 773.8 | 812.7 | 878.3 | 952.0 | 1049.8 | *1144.3* | 1157.0 |
| 37.5° | 777.2 | 775.8 | 793.9 | 821.4 | 876.3 | 936.6 | 989.5 | 1059.9 | 1154.3 | *1264.9* | 1279.6 |
| 40° | 848.8 | 856.2 | 890.4 | 925.2 | 976.8 | 1039.1 | 1084.0 | 1150.3 | 1240.1 | *1382.8* | 1396.2 |
| 42.5° | 922.5 | 928.6 | 974.1 | 1026.4 | 1080.6 | 1122.9 | 1157.7 | 1219.3 | 1308.4 | *1487.3* | 1494.7 |
| 45° | 983.5 | 991.5 | 1043.8 | 1110.1 | 1166.4 | 1209.3 | 1221.3 | 1279.0 | 1378.1 | *1587.8* | 1599.2 |
| 47.5° | 1022.4 | 1031.1 | 1092.7 | 1170.4 | 1228.0 | 1273.6 | 1269.6 | 1350.6 | 1452.5 | *1721.1* | 1717.1 |
| 50° | 1049.2 | 1054.5 | 1121.5 | 1204.6 | 1279.6 | 1309.8 | 1327.2 | 1431.7 | 1528.8 | *1833.0* | 1818.3 |
| 52.5° | 1068.6 | 1077.3 | 1138.3 | 1229.4 | 1308.4 | 1348.0 | 1394.9 | 1525.5 | 1581.8 | *1935.5* | 1902.7 |
| 55° | *1023.0* | *1029.7* | *1136.9* | *1242.1* | *1337.9* | *1390.2* | *1471.9* | *1598.5* | *1588.5* | *1971.7* | *1927.5* |
| 57.5° | 976.1 | 981.5 | 1080.6 | 1238.8 | 1370.1 | 1442.4 | 1559.7 | 1607.9 | 1528.8 | *1916.1* | 1860.5 |
| 60° | 917.2 | 921.2 | 1020.3 | 1203.2 | 1370.7 | 1483.3 | 1604.6 | 1539.6 | 1418.3 | *1776.1* | 1723.1 |
| 62.5° | 808.6 | 808.6 | 917.8 | 1107.4 | 1337.2 | 1504.1 | 1592.5 | 1410.3 | 1270.2 | *1555.6* | 1482.6 |
| 65° | 701.4 | 696.8 | 770.5 | 936.6 | 1248.1 | 1498.7 | 1502.0 | 1246.8 | 1040.4 | *1199.9* | 1142.9 |
| 67.5° | 584.9 | 585.5 | 629.1 | 760.4 | 1011.0 | 1386.8 | 1311.1 | 963.4 | 724.9 | *808.0* | 778.5 |
| 70° | 395.9 | 406.0 | 450.2 | 552.0 | 762.4 | 982.8 | 1043.8 | 652.5 | 452.2 | *501.8* | 477.7 |
| 72.5° | 150.7 | 152.8 | 204.3 | 289.4 | 481.7 | 590.9 | 728.2 | 365.1 | 264.6 | *276.7* | 278.0 |
| 75° | 63.6 | 66.3 | 87.1 | 121.9 | 213.7 | 322.3 | 383.2 | 184.9 | 160.8 | *165.5* | 164.1 |
| 77.5° | 42.9 | 44.2 | 52.9 | 65.7 | 96.5 | 129.3 | 160.1 | 104.5 | 98.5 | *92.5* | 89.8 |
| 80° | 32.2 | 32.2 | 38.2 | 44.2 | 54.3 | 66.3 | 69.7 | 52.9 | 59.0 | *48.9* | 47.6 |
| 82.5° | 20.8 | 22.1 | 24.1 | 26.1 | 30.8 | 32.8 | 28.1 | 28.8 | 34.2 | *25.5* | 24.1 |
| 85° | 10.0 | 10.7 | 11.4 | 12.1 | 12.1 | 11.4 | 10.0 | 12.7 | 17.4 | *10.7* | 10.0 |
| 87.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 0.7 | 0.7 | 0.7 | *0.7* | 0.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1501301
CATALOG NUMBER: GSS-SB1A-940-U-T3LG

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 | 373.2 |
| 2.5° | 373.8 | 376.5 | 378.5 | 379.9 | 383.2 | 382.5 | 384.6 | 385.9 | 387.2 | 389.2 | 386.6 |
| 5° | 380.5 | 385.2 | 390.6 | 394.6 | 398.6 | 400.6 | 401.3 | 402.6 | 403.3 | 404.7 | 404.0 |
| 7.5° | 395.3 | 400.6 | 408.7 | 412.7 | 416.0 | 416.0 | 414.0 | 413.4 | 411.4 | 412.7 | 412.7 |
| 10° | 420.1 | 428.1 | 436.8 | 437.5 | 433.5 | 428.8 | 421.4 | 417.4 | 412.0 | 410.7 | 409.3 |
| 12.5° | 456.2 | 467.0 | 473.7 | 469.0 | 454.9 | 437.5 | 418.1 | 400.0 | 385.9 | 379.9 | 378.5 |
| 15° | 497.1 | 510.5 | 511.8 | 498.4 | 473.0 | 430.8 | 389.9 | 369.8 | 362.4 | 362.4 | 361.8 |
| 17.5° | 553.4 | 562.8 | 557.4 | 525.2 | 468.3 | 399.3 | 369.8 | 366.5 | 368.5 | 371.2 | 371.2 |
| 20° | 612.3 | 623.1 | 601.0 | 544.0 | 439.5 | 380.5 | 371.8 | 374.5 | 379.2 | 381.9 | 381.2 |
| 22.5° | 682.7 | 688.0 | 645.2 | 544.7 | 408.7 | 375.8 | 375.8 | 379.2 | 382.5 | 386.6 | 386.6 |
| 25° | 755.0 | 753.0 | 686.0 | 519.9 | 391.3 | 374.5 | 373.2 | 375.8 | 377.2 | 379.2 | 378.5 |
| 27.5° | 836.1 | 825.4 | 717.5 | 480.4 | 385.9 | 370.5 | 363.8 | 361.1 | 362.4 | 364.5 | 365.1 |
| 30° | 929.2 | 903.8 | 743.0 | 455.6 | 383.9 | 361.1 | 345.0 | 337.7 | 336.3 | 339.0 | 339.0 |
| 32.5° | 1037.1 | 982.2 | 758.4 | 452.2 | 381.9 | 344.4 | 322.9 | 308.9 | 306.2 | 307.5 | 310.9 |
| 35° | 1147.6 | 1076.6 | 754.4 | 460.9 | 382.5 | 331.0 | 299.5 | 280.7 | 278.0 | 279.4 | 282.7 |
| 37.5° | 1263.5 | 1166.4 | 739.0 | 474.3 | 377.2 | 312.9 | 278.0 | 255.3 | 251.2 | 253.9 | 255.3 |
| 40° | 1353.3 | 1242.1 | 700.8 | 479.7 | 367.8 | 290.1 | 253.2 | 233.8 | 223.1 | 222.4 | 225.8 |
| 42.5° | 1436.4 | 1301.7 | 659.2 | 471.0 | 348.4 | 266.0 | 227.8 | 208.4 | 191.6 | 178.9 | 178.9 |
| 45° | 1519.5 | 1362.0 | 617.0 | 446.2 | 316.2 | 240.5 | 201.0 | 174.9 | 155.4 | 146.1 | 146.7 |
| 47.5° | 1602.5 | 1420.3 | 566.8 | 408.7 | 284.1 | 213.7 | 172.2 | 151.4 | 138.0 | 130.6 | 130.6 |
| 50° | 1679.6 | 1462.5 | 502.5 | 349.0 | 247.2 | 186.9 | 152.1 | 140.0 | 130.0 | 123.3 | 121.9 |
| 52.5° | 1747.3 | 1490.7 | 415.4 | 276.7 | 207.0 | 156.8 | 141.4 | 132.0 | 124.6 | 117.2 | 115.2 |
| 55° | *1759.3* | *1471.9* | *347.7* | *222.4* | *170.8* | *140.7* | *133.3* | *125.3* | *115.2* | *111.9* | *109.9* |
| 57.5° | 1684.9 | 1372.7 | 293.4 | 187.6 | 146.1 | 129.3 | 126.6 | 117.2 | 109.2 | 105.9 | 103.8 |
| 60° | 1558.3 | 1192.5 | 242.5 | 160.8 | 130.0 | 118.6 | 121.9 | 112.6 | 99.8 | 97.8 | 95.8 |
| 62.5° | 1330.5 | 930.6 | 193.6 | 135.3 | 117.9 | 110.5 | 113.9 | 100.5 | 89.8 | 87.1 | 86.4 |
| 65° | 1034.4 | 665.9 | 162.8 | 119.3 | 108.5 | 102.5 | 101.2 | 89.1 | 81.1 | 79.1 | 79.1 |
| 67.5° | 722.2 | 423.4 | 136.0 | 109.2 | 96.5 | 92.5 | 91.8 | 83.7 | 78.4 | 76.4 | 76.4 |
| 70° | 442.2 | 256.6 | 114.6 | 99.8 | 85.1 | 77.7 | 82.4 | 81.1 | 73.0 | 71.0 | 70.3 |
| 72.5° | 229.8 | 153.4 | 100.5 | 91.8 | 71.7 | 66.3 | 73.7 | 74.4 | 67.7 | 70.3 | 69.7 |
| 75° | 133.3 | 106.5 | 87.8 | 81.1 | 56.9 | 55.6 | 64.3 | 71.0 | 65.7 | 67.7 | 66.3 |
| 77.5° | 76.4 | 68.3 | 67.7 | 66.3 | 44.9 | 45.6 | 57.6 | 63.6 | 56.3 | 58.3 | 53.6 |
| 80° | 42.2 | 44.2 | 46.9 | 41.5 | 31.5 | 35.5 | 46.2 | 50.9 | 42.9 | 42.2 | 38.9 |
| 82.5° | 22.1 | 27.5 | 31.5 | 26.8 | 18.1 | 21.4 | 31.5 | 31.5 | 27.5 | 26.1 | 25.5 |
| 85° | 10.0 | 11.4 | 14.7 | 13.4 | 6.7 | 8.0 | 14.7 | 16.1 | 14.1 | 12.7 | 12.1 |
| 87.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.3 | 2.0 | 0.7 | 0.7 | 0.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

McGRAW-EDISON

Report Number: SP1-2106-271-4

Luminaire Tested: GFLD-SA1-A-940-U-WR-X-BK

Test Date: 06/15/2021

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.09

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## Test Information

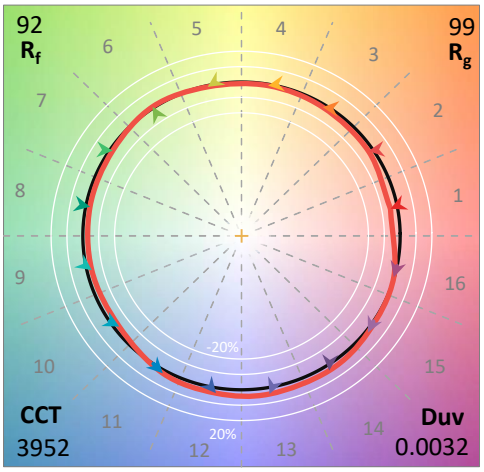
| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | SP1-2106-271-4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 |
| Measurement Geometry: | 4π |
| Issue Date: | 06/15/2021 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | **GFLD-SA1-A-940-U-WR-X-BK** |
| Description: | MCGRAW EDISON |

N6, BLACK

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3952 | CRI (Ra): | 92.2 | | |
| CIE u': | 0.2242 | R1: | 92.0 | R9: | 63.3 |
| CIE v': | 0.5064 | R2: | 93.7 | R10: | 84.3 |
| Duv: | 0.0032 | R3: | 94.4 | R11: | 92.7 |
| CIE x: | 0.3848 | R4: | 93.1 | R12: | 75.6 |
| CIE y: | 0.3864 | R5: | 91.2 | R13: | 92.2 |
| CIE z: | 0.2287 | R6: | 91.1 | R14: | 96.5 |
| Peak Wavelength (nm): | 614 | R7: | 95.4 | | |
| Dominant Wavelength (nm): | 577 | R8: | 86.5 | | |
| Purity: | 31.6 | | | | |

| | |
|---|---|
| Rf: | 92.2 |
| Rg: | 98.9 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 72M |
| Operation Time: | 12H |
| Room Temperature (°C) / RH%: | 24.8/42% |
| Sphere Temperature (°C): | 24.9 |

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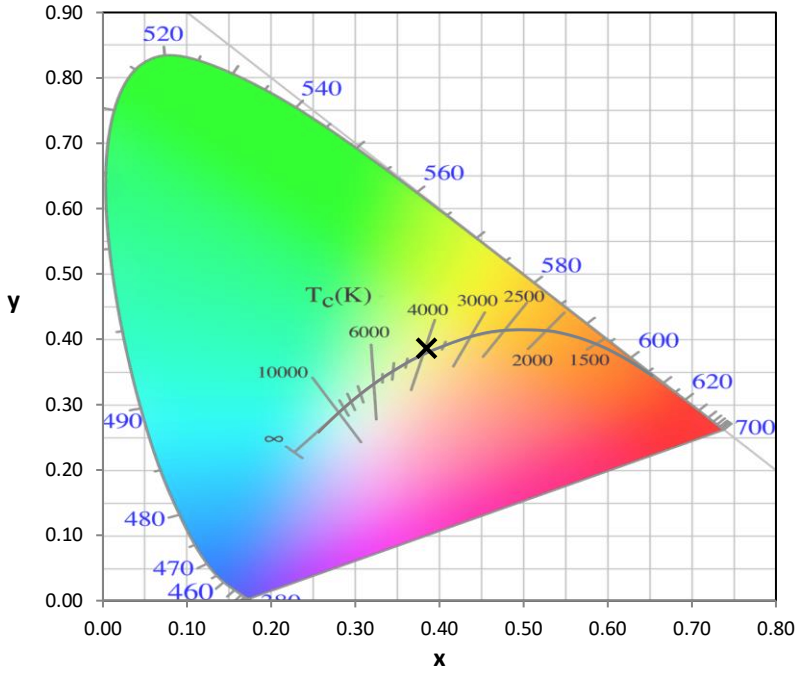
REPORT NUMBER: SP1-2106-271-4

| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | XITRON 2801 IN0071 | 12/1/2020 | 12/1/2021 |
| AC Power Source | CHROMA 61603 IN0063 | 12/1/2020 | 12/1/2021 |
| DC Power Source | AGILENT E3634A IN0208 | 12/1/2020 | 12/1/2021 |
| Sphere Thermometer | ONSET IN0085 | 12/1/2020 | 12/1/2021 |
| Room Thermometer | ONSET IN0046 | 12/1/2020 | 12/1/2021 |

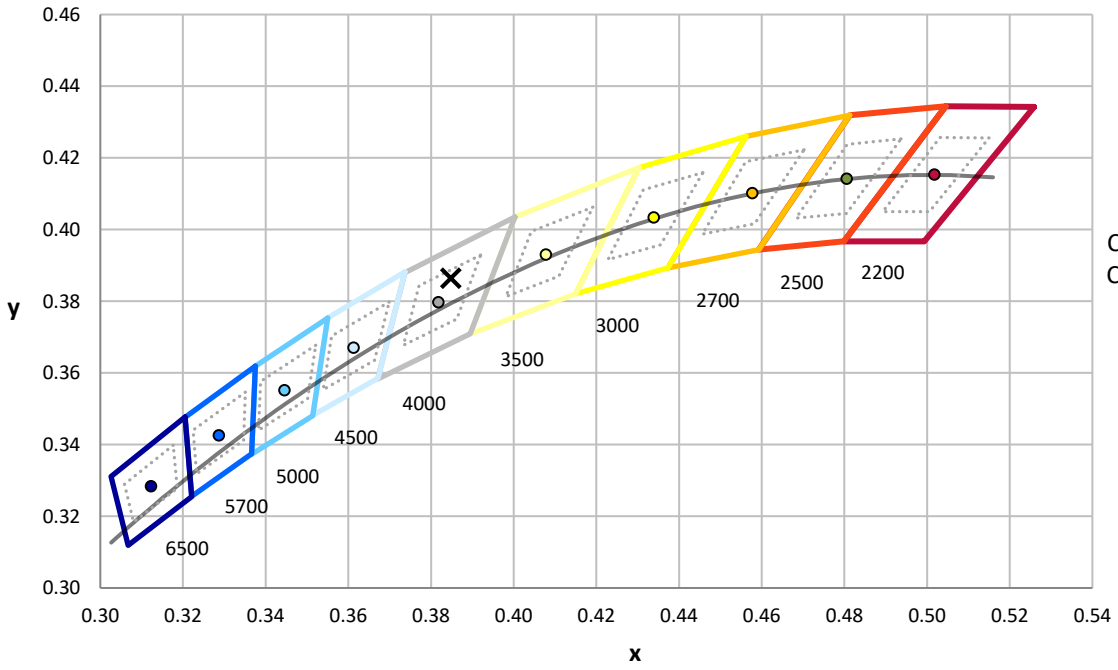
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-2106-271-4

## CIE 1931 Chromaticity Diagram




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



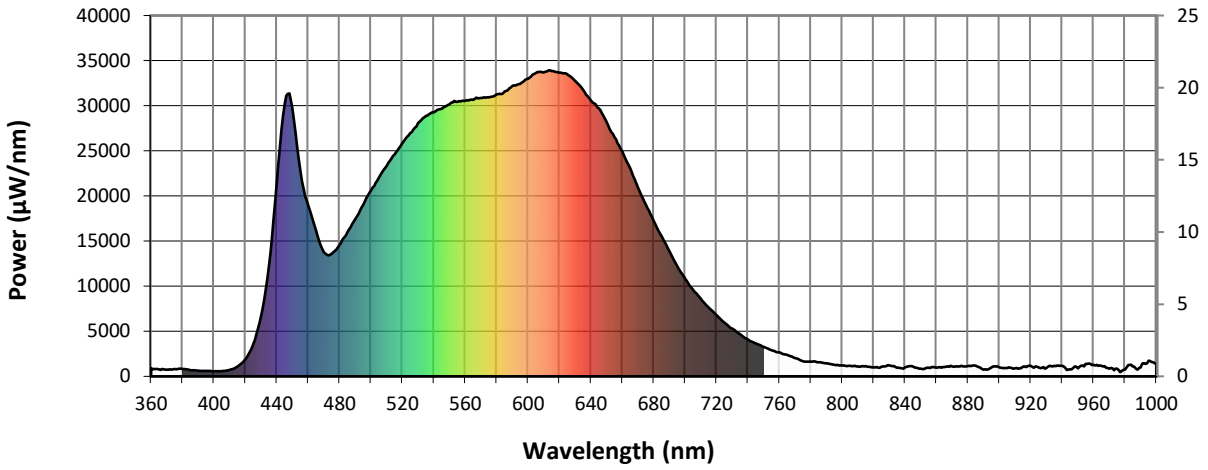

CCT = 3952K
CIE x = 0.3848
CIE y = 0.3864
Duv = 0.0032

Point lies inside the ANSI 4000K 4-step quadrangle

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## Photopic Flux vs. Wavelength



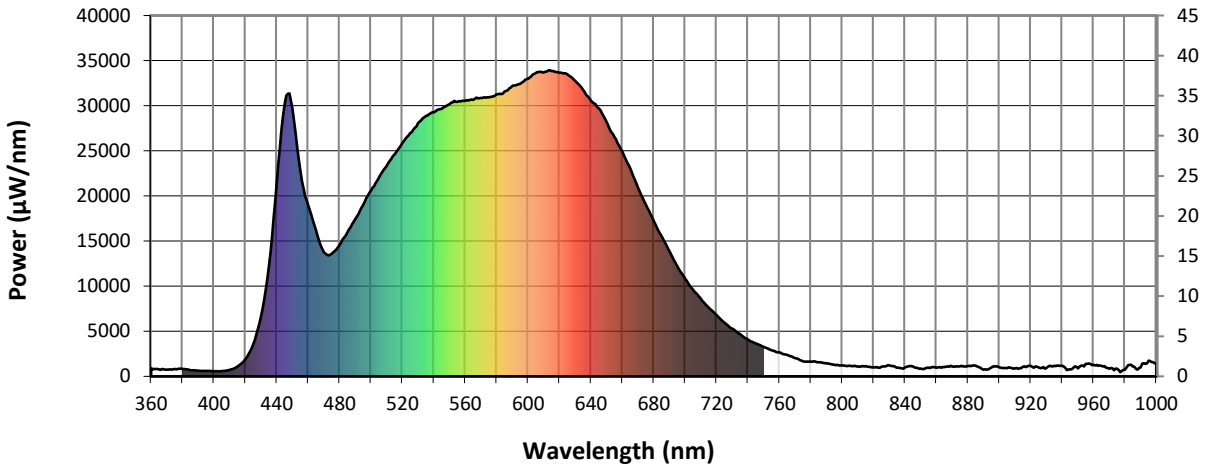

######

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 910 | NR | 490 | 17463 | NR | 620 | 33665 | NR | 750 | 3275 | NR | 880 | 1122 | NR |
| 365 | 784 | NR | 495 | 18986 | NR | 625 | 33477 | NR | 755 | 2901 | NR | 885 | 1170 | NR |
| 370 | 741 | NR | 500 | 20627 | NR | 630 | 32742 | NR | 760 | 2665 | NR | 890 | 751 | NR |
| 375 | 805 | NR | 505 | 21980 | NR | 635 | 31767 | NR | 765 | 2371 | NR | 895 | 990 | NR |
| 380 | 830 | NR | 510 | 23346 | NR | 640 | 30561 | NR | 770 | 2039 | NR | 900 | 982 | NR |
| 385 | 690 | NR | 515 | 24600 | NR | 645 | 29699 | NR | 775 | 1676 | NR | 905 | 936 | NR |
| 390 | 625 | NR | 520 | 25854 | NR | 650 | 28202 | NR | 780 | 1616 | NR | 910 | 888 | NR |
| 395 | 599 | NR | 525 | 26952 | NR | 655 | 26484 | NR | 785 | 1573 | NR | 915 | 1068 | NR |
| 400 | 568 | NR | 530 | 28081 | NR | 660 | 24930 | NR | 790 | 1452 | NR | 920 | 1179 | NR |
| 405 | 577 | NR | 535 | 28884 | NR | 665 | 23070 | NR | 795 | 1263 | NR | 925 | 1008 | NR |
| 410 | 720 | NR | 540 | 29271 | NR | 670 | 20926 | NR | 800 | 1203 | NR | 930 | 927 | NR |
| 415 | 1084 | NR | 545 | 29657 | NR | 675 | 19011 | NR | 805 | 1175 | NR | 935 | 1185 | NR |
| 420 | 1884 | NR | 550 | 30152 | NR | 680 | 17237 | NR | 810 | 1108 | NR | 940 | 1166 | NR |
| 425 | 3574 | NR | 555 | 30445 | NR | 685 | 15540 | NR | 815 | 1125 | NR | 945 | 779 | NR |
| 430 | 6636 | NR | 560 | 30559 | NR | 690 | 13894 | NR | 820 | 988 | NR | 950 | 905 | NR |
| 435 | 12267 | NR | 565 | 30663 | NR | 695 | 12196 | NR | 825 | 1070 | NR | 955 | 1369 | NR |
| 440 | 21326 | NR | 570 | 30877 | NR | 700 | 10840 | NR | 830 | 1219 | NR | 960 | 1280 | NR |
| 445 | 30150 | NR | 575 | 30916 | NR | 705 | 9613 | NR | 835 | 944 | NR | 965 | 1177 | NR |
| 450 | 29740 | NR | 580 | 31248 | NR | 710 | 8583 | NR | 840 | 983 | NR | 970 | 868 | NR |
| 455 | 22827 | NR | 585 | 31581 | NR | 715 | 7631 | NR | 845 | 1097 | NR | 975 | 843 | NR |
| 460 | 19023 | NR | 590 | 32218 | NR | 720 | 6779 | NR | 850 | 856 | NR | 980 | 744 | NR |
| 465 | 16163 | NR | 595 | 32417 | NR | 725 | 5950 | NR | 855 | 949 | NR | 985 | 1113 | NR |
| 470 | 13739 | NR | 600 | 32976 | NR | 730 | 5282 | NR | 860 | 954 | NR | 990 | 1002 | NR |
| 475 | 13571 | NR | 605 | 33620 | NR | 735 | 4673 | NR | 865 | 1019 | NR | 995 | 1732 | NR |
| 480 | 14597 | NR | 610 | 33704 | NR | 740 | 4087 | NR | 870 | 1089 | NR | 1000 | 1390 | NR |
| 485 | 15964 | NR | 615 | 33846 | NR | 745 | 3658 | NR | 875 | 1089 | NR | | | |

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## Scotopic Flux vs. Wavelength



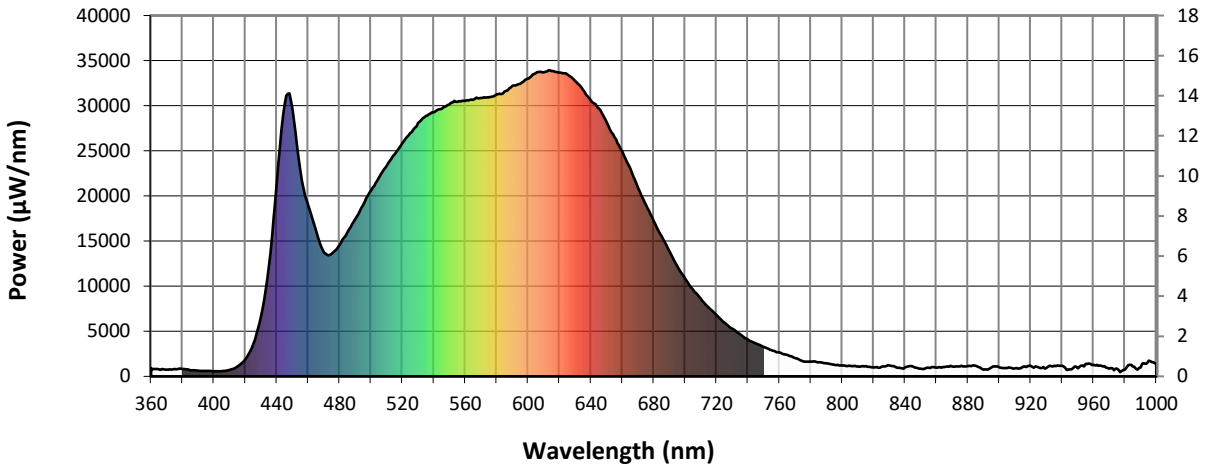

**Scotopic Lumens: 3705.7** **S/P: 1.75**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 910 | NR | 490 | 17463 | NR | 620 | 33665 | NR | 750 | 3275 | NR | 880 | 1122 | NR |
| 365 | 784 | NR | 495 | 18986 | NR | 625 | 33477 | NR | 755 | 2901 | NR | 885 | 1170 | NR |
| 370 | 741 | NR | 500 | 20627 | NR | 630 | 32742 | NR | 760 | 2665 | NR | 890 | 751 | NR |
| 375 | 805 | NR | 505 | 21980 | NR | 635 | 31767 | NR | 765 | 2371 | NR | 895 | 990 | NR |
| 380 | 830 | NR | 510 | 23346 | NR | 640 | 30561 | NR | 770 | 2039 | NR | 900 | 982 | NR |
| 385 | 690 | NR | 515 | 24600 | NR | 645 | 29699 | NR | 775 | 1676 | NR | 905 | 936 | NR |
| 390 | 625 | NR | 520 | 25854 | NR | 650 | 28202 | NR | 780 | 1616 | NR | 910 | 888 | NR |
| 395 | 599 | NR | 525 | 26952 | NR | 655 | 26484 | NR | 785 | 1573 | NR | 915 | 1068 | NR |
| 400 | 568 | NR | 530 | 28081 | NR | 660 | 24930 | NR | 790 | 1452 | NR | 920 | 1179 | NR |
| 405 | 577 | NR | 535 | 28884 | NR | 665 | 23070 | NR | 795 | 1263 | NR | 925 | 1008 | NR |
| 410 | 720 | NR | 540 | 29271 | NR | 670 | 20926 | NR | 800 | 1203 | NR | 930 | 927 | NR |
| 415 | 1084 | NR | 545 | 29657 | NR | 675 | 19011 | NR | 805 | 1175 | NR | 935 | 1185 | NR |
| 420 | 1884 | NR | 550 | 30152 | NR | 680 | 17237 | NR | 810 | 1108 | NR | 940 | 1166 | NR |
| 425 | 3574 | NR | 555 | 30445 | NR | 685 | 15540 | NR | 815 | 1125 | NR | 945 | 779 | NR |
| 430 | 6636 | NR | 560 | 30559 | NR | 690 | 13894 | NR | 820 | 988 | NR | 950 | 905 | NR |
| 435 | 12267 | NR | 565 | 30663 | NR | 695 | 12196 | NR | 825 | 1070 | NR | 955 | 1369 | NR |
| 440 | 21326 | NR | 570 | 30877 | NR | 700 | 10840 | NR | 830 | 1219 | NR | 960 | 1280 | NR |
| 445 | 30150 | NR | 575 | 30916 | NR | 705 | 9613 | NR | 835 | 944 | NR | 965 | 1177 | NR |
| 450 | 29740 | NR | 580 | 31248 | NR | 710 | 8583 | NR | 840 | 983 | NR | 970 | 868 | NR |
| 455 | 22827 | NR | 585 | 31581 | NR | 715 | 7631 | NR | 845 | 1097 | NR | 975 | 843 | NR |
| 460 | 19023 | NR | 590 | 32218 | NR | 720 | 6779 | NR | 850 | 856 | NR | 980 | 744 | NR |
| 465 | 16163 | NR | 595 | 32417 | NR | 725 | 5950 | NR | 855 | 949 | NR | 985 | 1113 | NR |
| 470 | 13739 | NR | 600 | 32976 | NR | 730 | 5282 | NR | 860 | 954 | NR | 990 | 1002 | NR |
| 475 | 13571 | NR | 605 | 33620 | NR | 735 | 4673 | NR | 865 | 1019 | NR | 995 | 1732 | NR |
| 480 | 14597 | NR | 610 | 33704 | NR | 740 | 4087 | NR | 870 | 1089 | NR | 1000 | 1390 | NR |
| 485 | 15964 | NR | 615 | 33846 | NR | 745 | 3658 | NR | 875 | 1089 | NR | | | |

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REPORT NUMBER: SP1-2106-271-4

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: 1498.3** **S/P: 0.71**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 910 | NR | 490 | 17463 | NR | 620 | 33665 | NR | 750 | 3275 | NR | 880 | 1122 | NR |
| 365 | 784 | NR | 495 | 18986 | NR | 625 | 33477 | NR | 755 | 2901 | NR | 885 | 1170 | NR |
| 370 | 741 | NR | 500 | 20627 | NR | 630 | 32742 | NR | 760 | 2665 | NR | 890 | 751 | NR |
| 375 | 805 | NR | 505 | 21980 | NR | 635 | 31767 | NR | 765 | 2371 | NR | 895 | 990 | NR |
| 380 | 830 | NR | 510 | 23346 | NR | 640 | 30561 | NR | 770 | 2039 | NR | 900 | 982 | NR |
| 385 | 690 | NR | 515 | 24600 | NR | 645 | 29699 | NR | 775 | 1676 | NR | 905 | 936 | NR |
| 390 | 625 | NR | 520 | 25854 | NR | 650 | 28202 | NR | 780 | 1616 | NR | 910 | 888 | NR |
| 395 | 599 | NR | 525 | 26952 | NR | 655 | 26484 | NR | 785 | 1573 | NR | 915 | 1068 | NR |
| 400 | 568 | NR | 530 | 28081 | NR | 660 | 24930 | NR | 790 | 1452 | NR | 920 | 1179 | NR |
| 405 | 577 | NR | 535 | 28884 | NR | 665 | 23070 | NR | 795 | 1263 | NR | 925 | 1008 | NR |
| 410 | 720 | NR | 540 | 29271 | NR | 670 | 20926 | NR | 800 | 1203 | NR | 930 | 927 | NR |
| 415 | 1084 | NR | 545 | 29657 | NR | 675 | 19011 | NR | 805 | 1175 | NR | 935 | 1185 | NR |
| 420 | 1884 | NR | 550 | 30152 | NR | 680 | 17237 | NR | 810 | 1108 | NR | 940 | 1166 | NR |
| 425 | 3574 | NR | 555 | 30445 | NR | 685 | 15540 | NR | 815 | 1125 | NR | 945 | 779 | NR |
| 430 | 6636 | NR | 560 | 30559 | NR | 690 | 13894 | NR | 820 | 988 | NR | 950 | 905 | NR |
| 435 | 12267 | NR | 565 | 30663 | NR | 695 | 12196 | NR | 825 | 1070 | NR | 955 | 1369 | NR |
| 440 | 21326 | NR | 570 | 30877 | NR | 700 | 10840 | NR | 830 | 1219 | NR | 960 | 1280 | NR |
| 445 | 30150 | NR | 575 | 30916 | NR | 705 | 9613 | NR | 835 | 944 | NR | 965 | 1177 | NR |
| 450 | 29740 | NR | 580 | 31248 | NR | 710 | 8583 | NR | 840 | 983 | NR | 970 | 868 | NR |
| 455 | 22827 | NR | 585 | 31581 | NR | 715 | 7631 | NR | 845 | 1097 | NR | 975 | 843 | NR |
| 460 | 19023 | NR | 590 | 32218 | NR | 720 | 6779 | NR | 850 | 856 | NR | 980 | 744 | NR |
| 465 | 16163 | NR | 595 | 32417 | NR | 725 | 5950 | NR | 855 | 949 | NR | 985 | 1113 | NR |
| 470 | 13739 | NR | 600 | 32976 | NR | 730 | 5282 | NR | 860 | 954 | NR | 990 | 1002 | NR |
| 475 | 13571 | NR | 605 | 33620 | NR | 735 | 4673 | NR | 865 | 1019 | NR | 995 | 1732 | NR |
| 480 | 14597 | NR | 610 | 33704 | NR | 740 | 4087 | NR | 870 | 1089 | NR | 1000 | 1390 | NR |
| 485 | 15964 | NR | 615 | 33846 | NR | 745 | 3658 | NR | 875 | 1089 | NR | | | |

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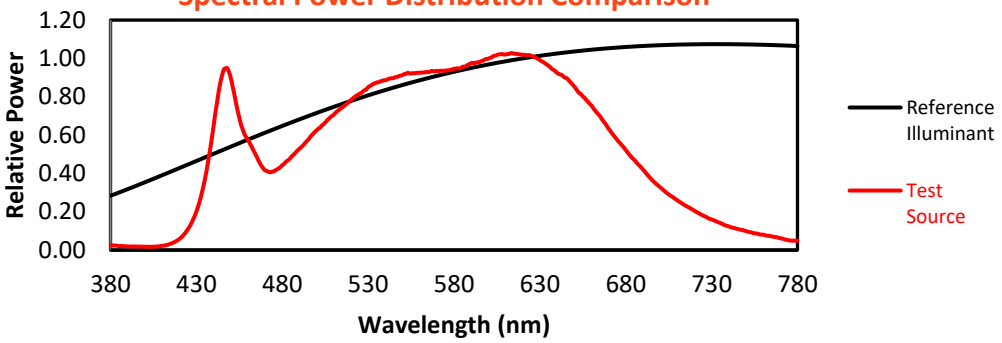
REPORT NUMBER: SP1-2106-271-4

# TM-30-18

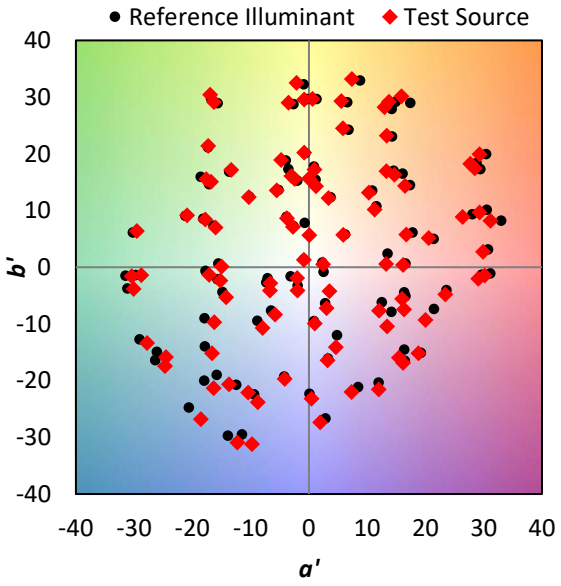
## Summary

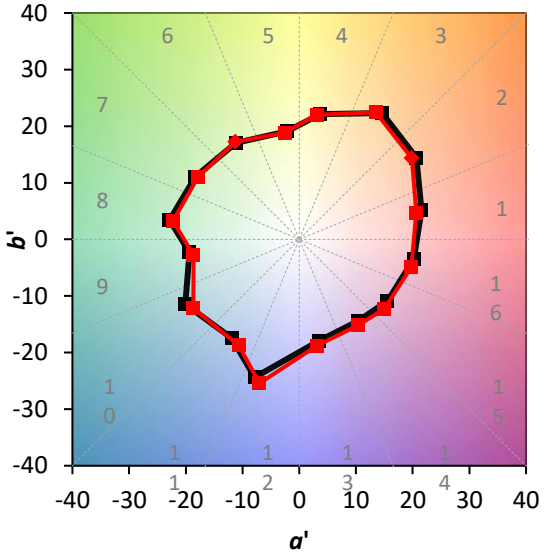
$R_f$ = 92.2
$R_g$ = 98.9
CIE $R_a$ = 92.2
$R_9$ = 63.3

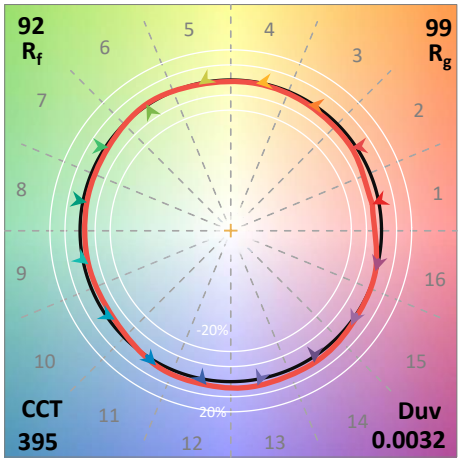
## Spectral Power Distribution Comparison

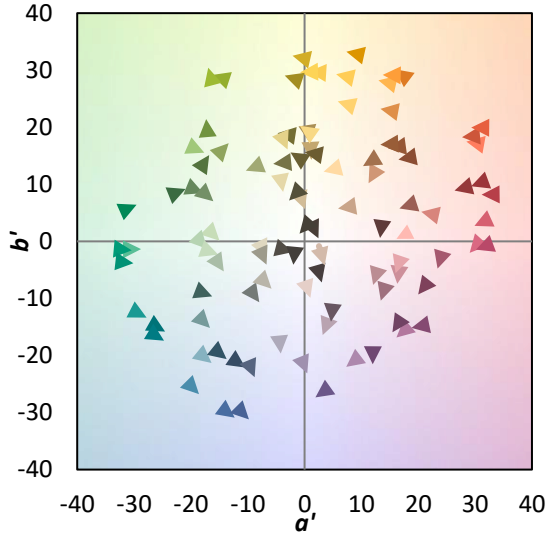



## Color Vector Graphics



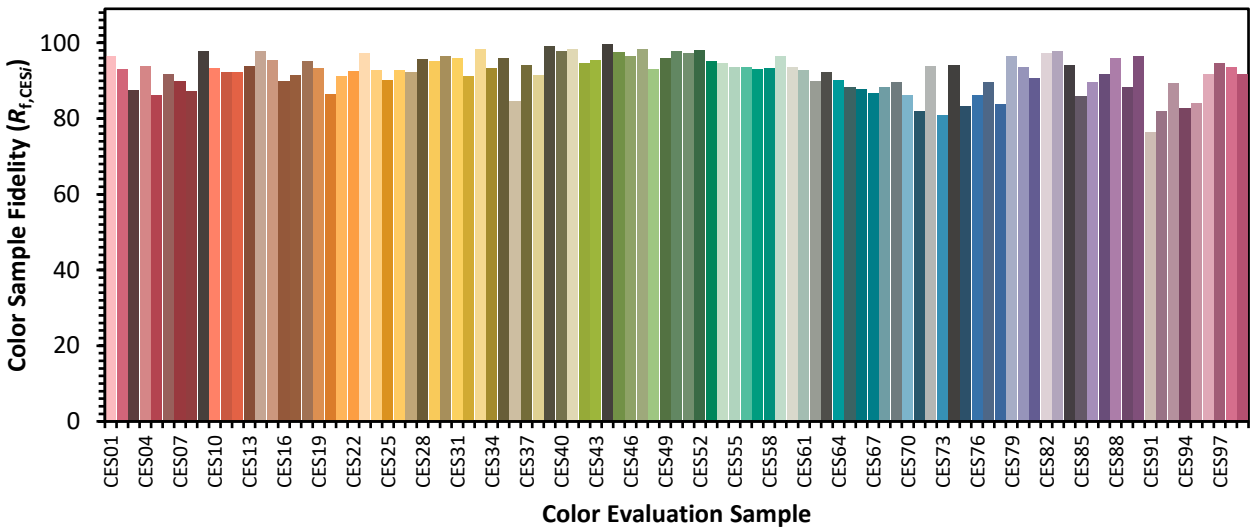
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## TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 93 | CES51 = 97 | CES76 = 86 |
| CES02 = 61 | CES27 = 92 | CES52 = 98 | CES77 = 90 |
| CES03 = 31 | CES28 = 96 | CES53 = 95 | CES78 = 84 |
| CES04 = 69 | CES29 = 95 | CES54 = 95 | CES79 = 97 |
| CES05 = 49 | CES30 = 97 | CES55 = 94 | CES80 = 94 |
| CES06 = 50 | CES31 = 96 | CES56 = 94 | CES81 = 91 |
| CES07 = 42 | CES32 = 91 | CES57 = 93 | CES82 = 97 |
| CES08 = 41 | CES33 = 98 | CES58 = 93 | CES83 = 98 |
| CES09 = 29 | CES34 = 93 | CES59 = 96 | CES84 = 94 |
| CES10 = 74 | CES35 = 96 | CES60 = 94 | CES85 = 86 |
| CES11 = 57 | CES36 = 85 | CES61 = 93 | CES86 = 90 |
| CES12 = 63 | CES37 = 94 | CES62 = 90 | CES87 = 92 |
| CES13 = 43 | CES38 = 91 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 90 | CES89 = 88 |
| CES15 = 71 | CES40 = 98 | CES65 = 88 | CES90 = 96 |
| CES16 = 47 | CES41 = 98 | CES66 = 88 | CES91 = 76 |
| CES17 = 49 | CES42 = 95 | CES67 = 87 | CES92 = 82 |
| CES18 = 56 | CES43 = 95 | CES68 = 88 | CES93 = 89 |
| CES19 = 71 | CES44 = 100 | CES69 = 90 | CES94 = 83 |
| CES20 = 66 | CES45 = 97 | CES70 = 86 | CES95 = 84 |
| CES21 = 85 | CES46 = 97 | CES71 = 82 | CES96 = 92 |
| CES22 = 78 | CES47 = 98 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 93 | CES73 = 81 | CES98 = 93 |
| CES24 = 90 | CES49 = 96 | CES74 = 94 | CES99 = 92 |
| CES25 = 71 | CES50 = 98 | CES75 = 83 | |

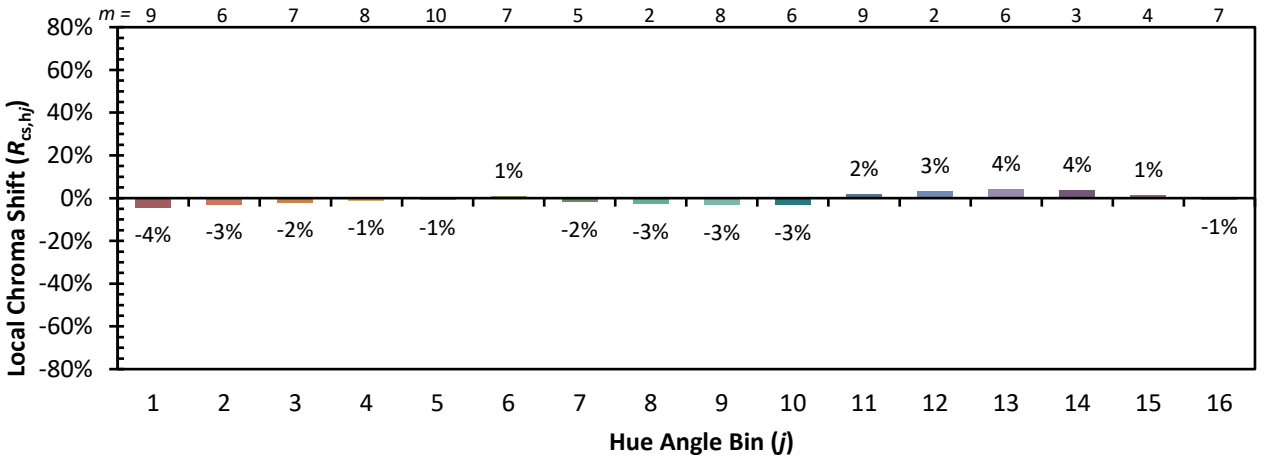


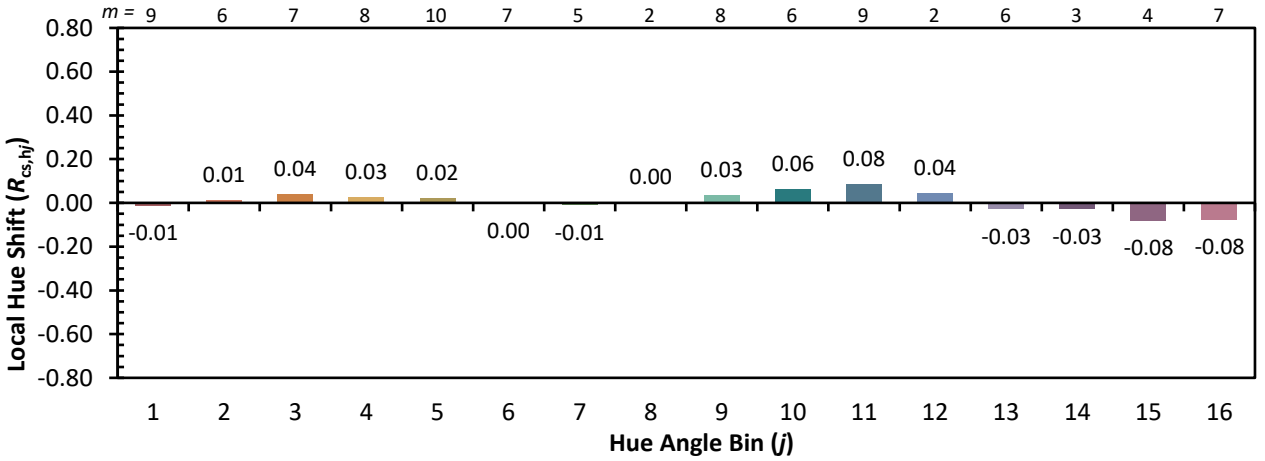
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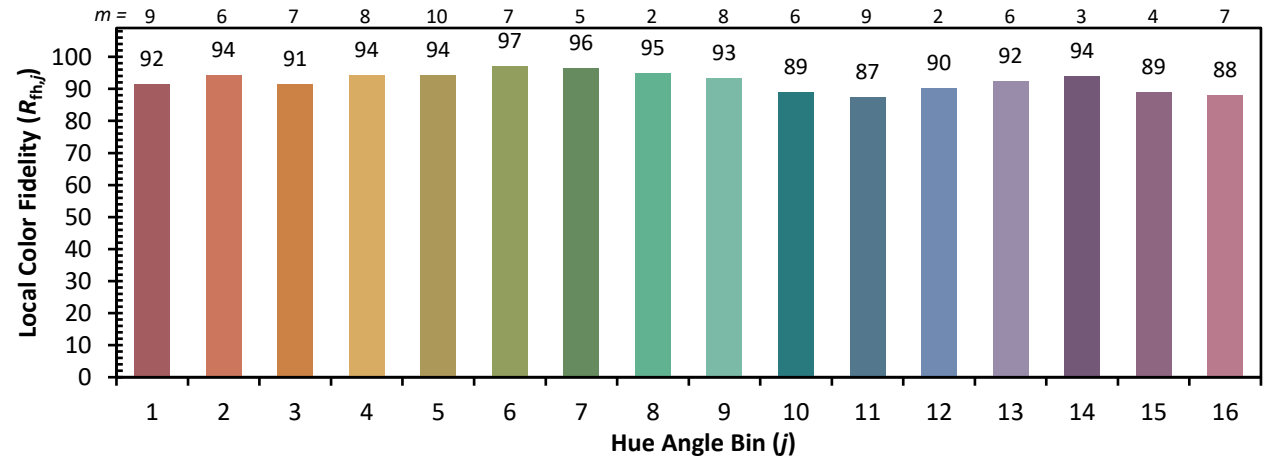
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**TM-30-18**

## Color Rendition by Hue-Angle Bin



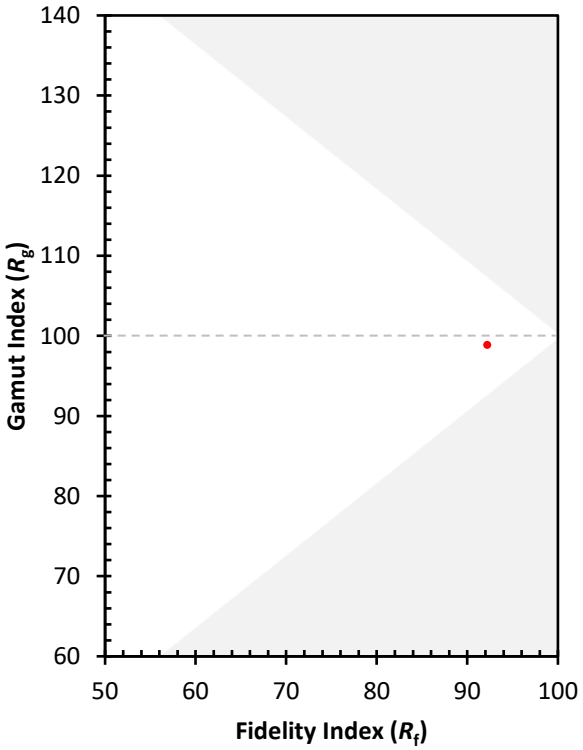



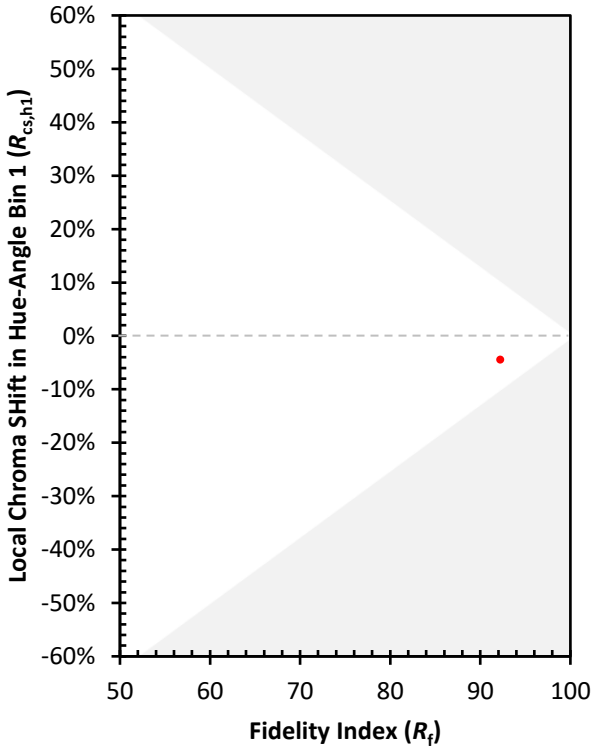
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### Measure Comparisons




(END OF REPORT)